

ESSAYS IN INTERNATIONAL FINANCE

No. 158, October 1985

THE EFFECTS OF GOVERNMENT DEFICITS:
A COMPARATIVE ANALYSIS OF
CROWDING OUT

CHARLES E. DUMAS



INTERNATIONAL FINANCE SECTION

DEPARTMENT OF ECONOMICS

PRINCETON UNIVERSITY

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Library of Congress Cataloging-in-Publication Data

Dumas, Charles E.

The effects of government deficits.

(Essays in international finance, ISSN 0071-142X ; no. 158)

Bibliography: p.

1. Interest rates. 2. Budget deficits—United States. 3. Crowding out
(Economics) 4. Budget deficits—European Economic Community countries.

I. Title II. Series.

HG136.P7 no. 158 [HG1621] 332'.042 s 85-19423

ISBN 0-88165-065-X (pbk.) [339.5'23]

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Printed in the United States of America by Princeton University Press at Princeton, New Jersey.

International Standard Serial Number: 0071-142X

International Standard Book Number: 0-88165-065-X

Library of Congress Catalog Card Number: 85-19423

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The Effects of Government Deficits: A Comparative Analysis of Crowding Out

1 Introduction

Economic recovery from a severe three-year recession in the United States and Western Europe is now about two and a half years old. Skepticism is widespread about the possibility of sustained growth in the medium term. The pessimists, whose case this Essay will argue, claim that large government deficits in the United States and Europe will cause interest rates high enough to restrain economic growth, and perhaps even bring on a new recession. Behind this concern lies the view that expansion in the developed economies, except perhaps Japan, can be lasting only if accompanied by a large increase in business fixed investment, inventory building, and probably housing—both absolutely and as a share of GNP. The savings needed to finance such increased investment, however, are being drained away to finance large government deficits.

Individual industrial countries have at various times been able to mitigate a shortage of domestic savings by imports of capital (corresponding to current-account deficits in the balance of payments). But such international flows have not in general been long lasting and have in any case merely reduced the availability of savings domestically in the countries running current-account surpluses. The industrial economies taken together are likely to remain net exporters of capital to the less-developed countries (LDCs), so that current-account surpluses will outweigh deficits.

In the eight quarters from the low point of the recession at the end of 1982 to the last quarter of 1984, real GNP grew at a rapid annual rate of 6.0 percent in the United States; the rate was 5.2 percent in Japan, 2.6 percent in West Germany, and 2.7 percent in Britain. In France, growth was only 1.4 percent, reflecting restrictive economic policies.

Supporters of the policies of the current U.S. administration, which has actively raised the U.S. government deficit, believe that the contrast between rapid growth in the United States and sluggish performance in Europe reflects more than cyclical factors. Vigorous U.S. performance in modern service and high-technology sectors, spurred (it is claimed) by large recent tax cuts, is compared with the constraints imposed on European economies by heavy dependence on government spending, restrictive labor practices, and excessive burdens of social security. On this view, the prolonged 1980-82 U.S. recession represented a necessary correction both of U.S. tendencies in the European direction under previous administrations and of the high infla-

tion that was a partial result. All is now set fair for continued expansion, with the main competition—at least in high-technology industries—coming from the Japanese and other countries in the Pacific Basin. The U.S. government deficit, while regretted, is not thought to threaten economic growth.

That the deficits are unlikely to thwart the recovery in the United States is also a traditional Keynesian view of the present economic situation. Likewise, budget deficits are not blamed for slow European growth. Rather, traditional Keynesians ascribe those deficits to underemployment of resources and believe that they would be largely or entirely eliminated by a move to “high” employment. Heavy borrowing by the government, and high consumption generally, are not thought to be a matter of concern as long as capacity-utilization rates and inflation are quite low. On this view, neither inflation nor interest rates should be unduly raised by rapid expansion, at least for some time. In the United States, these points have to some extent been plagiarized by administration spokesmen supposedly hostile to Keynesian theory.

In Europe, where Germany and some other countries have been making a certain amount of progress in controlling government deficits (especially on a “high-employment” basis), traditional Keynesians tend to treat restrictive fiscal policies as the cause of the recovery’s sluggishness. The debacle accompanying France’s major swing into budget deficits in 1981-83 is explained by observing that such a policy was out of phase with the restrictiveness and recession elsewhere in the industrial world. Japanese economic success, after all, has also been accompanied by significant government deficits.

The main rival macroeconomic theories—the monetarist/supply-side blend adopted by the U.S. administration and traditional Keynesianism—are united in the view that government deficits should not be an obstacle to continued economic growth at this point. But financial markets have been signaling the opposite. Although lower than at their highest levels of the early 1980s, interest rates in the United States and Europe remain very high, and they started to rise again in the United States at an unusually early stage in the recovery. Real interest rates (i.e., after removing the effects of inflation) remain at very high levels (see Table 1 below). Moreover, yields in bond markets worldwide are mostly well above money-market interest rates and have remained so in a growth period, contrary to normal cyclical experience. High and rising real interest rates cannot plausibly be attributed to perversely tight monetary policies, which have their primary impact on money markets.

The contention developed in this Essay is that the main cause of present high real interest rates is a fundamental disequilibrium between the supply of and demand for investable funds. If instead of present real interest rates we were to have historically normal real rates, the sum of demand for investment funds—government deficits, housing, business fixed investment, and inventory building—would exceed the supply of private savings—personal savings

plus business depreciation and retained profits. Hence, abnormally high real interest rates are necessary to establish equilibrium in financial markets. Moreover, high interest rates achieve this equilibrium neither by diminishing government deficits (rather the contrary) nor by stimulating private savings, even in the household sector. Equilibrium has been achieved by forcing levels of housing and business investment (fixed and inventory) below where they would be at more normal real interest rates. The danger is that this will result in inadequate longer-term economic growth and general economic welfare.

A gamut of influences has probably contributed to the slowing of growth during the last fifteen years, and these are touched on in this Essay. But action to reverse the crowding out of private investment by government deficits is a necessary condition for a return to low unemployment with faster growth of productivity and real income. Viewed from the perspective of present vs. future welfare, personal or government consumption must be sacrificed today if disproportionately larger amounts of consumption are not to be sacrificed in the future.

I begin the crowding-out analysis developed here by asking why interest rates are so high. I argue that current capacity utilization is high in relation to that part of the productive apparatus that is economically usable at present costs and prices (section 2).

This inadequacy of existing productive capacity is examined by an international comparative analysis of downward trends in capital formation relative to GNP. Against this I set the increased investment needed to accommodate demographic growth and raise employment, to substitute for much more costly oil and labor, to provide for shifts in the pattern of demand and means of production caused by the high-technology revolution, and to accommodate the effects of regulations and controls on business. To the extent that investment achieves deepening of capital by substituting for high-priced labor, the investment needed to achieve increases in employment—capital broadening—represents a doubling-up of the demand for capital (section 3).

The downswing of business investment in 1974-79, the first-round result of falling economic growth and business profitability (together with the psychological deterrents of the oil shocks, inflation, and widespread antibusiness sentiment), made a sharp recovery of business investment all the more imperative for economic health in the 1980s. In the event, investment has declined further (even allowing for its recent recovery) and is unlikely to be fully revived without a removal of government deficits. These deficits are examined in the context of the overall generation of savings in the five major industrial economies (section 4).

After a look at the impact of international flows of capital and exchange-rate changes (section 5), I explain why the monetarist/supply-side and traditional

Keynesian theories and prescriptions do not adequately meet the present situation. The fiscal retrenchment required for a return to satisfactory medium-term economic growth is estimated to vary between 2½ and 5½ percent of GDP in the United States and the major three European economies. Such retrenchment will have only a slight short-term restraining effect on growth; the lower interest rates made possible by such a policy will quickly bring forth currently pent-up investment. Increased investment by itself may not be enough to restore satisfactory growth and high levels of employment over the long term. If a return to normal real interest rates and higher rates of net business investment does not adequately revive economic growth, or if such lower real interest rates do not result in the needed stimulus to investment, that will be the time to take additional policy measures (section 6).

The Essay concludes with a survey of the severe risks associated with continuation, even for a short while, of present levels of government deficits.

2 The Case for the Crowding-Out Analysis

Why Are Real Interest Rates So High?

Explanation of the abnormally high level of interest rates in relation to recent inflation lies at the heart of the crowding-out analysis. In most countries, interest rates on short-term money-market instruments and Treasury bills were only about 1 to 2 percent above the rate of inflation in the twenty years between 1953 and 1973 (Table 1). For government bonds, real yields were typically about 1 to 4 percent. They were even lower in the 1970s than in the 1950s and 1960s. But around the turn of the decade, real interest rates moved up sharply, and they have been at or near record highs since the end of the prolonged recession of 1980-82.

Why did real interest rates move down and then up so sharply? The answer seems to lie in motives for private business investment. It illustrates the two-way causality whereby business investment may be affected by the level of real interest rates (both directly and through the effect of the rates on overall demand and output), while the level of real interest rates is simultaneously affected by the strength of business investment. While high interest rates were necessary to choke off potentially strong private business investment (and also housing) in recent years, it is government deficits in combination with a strong private propensity to invest, rather than by themselves, that have been the cause of high interest rates, in a context of "inadequate" savings (except in Japan).

The chief reason for low real interest rates in 1974-79, on the crowding-out approach, was a low private-sector propensity to invest. The downswing in the growth of output and demand and in business profitability mainly explain

TABLE 1
REAL INTEREST RATES, 1954-85
(in percent)

	U.S.	Japan	Germany	France	Britain
Short-term rates:					
1954-63	2.6 ^a	9.6 ^b	3.4	4.1	4.1
1964-73	5.6	7.1	5.3	6.2	6.5
1974-79	7.7	7.7	5.1	9.2	10.3
1980-84	12.3	7.6	8.0	13.3	11.7
April 1985	8.3	6.1	5.7	10.5	12.4
Government bonds (medium-term):					
1954-63	3.6	n.a.	6.4 ^c	5.3	5.3
1964-73	5.6	7.0 ^d	7.5	6.6	8.1
1974-79	8.3	8.0	7.7	9.5	13.6
1980-84	12.4	8.0	8.7	14.0	12.6
April 1985	11.6	6.7	7.3	12.0	10.4
Increase in consumer spending deflator p.a.:					
1954-63	1.7 ^a	3.8 ^b	1.9 ^c	4.2	2.6
1964-73	3.5	6.0 ^d	3.6	4.7	5.5
1974-79	7.4	9.4	4.7	10.4	15.5
1980-84	6.3	3.6	4.4	10.8	9.3
April 1985 ^e	3.6	2.0	2.5	6.5	6.9
Real short-term rates:					
1954-63	0.8 ^a	6.0 ^b	1.5	0.0	1.5
1964-73	2.2	1.3	1.8	1.6	1.1
1974-79	0.6	-1.3	0.5	-0.7	-4.2
1980-84	5.6	3.9	3.4	2.3	2.2
April 1985	4.5	4.0	3.1	3.8	5.1
Real long-term rates:					
1954-63	1.9	n.a.	4.1 ^c	1.1	2.7
1964-73	2.1	0.8 ^d	3.8	1.8	2.6
1974-79	1.0	-1.3	2.9	-0.8	-1.2
1980-84	5.7	4.2	4.1	2.9	3.0
April 1985	7.7	4.6	4.7	5.2	3.3

^a 1955-63; corresponding increase in consumer spending deflator was 1.8 percent.

^b 1957-63.

^c 1956-63; corresponding increase in consumer spending deflator was 2.2 percent.

^d 1966-73; corresponding increase in consumer spending deflator was 6.2 percent.

^e 12-month increase in CPI.

SOURCE: Interest rates from the IMF's *International Financial Statistics* (IFS). Consumer-price inflation from OECD, *National Income Accounts of Member Countries* (NIA), IFS, and national sources.

NATIONAL SOURCES: U.S., *Survey of Current Business*; Japan, Ministry of Finance publications; Germany, *Statistisches Bundesamt* and Bundesbank; France, Institut National des Statistiques et Etudes Economiques; Britain, Central Statistical Office.

this. Less tangible discouragements to business investment in 1974-79 were the psychological effects of the first oil shock (which was rightly, if vaguely, perceived as a watershed), the widespread antibusiness climate of public opinion, and the disturbing increase in inflation. Antibusiness sentiment contributed to a range of regulations and controls (varying in style across countries) that tended to restrain business freedom of action and management prerogatives, often in a much more obstructive form than was needed to achieve the declared regulatory goals. Probably more directly important was the effect of wage behavior: there was a massive increase in the ratio of wages to GNP in the period until the mid-1970s. Not only did this stimulate inflation, but it contributed directly to lower profitability, especially by making actual profits very vulnerable to the slowdown in growth that followed the first oil crisis. However, this wage behavior was itself encouraged by antibusiness sentiment.

Because of these discouragements to business investment, the increase in government deficits in 1974-79—large in Japan and most of Europe if not the United States—did not crowd out private investment and thereby cause high real interest rates. Moreover, the OPEC current-account surplus also offset the effect of budget deficits in 1974-79, permitting the industrial countries to import capital to finance their current-account deficits. Private savings remained relatively stable except in Britain, where they rose sharply.

Most of these downward influences on real interest rates were reversed during the early 1980s. After the second oil-price shock, high oil and labor prices tended to encourage cost-saving investment, despite lower economic growth. For many businesses, such investments became necessary for survival or at least for the avoidance of further decline. Low growth also helped to depress oil demand; together with rapid growth in OPEC imports, this has switched OPEC from surplus to deficit. Investment demand must now be met from industrial-country savings. Slow growth has constrained government revenues and further boosted social-security spending on unemployment, tending to enlarge government budget deficits. In some countries, especially the United States, budget deficits have been stimulated by discretionary tax cuts and spending increases. The business sector is aware of the need to put right the shortfall of investment in 1974-79, but government deficits are diminishing the flow of funds to investment. High real interest rates reflect the need for a large shift from private and public consumption to saving and investment. They also suggest that this need is matched by the will to invest; otherwise, real interest rates would decline.

Another possible explanation for high real interest rates is that monetary policies are particularly tight in the industrial countries, but there are three major reasons for doubting this explanation. First, except in Britain, there is a significant positive gap between bond-market yields, which are compara-

tively unaffected by monetary-policy actions, and money-market yields, which are directly affected. This suggests that monetary policy is hardly an upward force on interest rates generally. Second, real interest rates did not reach their present high plateau at the point when monetary policy was generally considered to be causing deflation (late-1979 to mid-1982) but only in the subsequent period of cyclical recovery. Third, this recovery has been associated with a switch to an accommodative monetary policy, reflected in the change from negative to positive real monetary growth in most countries. Indeed, monetary growth is near or above the top of the target bands, not lower as might be expected during a tight-money period (see Table 2). (In France, the target bands are ambitious in relation to the last few years' inflation and to actual money growth; monetary policy is quite tight. In Britain, an expanding government deficit and buoyant private demand have raised monetary growth well above target, forcing up short-term interest rates.) Even some Keynesian economists, who have in the past attributed high interest rates to tight monetary policy, are adapting Keynesian analytical methods to support the crowding-out analysis (e.g., Rivlin, ed., 1984).

The supply-side/monetarist school of thought relies mostly on inflationary expectations to explain current high interest rates. On this approach, current interest rates are not high in relation to prospective inflation. (Some supply-siders—in common with traditional Keynesians—also maintain that mon-

TABLE 2
INFLATION EXPECTATIONS AND MONETARY INDICATORS
(in percent)

	U.S.	Japan	Germany	France	Britain
April 1985 bond yields	11.6	6.9	7.3	12.0	11.4
1954-73 real bond yields	2.0	0.8	3.9	1.5	2.6
Implied inflation expectation	9.4	6.1	3.3	10.3	8.6
12-month increase in CPI	3.6	2.0	2.5	6.5	7.0
Differential	5.6	4.0	0.8	3.6	1.5
Monetary growth:					
Indicator	M2	M2	M3	M2	M3
Dec. 1982 to Dec. 1984	10.1	7.5	5.7	9.6	10.4
1985 target	6-9	8	3-5 ^a	4-6	5-9
12-month actual to April 1985	8.1	7.7 ^b	5.0 ^c	8.2 ^c	12.6

^a Germany's targeted variable is central bank money.

^b To March 1985.

^c To February 1985.

SOURCE: Morgan Guaranty Trust economics departments (MGT) and national sources.

etary policy is tight.) Clearly, such expectations can have a role only in explaining bond yields; they have little relevance to short-term interest rates, whose high real level therefore requires further explanation. In the United States, a comparison of 1954-73 real government-bond yields, which averaged about 2 percent, with current nominal bond yields of about 11.5 percent, implies that the bond market expects the inflation rate to be 9 to 9.5 percent. This is well above the average inflation rate for the last ten years, a period that included two major oil-price shocks. It is hard to believe that these are typical financial-market expectations. While inflation may have been promoted from an underrated menace in the 1970s to an overrated problem in the 1980s, typical public comment points to a belief that the reduction in inflation from earlier levels has been one of the achievements of recent years. Longer-term economic forecasts tend to envisage inflation in the 5 to 6 percent region. Of course, the size of government deficits might result in an excessive stimulus to demand, causing people to expect rising inflation. But that would hitch the expectational argument to the crowding-out analysis, leaving the policy conclusion unaltered, and would also imply the view that monetary policy is or will be lax.

Can one believe that monetary policy is loose or will be loosened in the United States and Europe? Again, taking the United States as the most extreme case, a projection of 9 to 9.5 percent inflation plus 4 percent real growth (excluding crowding out as the explanation of high interest rates) implies a projection of 13.5 percent growth in the broad monetary aggregates, whose velocity is not subject to a steep upward trend. Yet the current target of 6 to 9 percent for M2 is being achieved, as is the target for M3, although M1 is above target. Furthermore, monetary growth is as high as it is now because demand for credit by the public sector is high, spurred by the budget deficit. Without this deficit, total monetary growth could be lower even with lower interest rates and faster growth of private-sector credit linked to faster growth of business investment, housing, and demand for consumer durables.

While the argument here has been based on U.S. statistics, a similar relationship exists in Europe and Japan among real bond yields in the past, the implied inflationary expectations embodied in present bond yields, past inflation averages, and the targets for, and performance of, monetary growth (see Table 2).

Another suggested cause of present high real interest rates, tangential to these macro theories, involves the recent worldwide wave of financial innovation. An increase in the range and sophistication of financial instruments available to savers has lessened the access of banks to free or low-interest deposits, putting upward pressure on lending rates. It is hard to believe that this accounts for real interest rates so far above historical norms, though it may have had a minor influence. Free or low-interest deposits continue to finance

a portion of the total volume of gross indebtedness of industrial economies (including bonds, mortgages, government debt, etc., as well as bank loans). This portion has fallen, but not to zero, and the change has been smallest in the continental European economies and Japan, where dependence on bank financing is greatest. Moreover, financial innovation has generated increased efficiency and competition and novel lines of business in banking, so that smaller gross margins yield adequate net profits and higher interest rates on deposits do not spill over fully into lending rates.

A variant of the argument is that, because of deregulation, interest rates must now do the work once done by constraints on the supply of credit. But formerly those constraints would presumably have driven corporations to the bond and equity markets and individuals to greater reliance on unconstrained home-mortgage finance. The structure of rates would have been affected, especially the yield curve, without an effect on the general level of interest rates. Yet the yield curve was not significantly steeper than now.

Another suggested reason for high real interest rates in the United States, and to a lesser extent in other countries, is that interest received is taxable and interest paid is tax deductible. On this view, after-tax interest rates are the chief issue, and these are clearly lower than pretax rates in nominal and real terms. However, this tax effect is not new and does not explain the increase in real interest rates. Even on an after-tax basis, the rise in real interest rates has been significant. Moreover, it is important to remember that only the corporate sector is taxed at up to 50 percent marginal rates. Rich individuals have usually been able to avoid high marginal rates (which have been lowered in any case over the past few years in the United States and Britain); home-mortgage borrowers typically face lower marginal tax rates; the government as borrower and many institutional investors, especially pension funds, are essentially unaffected by taxes.

The Inadequacy of Productive Capacity

While 100 percent utilization of capacity is generally recognized as being impossible, it could be argued that present rates of utilization—80 percent and more in the United States and Germany—do not represent the “ceiling” at which rapid growth in investment becomes vital to increase industrial production. It would follow that growth could proceed for a while without a higher share of net business fixed investment in GDP, in which case it would be possible to finance government deficits from private savings at reasonably low real interest rates.

The crowding-out hypothesis, however, is that the present productive capacity of Western economies is inadequate. Business fixed investment in equipment, though not in buildings, began to grow at the very start of the recovery (not with a lag, as is usual) and as fast or faster than consumption and

TABLE 3
 INVESTMENT PERFORMANCE IN RECOVERIES: REAL GROWTH IN FIRST RECOVERY YEAR
 (in percent)

	<i>GDP</i>	<i>Equipment Investment</i>	<i>Difference</i>
U.S.:			
1971	3.1	-0.6	-3.7
1976	4.9	5.4	0.5
1981	3.0	3.4	0.4
1983	3.3	4.9	1.6
Japan: ^a			
1972	8.8	6.7	-2.1
1975	2.4	-5.5	-7.9
Germany:			
1968	5.9	7.0	1.1
1976	5.5	6.5	1.0
1983	1.3	6.1	4.8
France:			
1976	5.2	9.4	4.2
1982	2.0	-0.4	-2.4
Britain:			
1972	2.5	-0.2	-2.7
1976	3.7	1.9	-1.8
1982	2.3	7.5	5.2

^a Japan had no recession in the early 1980s.

SOURCE: NIA and national sources.

final sales generally, except in France (see Table 3). This strong response to the decline in interest rates in late-1982 (earlier in Britain) indicates the need and potential for larger investment should interest rates be brought down to more normal real levels. Businessmen see the need for rapid increases in capacity even though measured utilization rates are not high. By implication, a reduction in real interest rates would lead to even more vigorous growth of investment. Yet interest rates remain very high. The result will probably be frustration of investment potential. We can therefore expect a more than usually serious mismatch between actual productive capacity and what is needed to satisfy demand and provide high employment in the industrial economies, together with a less than full adjustment of existing capacity to the changes in costs and prices of the last ten to fifteen years.

3 Causes of Inadequate Capacity

Downward Trend of Net Investment

Tables 4 through 6 analyze investment by function for the five major economies of the industrial world. The last twenty-one years are divided into three periods: 1964-73, the ten years of rapid growth leading up to the first oil shock; 1974-79, the six years forming the first full cycle after that shock; and 1980-84, the five years since the second oil shock. While a longer run of pre-1974 figures might add a little, they are not available for Japan and France and are more tentative for Germany and Britain. Although 1964-73 was a relatively strong period for the United States, growth and investment were stronger earlier in the other countries. Using the ten years to 1973 seems to furnish a fair representation of conditions before the oil crisis.

These tables, based mainly on OECD sources, exclude from the definition of government the business and quasi-business activities of government at all levels. Not only nationalized industries but also some quasi-business activities more deeply embedded in the public sector have been included in the business sector rather than the government sector, to the extent that they can be identified. The phrase "private sector," as used here, includes such activities. The advantage of these OECD definitions is that the distinction between business and infrastructural investment is made rather more precise, although the major divergences of net government investment rates suggest that the comparisons are not exactly "apples with apples." For U.S. readers, the disaggregation of the government-sector accounts into a series for gross saving (current income less current expenditures and net transfers), depreciation, and gross capital formation is a significant departure from normal U.S. practice (which does this only for the private sector). It is an improvement that complies with standard international definitions.

The downward trend of total investment in the last dozen years partly reflects smaller inventory accumulation but also some fall in gross fixed investment as a percentage of GDP (Tables 4 and 5). Further, reflecting a large rise in depreciation/replacement investment, there was a bigger drop in net fixed investment—broadly, the addition to the capital stock (Tables 4 and 6). In this Essay, which is concerned with the capital required to permit renewed rapid economic growth and with the transformation of the capital stock needed to reflect changed cost/price relationships and other factors, much of the focus will be on net-investment ratios.

Two possible reasons for an upswing in the ratio of depreciation to GDP might be the effect of a slowing of real GDP growth (given the depreciation of assets installed in earlier periods) and an increase in depreciation rates to reflect more rapid obsolescence. Taking the average life of assets to be in the

TABLE 4
GROSS INVESTMENT AS A PERCENTAGE OF GDP

	Annual Averages			Annual					Long-Term Needs ^a
	1964 -73	1974 -79	1980 -84	1980	1981	1982	1983	1984	
Total:									
U.S.	19.3	19.2	17.3	18.2	19.0	16.0	16.7	20.0	22.5
Japan	35.9	32.9	30.4	32.7	31.6	30.5	28.7	28.5	31.5
Germany	26.3	21.8	21.7	24.1	21.6	20.3	21.1	21.4	27.0
France	25.6	23.8	21.2	23.6	21.2	21.8	19.9	19.4	27.0
Britain	20.2	20.0	16.4	16.8	15.2	16.0	16.4	17.0	22.0
Inventories:									
U.S.	1.0	0.8	-0.2	-0.3	1.2	-1.5	-0.1	1.9	1.0
Japan	2.6	0.9	0.5	0.7	0.6	0.6	0.2	0.5	1.0
Germany	1.5	0.9	0.4	1.3	-0.3	-0.3	0.3	0.9	1.0
France	2.1	1.1	0.6	1.7	-0.2	0.9	0.0	0.4	1.5
Britain	1.1	0.7	-0.6	-1.3	-1.2	-0.5	0.1	-0.3	0.5
Fixed:									
U.S.	18.3	18.4	17.5	18.5	17.8	16.5	16.8	18.1	21.5
Japan	33.3	32.0	29.9	32.0	31.0	29.9	28.5	28.0	30.5
Germany	24.8	20.9	21.3	22.8	21.9	20.6	20.8	20.5	26.0
France	23.5	22.7	20.6	21.9	21.4	20.9	19.9	19.0	25.5
Britain	19.1	19.3	17.0	18.1	16.4	16.5	16.3	17.3	21.5
Depreciation:									
U.S.	10.2	12.2	13.3	13.3	13.2	13.7	13.5	13.0	13.0
Japan	13.5	13.1	14.1	13.4	13.8	14.2	14.6	14.5	14.5
Germany	10.0	11.1	12.3	11.7	12.2	12.5	12.6	12.6	12.5
France	9.7	11.1	11.9	11.5	11.8	12.1	12.1	12.0	12.0
Britain	9.0	11.4	12.3	12.4	12.6	12.4	12.1	11.8	11.5

^a See text below for explanation.

SOURCE: NIA and national sources. All depreciation figures but U.S. estimated for 1984. Reconciliation of OECD and national sources estimated.

region of seven to ten years (more for buildings, less for machinery and equipment), a 2 percent cut in the growth rate of GDP would raise a depreciation ratio that started at 10 percent of GDP by about 2 percent of GDP over the period from 1973 to the early 1980s. The increase would probably be higher if a large stock of buildings were to raise the average life of all assets, as may be true in the United States and Britain. A high weight of older assets—machinery and equipment as well as buildings—may also characterize those two countries, because of their slower growth and lower investment rates before

TABLE 5
GROSS FIXED INVESTMENT AS A PERCENTAGE OF GDP, BY SECTOR

	<i>Annual Averages</i>			<i>Annual</i>					<i>Long-Term Needs^a</i>
	<i>1964</i>	<i>1974</i>	<i>1980</i>	<i>1980</i>	<i>1981</i>	<i>1982</i>	<i>1983</i>	<i>1984</i>	
	<i>-73</i>	<i>-79</i>	<i>-84</i>						
Business:									
U.S.	11.2	11.9	12.3	12.7	12.8	12.1	11.5	12.5	14.5
Japan	22.0	19.2	18.2	18.9	18.6	18.0	17.5	17.8	18.0
Germany	13.2	11.2	11.8	12.3	12.0	11.5	11.8	11.6	15.5
France	13.2	13.0	12.2	13.0	12.7	11.9	11.3	11.0	15.7
Britain	11.8	12.7	12.3	13.1	12.1	12.3	11.8	12.4	16.0
Housing:									
U.S.	4.4	4.5	3.6	3.9	3.5	2.9	3.9	4.1	4.5
Japan	6.4	7.1	6.0	6.9	6.3	6.0	5.5	5.1	7.5
Germany	7.3	6.1	6.4	6.8	6.5	6.2	6.3	6.4	7.0
France	6.9	6.9	6.0	6.3	6.1	6.3	5.9	5.3	6.2
Britain	4.2	4.2	3.5	3.6	3.2	3.4	3.5	3.8	3.5
Government infrastructure:									
U.S.	2.7	2.0	1.5	1.8	1.6	1.5	1.4	1.5	2.5
Japan	4.8	5.7	5.8	6.2	6.2	5.9	5.5	5.1	5.0
Germany	4.3	3.6	3.1	3.8	3.4	3.0	2.6	2.5	3.5
France	3.4	2.8	2.6	2.5	2.5	3.1	2.9	2.8	3.7
Britain	3.1	2.4	1.1	1.3	1.1	0.9	1.0	1.2	2.0

^a See text below for explanation.

SOURCE: NIA and national sources. Reconciliation of OECD and national sources estimated.

1974. Hence, for the United States and major European countries, the growth slowdown since 1974 appears to account for the bulk of the increase in depreciation ratios. This reinforces the case for focusing on net-investment rates. In Japan, the relative stability in the ratio of depreciation to GDP is counter to expectations, given the much greater slowdown of real GDP growth (by 6 percentage points, from nearly 10 percent in 1964-73 to about 4 percent since then).

The declines in net-investment ratios have been significant in business, housing, and government infrastructure (Table 6). By 1980-84, net business investment in the United States had fallen to 2.6 percent of GDP, one-third less than in 1964-73, though the net-investment ratio in 1984 (a boom year) picked up to 3.1 percent. In the European countries, net business fixed investment has declined more than in the United States, but it remains at about the same level because of the higher investment rates before 1974. In Japan,

TABLE 6
NET FIXED INVESTMENT AS A PERCENTAGE OF GDP, BY SECTOR

	Annual Averages			Annual					Long-Term Needs ^a
	1964 -73	1974 -79	1980 -84	1980	1981	1982	1983	1984	
Total:									
U.S.	8.1	6.2	4.2	5.2	4.6	2.8	3.4	5.1	8.5
Japan	19.6	18.9	15.8	18.6	17.2	15.7	13.9	13.5	16.0
Germany	14.8	9.8	9.0	11.1	9.7	8.1	8.2	7.9	13.5
France	13.8	11.6	9.0	10.4	9.6	8.8	7.8	7.0	13.5
Britain	10.1	7.9	4.7	5.7	3.8	4.1	4.2	5.5	10.0
Business:									
U.S.	4.1	3.3	2.6	3.2	3.2	2.1	1.6	3.1	5.0
Japan	11.0	9.4	7.9	9.2	8.5	7.7	6.9	7.3	7.5
Germany	6.0	2.9	2.9	3.8	3.2	2.4	2.7	2.5	6.5
France	6.3	5.0	3.3	4.9	4.2	2.9	2.4	2.2	7.0
Britain	4.7	3.6	2.6	3.2	2.1	2.5	2.2	3.0	7.0
Housing:									
U.S.	2.6	2.4	1.5	1.7	1.4	0.7	1.8	2.0	2.5
Japan	4.3	4.3	2.7	3.7	3.2	2.8	2.2	1.8	4.0
Germany	5.5	3.8	3.7	4.2	3.8	3.5	3.5	3.6	4.0
France	4.9	4.8	3.8	4.0	3.9	4.1	3.7	3.1	4.0
Britain	3.1	2.7	1.8	2.0	1.4	1.7	1.8	2.2	2.0
Government infrastructure:									
U.S.	1.5	0.6	0.1	0.2	0.1	0.0	-0.1	0.1	1.0
Japan	4.3	5.2	5.1	5.6	5.6	5.2	4.8	4.4	4.5
Germany	3.3	3.1	2.4	3.2	2.7	2.3	1.9	1.8	3.0
France	2.6	1.8	1.6	1.4	1.3	1.9	1.7	1.6	2.5
Britain	2.3	1.6	0.2	0.4	0.2	0.0	0.2	0.4	1.0

^a See text below for explanation.

SOURCE: NIA and national sources. Housing and business depreciation breakdowns for Japan and France estimated. Reconciliation of OECD and national sources estimated.

net business investment has remained closer to earlier levels and well above even the pre-1974 rate in the West. With the sharp slowdown in growth in Japan after 1974, investment has been increasingly devoted to transforming existing capacity. The worldwide need for such a transformation is outlined below; it is therefore no surprise that crowding out is less of a problem in Japan than in the United States and Europe. In fact, Japan's economic development in the last decade can be regarded in this respect as a model for what is needed elsewhere.

The falling rate of net business fixed investment in the United States and Europe since 1974 is paralleled in housing and infrastructure. Again, the Japanese experienced a smaller decline—for infrastructure, an increase. In relation to crowding out and the investment requirements of renewed rapid growth, housing and infrastructure are of less central concern than business investment. However, the decline in real interest rates needed to ensure full exploitation of business-investment opportunities would presumably also stimulate housing, so that a reversal of crowding out would require that room be created for an upswing in housing as well as net business investment.

Influences on the Need for Investment

Demand effects: demographics and housing. Demographic changes creating extra demand for housing, autos, and household goods are more important in the United States than in Japan and much more so than in Europe (Table 7). Population growth is faster in the United States, and immigration remains a major factor. While Japan's population growth is faster than Europe's, it slowed in the mid-1970s.

In the United States, net housing investment in 1980-84 was little over half the level of the previous two decades (see Table 6). Housing has been strongly affected by high real interest rates. Its revival since end-1982 has not yet brought it back to the levels of the 1970s. While population growth is expected to slow in the mid-1980s, both pent-up housing demand and household formation among the "baby boom" generation can be expected to cause a strong upward response to any downward shift in real interest rates. (The strong upswing in housing in 1983-84 was in the face of interest rates on mortgages that remain about 8 to 9 percentage points above the current rate of inflation.)

In Japan, where investment in housing remained steady until 1979 and the population is growing, a return to near the earlier net housing investment ratio to GDP can be expected with a further reduction of real interest rates. Although the shift to the towns from the land is abating, overcrowding is a serious problem.

In continental Europe, the decline in net housing investment is probably less likely to be fully reversed should real interest rates decline. In Germany and France, net housing investment was very high before 1974, at about 5 percent of GDP, reflecting reconstruction after World War II, rapid growth of real incomes, and, in France especially, a major population shift from the country to the towns. Moreover, net housing investment in Germany and France has fallen proportionately less than in the United States and remains above the pre-1974 U.S. level in relation to GDP, despite slower growth of population and the number of households.

In Britain, static population since the mid-1970s, the substantial housing

TABLE 7
DEMOGRAPHIC TRENDS: ANNUAL AVERAGE PERCENTAGE GROWTH

	1964-73	1974-79	1980-84 ^a	1985-90 ^b
Population:				
U.S.	1.1	1.0	1.0	n.a.
Japan	1.2	1.0	0.7	n.a.
Germany	0.8	-0.2	-0.1	n.a.
France	0.9	0.4	0.5	n.a.
Britain	0.4	0.0	0.2	n.a.
Aged 15-64:				
U.S.	1.7	1.7	1.2	n.a.
Japan	1.4	0.8	0.9	n.a.
Germany	0.5	0.3	1.3	n.a.
France	1.0	0.7	1.3	n.a.
Britain	0.1	0.4	0.6	n.a.
Labor force:				
U.S.	2.1	2.6	1.6	1.5
Japan	1.1	0.8	1.1	1.0
Germany	0.2	-0.2	0.4	0.5
France	0.8	0.8	0.1	0.5
Britain	0.3	0.6	0.3	0.3
Employment (civilian):				
U.S.	2.1	2.5	1.2	1.9
Japan	1.2	0.7	1.0	1.1
Germany	0.3	-0.6	-0.7	1.1
France	0.7	0.2	-0.6	1.3
Britain	0.2	0.2	-1.1	1.7
<i>% of Labor Force</i>				
	1973	1979	1984	
Unemployment rate:^c				
U.S.	4.8	5.8	7.4	
Japan	1.3	2.1	2.7	
Germany	0.8	3.2	8.6	
France	2.6	6.0	9.7	
Britain	3.3	5.6	13.2	

^a 1980-83 for aged 15-64.

^b Forecast for the labor force. For employment, the rate is that needed for a 5% unemployment rate by 1990 in the U.S. and Europe, a 2% rate in Japan.

^c Standardized to remove as far as possible disparities of definition (OECD).

SOURCE: OECD historical statistics and national sources.

stock inherited from earlier eras, and net housing investment ratios above those in the United States have meant that a downturn in housing is also less likely to be reversed immediately than in the United States.

Supply effects: employment needs and high technology. The investment needs to be dealt with as supply-related are partly demographic and partly the effects of rapid technological change. The supply-side aspect of demography is the need for extra jobs to accommodate growth of the labor force plus a return to high levels of employment. (For the United States and Europe, the latter is taken to mean an unemployment rate of 5 percent of the labor force by 1990; for Japan, where unemployment is presently 2.7 percent of the labor force and not far above earlier norms, a 2 percent target is used.) As can be seen in Table 7, the employment growth needed for the remainder of the 1980s to achieve such unemployment rates by 1990 is near to the 1964-73 and 1974-79 growth rates in the United States, and well above the growth rate of the early 1980s. In Germany, France, and especially Britain, a return to 5 percent unemployment by 1990 would require employment growth much faster than has been sustained at any time over the past twenty years.

In the United States and much of Europe, the working-age group has increased as a share of the population, and the rate of labor-force participation has grown strongly among working-age women owing to greater numbers of single households and increased work-force participation by married women (Table 8). However, in Japan, increased labor-force participation by urban women must be set against the declining overall importance of agriculture, where women form an even greater proportion of the labor force. Immigration has significantly boosted growth of the U.S. labor force in all past periods, as it presumably will in the future. In Japan and Europe, immigration is unlikely to be a factor.

In the United States, employment growth has consistently been rapid except for isolated periods in the worst parts of recessions, and, viewed over the span of cycles, unemployment has shifted upward only gradually. Though employment growth slowed in 1980-83, so did labor-force growth, if by less. Optimists about the U.S. economy might argue that another year or two of rapid growth could raise employment by enough, given slower labor-force growth, to bring unemployment back to its 1979 rate of 5.8 percent. This would not itself match pre-1974 economic performance; the virtual halt of productivity growth has been the main symptom of deteriorating U.S. economic performance over the past ten to fifteen years. The argument here, moreover, will be that this productivity slowdown is linked to inadequate investment, which will itself preclude another year or two of rapid growth and prevent a full recovery of employment growth as well as productivity.

In Europe, the actual decline in employment since 1974 contrasts strongly with considerable growth in the United States, as does Europe's relatively

TABLE 8
LABOR-FORCE PARTICIPATION
(in percent)

	1960	1973	1979	1983
Male:				
U.S.	90.5	85.4	85.1	84.1
Japan	92.2	90.0	89.2	89.1
Germany	94.4	89.1	84.5	80.2
France	95.5	86.3	83.5	78.3
Britain	99.1	93.0	90.5	87.9
Female:				
U.S.	42.6	51.1	58.9	61.8
Japan	60.1	54.1	54.7	57.2
Germany	49.2	49.6	49.6	49.6
France	45.4	48.7	52.2	52.7
Britain	46.1	53.1	57.9	57.8

SOURCE: OECD historical statistics and national sources.

well-maintained productivity growth. Even sharper increases in the wage share of GDP and in real wages (especially after 1974) partly account for these divergences, which also reflect rigidities induced by employment-maintenance laws and customs (see Table 9). The expansiveness left in the economy was mostly reflected in employment creation in the United States and in labor-saving productivity increases in Europe.

While price and cost forces may account for much of the growth of productivity, the potential for labor saving created by the upsurge of high technology can reasonably be regarded as a supply-side phenomenon, to some extent independent of wage levels. Computerized robots and micro-processes are already widely used and could virtually eliminate direct labor in manufacturing, and much of it in service industries too, in the foreseeable future. The investment implications of these changes are massive and related to the equally important social effects. The successful transformation of a forty-year-old steelworker or coal miner into a bank employee or computer repairman will involve substantial retraining (perhaps including income support during retraining) and investment in machinery for the new job. All this is additional to the labor-saving investment that will eliminate the old jobs.

Another effect of high technology is a sharp change in the pattern of demand. The long expansion of the 1950s and 1960s consisted to a considerable degree of "more of the same." Car production may have grown faster than food production, but with the exception of computers and perhaps aircraft the range of products bought and sold in 1973 was not very different from that of

TABLE 9

EMPLOYMENT COMPENSATION^a AS A PERCENTAGE OF NET DOMESTIC FACTOR INCOMES^b AND GROWTH OF REAL^c COMPENSATION PER EMPLOYEE

	U.S.	Japan	Germany	France	Britain
Employment compensation:					
1963	70.9	53.0	64.4	61.5	73.8
1973	74.8	59.1	70.8	64.5	74.9
1979	75.8	67.1	71.5	71.5	78.4
1984	74.5	70.8	70.6	72.3	76.2
Growth of real compensation: ^d					
1964-73	3.0	9.6	6.1	5.7	3.3
1974-79	0.3	3.3	3.1	4.4	1.4
1980-84	0.7	2.2	0.4	1.7	1.1

^a Includes "fringes."^b Employee compensation plus domestically generated net surplus (business net retentions, dividends, interest, rents, etc.).^c Deflated by the consumer-spending deflator.^d % per annum.

SOURCE: NIA, OECD historical statistics, and national sources.

1953 or 1963. Now, however, the vast increase in computers, which have reached the home as well as the office, the upsurge in electronic products based on micro-technology, and the altered nature of purchases of industrial machinery are shifting the pattern of demand radically, most obviously in the intermediate and investment-goods areas but also in consumer goods and services. This relates directly to the inadequacy of present capacity, not only in the implied need to invest in new industries and to write down the capacity in shrinking traditional industries (e.g., iron and steel) but also in the need to transform by new investment the productive processes of industries with still salable products but outmoded methods (e.g., automobiles).

Price/cost effects: wages and oil. So far, investment needs have been explained by reference to quantitative demand and supply effects: demographic changes, the availability of labor needing employment, and the effects of high technology. But substitution of capital for high-cost factors of production, most obviously labor and oil, remains a potent force behind current business-investment potential. In the case of increased labor costs (Table 9), the distinction is hazy between such investment needs and those springing from innovations in technology—both the incentive to apply advanced labor-saving techniques and the actual development of such techniques have to be linked to the large increase in wage costs over the past thirty years. Moreover, labor-

saving investment will operate in the opposite direction from investment to create jobs. It is the need to reduce payrolls by means of capital deepening combined with the potential for high-technology investment and the required increase in total employment that makes investment requirements so formidable.

An alternative line of reasoning would call for a drop in real wages rather than for investment to substitute for high-cost labor and then for retraining and reemployment. This alternative will be examined in more detail below. Here, it will be assumed that real wages will decline little and that business plans will have to be based on the current wage level. This assumption does not imply that the share of wages in GDP will be constant. That ratio should decline over time if increased investment yields increases in GNP and profits, thereby unwinding the unbalanced share of labor income. The redeployment of labor by substitution, the growth of the labor force, and the high current level of unemployment will maintain pressure for real-wage moderation in the face of such profit increases, provided monetary targets are kept disinflationary. If the desired goal of lower unemployment is achieved, the ratio of wages to GDP could cease to decline; wage increases might grow to match productivity growth, stabilizing the wage share of GDP at a lower level several years into the future.

The other major stimulant to cost-cutting investment is the much higher price of oil, and of energy in general, resulting from the two oil-price shocks. Although down 9 percent from the peak of 1981-82, real oil prices remain 78 percent above their 1975-78 level (i.e., after the first oil shock), 382 percent above their 1973 level, and 533 percent above their nadir in 1970. The sharp increase in the real value of the U.S. dollar over the last few years means that real oil prices have been sustained outside the United States, especially in Europe, at a time when they have been falling in nominal and real dollar terms. For example, oil prices in real U.S. dollars fell over 25 percent between 1980 and 1984, whereas in Europe real oil prices rose 20 percent.

The rise in oil prices has forced a large jump in investment in oil and nonoil sources of energy and in conservation. Given that total net-investment rates have fallen, this increased investment in energy supplies and conservation has cut even further into the sums available for expanding employment and productivity. Moreover, only OPEC pricing policy and Middle Eastern political instability maintain current oil prices; the vast reserves of oil in Saudi Arabia and elsewhere in the Gulf typically cost only 25 to 50 cents a barrel to produce. Hence, investment in oil conservation, substitution, and new oil wells is in a sense a form of enforced waste, especially with excess capacity in the Gulf and other OPEC states of over 10 million barrels per day. It should be regarded as a direct charge against resources available for consumption in the rest of the world. Alternatively, the chronic political instability of the

Middle East might suggest that a long-term need exists for development of new energy sources, even at high cost. If so, it follows that a cut in personal or government consumption, and thus an increase in saving, is necessary to finance it. Only the East Asian countries, most notably Japan, appear to have accepted this logic. Vulnerability to energy-supply cutoffs has been a significant factor in Japan's determination to keep energy-saving investment high and minimize dependence on Middle Eastern oil.

With no evidence available to suggest that real oil prices are likely to fall back to the level that prevailed in the 1950s and 1960s, heavy investment in energy supplies and conservation seems inevitable for the foreseeable future. The net business investment required is additional to that required to promote growth in employment and productivity, since the extra energy production will produce a negligible addition to real spendable income. It is analogous to reconstruction after a destructive event like a war or an earthquake. In this case, the destruction is represented by an abrupt impairment of industrial capacity. As with labor-saving investments, it may be that a fall in real oil prices will result from oil-substitution investments, but, if anything, this strengthens the case for such investments.

So does another consideration. The recent weakening of oil prices is at least partly an indication of the slow growth of the world economy since 1979, even compared with the 1974-79 period. Significant increases in energy consumption could accompany a return to sustained economic growth. In 1976-79, four years of economic expansion that involved real GDP growth averaging 3.5 percent in the industrial countries, oil consumption grew by 2.8 percent annually. This growth in oil demand may have resulted partly from an artificially low price in the United States (and Canada and elsewhere) because of controls; but substantial further improvements in energy supply and conservation are essential to ensure that oil prices do not become a roadblock in the event of an otherwise durable economic recovery.

Quality of investment. The focus so far on the quantity of investment is not intended to detract from the importance of improving the quality of investment and of the allocation of resources generally. But it is pessimism about the changes in the allocation of resources that forces emphasis back onto the need for more investment. On the optimistic side, and especially in the United States, Britain, and to some extent Japan, the revolution in financial services is probably improving the allocation of scarce capital. Also, replacement investment that is the counterpart of depreciation can be presumed to embody some of the features catalogued above as being sources of need for investment, especially that needed to substitute for high-cost labor and oil.

On the pessimistic side, other changes are worsening the quality of investment—most obviously, the rising tendency toward protectionism around the world. While tariffs are lower than in the 1960s, import quotas are now pro-

liferating. Other things that need doing are not getting done—for example, sharp reductions in agricultural trade barriers. The reference period used in this Essay to assess present policies and trends, the 1960s and early 1970s, was one in which considerable progress was being made in improving the allocation of resources. The average level of tariffs and quotas underwent drastic reduction both within Europe and between the major trading blocs. In Japan and Europe, the allocation of resources and growth of productivity were strongly helped by the effort to follow or catch up with U.S. technology—easier and cheaper than breaking new paths—and by a massive shift of labor from low-yield agricultural work to the cities. The absence of these factors now is the main reason for assuming that productivity growth in Japan and continental Europe will not return to earlier rates, even with a return to the levels of net investment suggested here as desirable.

Britain is the only country where improved allocation of resources seems likely to make an identifiable contribution to productivity growth by comparison with the 1960s and early 1970s. Performance was so laggardly in the earlier period that substantial catch-up potential remains. Given a high net-investment ratio in relation to growth performance prior to the first oil shock, the British capital/output ratio is well above that of other industrial countries: in 1981, the ratio of gross capital to value-added in manufacturing in Britain was 455 percent, vs. about 210 percent in 1980 in Germany, France, and Japan and 180 percent in the United States in 1981. (Even a liberal allowance for the effect of the recession on British manufacturing output would leave the 1981 ratio above 400 percent.) Although much of this capital may prove to be inappropriate and need replacement, the potential for expansion based on better use of what is already in place may be greater in Britain than in most industrial countries. Certainly, the growth of manufacturing productivity has improved sharply in the past two or three years, despite the declining investment trend. Perhaps the very high unemployment rate simply represents the elimination of former widespread underemployment on the job.

One major influence on the allocation of resources over the last fifteen to twenty years has been much increased regulation and control of business. Taken by themselves, many regulations and controls—producing cleaner air and water and a healthier and safer working environment in the United States, and benefits to labor in Europe such as less arbitrary sackings—are just as desirable as the higher wages and expanded social programs that have produced much higher wage-income and government-spending shares of national income. Equally, these regulations and controls involve substantial costs. They necessitate business investment for purposes that do not show a financial return to the owners of businesses, as well as the costs of administering the rules in question and probably some lost vigor in the business sector. These costs ought to have been borne by a reduction in consumption and an increase in the resources devoted to business investment if other aspects

of economic development, particularly the growth of employment and productivity, were not to be hindered.

In the United States, some of the more indiscriminate regulatory trends have been reversed over the past five years. Nevertheless, the scale of business regulation is well above the level of twenty years ago, entailing higher investment and running costs per unit of output. In Europe, where government regulation and control are more concerned with preserving jobs and furthering the rights of employees, the failures of employment creation and the rise in unemployment have not helped to create an atmosphere favorable to removing the excessive rigidities of regulation. Job security has played a role in promoting wage increases that have stunted employment growth, with unemployment therefore concentrated on youth. The severe restrictions on laying off labor contribute to the reluctance of management to risk creating new jobs. There is a generalized if vague impression that high-technology and service-industry developments are passing Europe by. Increasing consciousness of these factors behind the loss of economic vigor is leading to some weakening of earlier certainties about the virtues of regulating the labor market and the relationship between labor and management. However, government schemes to promote employment may be creating distortions as fast as the removal of business regulations is lessening them.

Government investment. The increased government deficits in the industrial economies are not even partly explained by increases in government-sector investment in roads, schools, and social services. On the contrary, the swing into large budget deficits is more than fully accounted for by reductions in public-sector saving on current account—weakness of revenues, rapid growth of current spending, or both. The exception is Japan, where infrastructure investment has risen from a level in 1964-73 that was already higher than in the West (Tables 5 and 6). In the United States and Britain, government net infrastructural investment is now negligible, and the reduction may well have reached the point where it damages growth prospects. In Germany the reduction has been significant but not so drastic. While the decline in the birth rate has no doubt reduced some demands on infrastructure and social services, the increased proportion of older people in the population has partly offset this. The fall in investments more directly affecting the productive capacity of the economy, in roads for example, may well have to be reversed to support a sustained economic expansion, which, if achieved, is then likely to be accompanied or followed by popular demand for a restoration of the public infrastructure.

Long-Term Investment Needs

To assess the implications of all these factors influencing the need for investment above actual current levels, it is necessary to hazard some “guesstimates” of long-term requirements. These guesstimates have been formu-

lated on the assumption that unemployment should be reduced to 5 percent of the labor force in the United States and the three major European economies by 1990; moreover, the growth rate of productivity should have been restored to its 1964-73 rate of 2 percent a year in the United States, to 3 percent a year in Germany and France, and to slightly more in Britain because of that country's catch-up potential vis-à-vis other economies. For Japan, it is assumed that future employment growth should slightly exceed labor-force growth and that productivity growth, having fallen from 8.3 percent a year in 1964-73 to around 3 percent since, ought under more auspicious world economic conditions to rebound significantly, though not back to its pre-1974 rate (Table 10).

The United States must necessarily continue to develop new jobs faster

TABLE 10
GROWTH IN GDP, EMPLOYMENT, AND PRODUCTIVITY
(annual average percent)

	1964 -73	1974 -79	1980 -84	1985-90 target
U.S.:				
GDP	4.1	2.7	2.2	4
Employment	2.3	2.5	1.2	2
Productivity ^a	1.8	0.2	1.0	2
Japan:				
GDP	9.6	3.7	4.3	6
Employment	1.2	0.7	1.0	1
Productivity	8.3	2.9	3.3	5
Germany:				
GDP	4.5	2.4	0.9	4
Employment	0.3	-0.6	-0.7	1
Productivity	4.2	3.0	1.6	3
France:				
GDP	5.5	3.1	1.1	4¼
Employment	0.7	0.2	-0.6	1¼
Productivity	4.8	2.9	1.7	3
Britain:				
GDP	3.2	1.3	0.9	5
Employment	0.2	0.2	-1.1	1¾
Productivity	3.0	1.1	2.0	3¼

^a GDP per employee.

SOURCE: OECD historical statistics and national sources.

than Europe, but it can hardly accept the decline in industrial competitiveness and negligible scope for long-term real income growth implicit in the productivity stagnation of the past ten years. In Japan, an improved economic environment in the rest of the world is probably the main requirement for a pickup in growth potential, especially in productivity. In Europe, employment growth and development of new industries are needed, as well as labor saving in old industries.

In the United States, the rate of employment growth required in 1985-90 could approach the 2.3 percent of 1964-73. Productivity also needs to return to 1964-73 rates of growth, and investment must facilitate full adjustment to high wages and oil prices and to new technology. Therefore, net business investment should probably be higher than the 4.1 percent of GDP in 1964-73, and a 5 percent figure is assumed (Tables 4, 5, and 6 above). A slight slowing of population growth in the adult age group could mean a return of net investment in housing to its 1964-79 rate, about 2.5 percent of GDP, rather than a rise above that level to compensate for the slippage in the early 1980s. Some reversal of the past ten years' neglect of infrastructure is assumed, but not a return to the 1964-73 rate of public-sector investment. Assuming that resumed growth should stabilize the ratio of depreciation to GDP and revive inventory building, gross investment would need to be 22 to 23 percent of GDP, an increase of 5 percentage points over the average of 1980-84 and 2½ percentage points from 1984 taken alone.

In Japan, there seems to be no need for an increase in the ratio of either business or infrastructure investment to GDP. Net investment in housing would probably return to its pre-1980 rate in a more expansive environment. A somewhat greater rate of inventory building could be offset by a mild decline in depreciation to put total gross investment at 31.5 percent of GDP, about 3 percentage points higher than in the recent past.

In Germany, productivity growth may not be expected to return to the rate of 1964-73, but the generation of new jobs needs to be much faster than before, more demanding of new capital equipment. With major strides needing to be made in high-technology and service industries, a net business investment rate above the 6 percent of 1964-73 could be required. In housing, a return toward earlier net investment rates, if not full achievement of them, is assumed, as with government investment. If depreciation remains at its present ratio to GDP, and inventory building revives, total gross investment would be 27 percent of GDP, about 5 percentage points above the present ratio.

In France, growth requirements for employment and productivity equal Germany's over the next few years, but the policy approach to the oil crisis and industrial obsolescence is more centralized, state-controlled, and apparently expensive than in the United States and Germany. Therefore, net busi-

ness-investment needs could be higher than Germany's. In housing and infrastructure, some rebound toward earlier ratios to GDP can be expected. If inventory building returns toward the buoyant rate normal in the French economy when it expands rapidly, the total gross investment requirement would be 27 percent of GDP, some 7 or 8 percentage points above recent levels.

In Britain, net investment does not need boosting to reflect the oil shocks, given plentiful energy supplies, nor should the slightly faster productivity growth projected for the next few years raise investment requirements above the rate achieved in 1964-73. But the need for growth in employment is much more formidable than for other economies, so that net business investment must be higher than in 1964-73 in order to achieve 5 percent unemployment by 1990. Some housing rebound and a revival of net government investment will also have to be accompanied by inventory building, after the recent heavy liquidation. Even with the depreciation ratio to GDP now declining a little, total gross investment needs could be 22 percent of GDP, 5 or 6 percentage points above recent experience.

This approach to investment needs is necessarily mechanistic. Some assessment must also be made of the scale of current crowding out in order to judge how much fiscal action and interest-rate reduction are needed. Before that, in turn, must come scrutiny of the savings side of the flow of funds, to be discussed in section 4. It would not be right, however, to leave the question of the need for investment without referring to the quantitative studies of the sources of economic and productivity growth, most obviously those of Denison (1974, 1977, and 1979). These tend to attribute only a portion of economic growth—generally between a fifth and a quarter—to capital input. The remainder is shared by growth of labor input and output per unit of input (the latter reflecting improved resource allocation—contracting agriculture, freer trade, etc.), economies of scale, and advances in knowledge (the residual).

If capital input accounts for only a small portion of economic growth, it could be wrong to place as much emphasis as I do on the need for more investment. But Denison (1977) adopted a different perspective from the one employed here. The elements of growth he analyzed are interrelated in complex ways. Growth in employment, for example, generally requires extra capital input, and growth in capital likewise involves increased employment (or working hours) unless it is associated with higher productivity that represents advances in knowledge. Growth that is attributed to economies of scale will require investment (which is also necessary for productivity growth) and sectoral shifts in employment. Where price-cost relationships change, moreover, investment is necessary to accommodate the resulting changes in demand and supply. A dearth of investment will not merely affect the

contribution of the capital stock to growth but will frustrate that of the other key factors.

4 Savings Behavior

The concept of savings used in Table 11 is the counterpart of the national-accounts definition of investment: gross product (income) less current consumption (personal and government). It differs from the sum of private and government gross investment only to the extent of net investment abroad (which is equal to the current account of the balance of payments) and errors and omissions.

Government Savings

Only a cursory look at the figures in Table 11 is needed to see that declining rates of savings mainly reflect falling government savings. In the United States and Britain, the decline in government savings rates more than fully accounted for the overall drop in savings between 1964-73 and 1980-84; in Japan and Germany, it accounted for the lion's share. In France, the picture is mixed. Between the 1964-73 average and 1980, less than half the fall in savings was attributable to the government, but government has accounted for almost all of it since 1980.

Disaggregation of the changes in current government spending provides a clearer view of some of the trends that have contributed to falling rates of government savings. Government spending on goods and services, including military spending but excluding income transfers like social security and other cash subsidies, has trended downward as a percentage of GDP in the United States and only slightly upward in Japan. In Europe, the upward trend has been somewhat firmer, but not by comparison with the vigorous growth of income transfers and other subsidies, which have been the primary element in growing government-spending shares throughout the industrial world.

Slower economic growth has contributed to the upsurge in the share of GDP devoted to income transfers and subsidies in two important ways. First, higher unemployment resulting from slower growth has increased unemployment-relief payments; linked to this have been large increases in payments to industry, especially in Europe and especially to nationalized industries, together with expenditures on retraining and other schemes to ameliorate unemployment. Second, the denominator of the government-spending ratio has been slow to grow. Previously laid plans and established expectations for the provision of government services have been modified slowly, if at all. Some increase in the spending ratio was clearly intended in most countries until re-

TABLE 11
GROSS SAVINGS AS A PERCENTAGE OF GDP

	Annual Averages			Annual				
	1964 -73	1974 -79	1980 -84	1980	1981	1982	1983	1984
Total:								
U.S.	19.6	19.1	17.1	18.3	19.0	15.9	15.2	17.1
Japan	35.6	32.8	31.2	31.9	31.8	30.8	30.3	31.0
Germany	26.9	22.5	21.4	22.0	20.6	20.7	21.6	22.2
France	25.4	23.0	19.6	22.2	19.7	18.6	18.6	18.9
Britain	20.0	18.4	18.4	18.2	17.6	18.8	18.3	19.0
Private:								
U.S.	16.9	17.6	18.4	17.9	18.5	18.4	18.1	19.3
Japan	29.4	29.8	28.4	29.1	29.2	28.0	27.8	28.0
Germany	22.7	22.1	21.4	21.4	21.0	21.1	21.7	22.0
France	20.7	20.5	18.6	18.9	18.3	18.1	18.7	18.8
Britain	15.7	18.7	19.7	19.5	18.9	19.4	19.8	20.7
Private, net of depreciation:								
U.S.	8.0	6.9	6.6	6.2	6.8	6.2	6.1	7.7
Japan	16.4	17.2	15.0	16.3	16.0	14.5	13.9	14.2
Germany	13.2	11.6	9.8	10.3	9.5	9.3	9.8	10.1
France	11.8	10.4	7.8	8.5	7.7	7.2	7.8	8.0
Britain	7.8	8.6	8.8	8.5	7.7	8.4	8.9	10.1
Government:								
U.S.	2.7	1.5	-1.3	0.4	0.5	-2.5	-2.9	-2.2
Japan	6.2	3.0	2.7	2.8	2.6	2.8	2.5	3.0
Germany	4.2	0.6	-0.1	0.6	-0.4	-0.4	-0.1	0.2
France	4.7	2.5	1.0	3.3	1.4	0.5	-0.1	0.1
Britain	4.3	-0.3	-1.3	-1.3	-1.2	-0.7	-1.6	-1.7
Government net lending:								
U.S.	-0.1	-0.5	-2.9	-1.4	-1.1	-4.0	-4.3	-3.6
Japan	0.8	-3.4	-3.7	-4.5	-4.0	-3.6	-3.7	-2.9
Germany	-0.1	-3.0	-3.1	-3.1	-3.9	-3.4	-2.8	-2.3
France	0.6	-0.9	-2.0	0.2	-1.8	-2.7	-3.1	-2.8
Britain	-0.7	-4.1	-3.3	-3.7	-3.0	-2.4	-3.5	-3.7

SOURCE: NIA and national sources. Reconciliation of OECD and national sources estimated.

cently: in Japan, for instance, with the shift in emphasis in the mid-1970s away from super-rapid industrial growth; in the United States, with the huge jump in social security in 1972 combined with the indexation of payments and, more recently, increased military spending; in Germany, with the broad expansion of social services in the 1970s by the Social Democrats, governing on their own for the first time since World War II.

Of course, an increase in the share of GDP devoted to government spending will raise governments' deficits only if tax revenues do not match the increase. The shortfall of tax revenues as a percentage of GDP has been mainly caused by the unwillingness of governments and electorates to pay out of current income for higher rates of government spending, so much so in the United States that large discretionary tax cuts have been a major cause of the increased deficit.

Private-Sector Savings

The assertion that government deficits are crowding out needed investment depends on two points: that private savings are not large enough to accommodate both adequate private investment and the present level of government borrowing, and that private savings cannot be expected to jump sufficiently to finance the needed investment.

On the first point, the data in Tables 11 and 12 on gross savings as a percentage of GDP show immediately why Japan has been able to sustain investment at an adequate level and is not suffering from significant crowding out: though Japan's private-sector savings ratio has declined a little, it remains very high. Private-savings rates have been maintained or increased in the United States, Germany, and Britain, though not in France, but they are still lower than Japan's. In the United States and Britain, pre-1974 ratios of private savings to GDP were little over half Japan's, while Germany and France lay in between. Since then, France has slipped back to a private-savings rate little higher than that of the United States and less than Britain's.

On the second point, the relative stability of twenty years' experience suggests that a higher ratio of private savings can be expected to make only a minor contribution to the needed increase in investment. To substantiate this view, however, the behavior of private savings must be disaggregated into personal savings and business savings (depreciation plus retained profits). Business savings include not only quasi-business activities of government but also self-employed business, though the separation of the latter from personal savings is somewhat arbitrary in the statistics.

Personal savings. The data in Table 12 for the five major industrial economies suggest that the ratio of personal savings to GDP has been declining over the last twenty years in the United States; has risen significantly in Japan

TABLE 12
PERSONAL AND BUSINESS SAVINGS AS A PERCENTAGE OF GDP
(annual averages)

	1964 -73	1974 -79	1980 -84
Gross personal savings:			
U. S.	5.1	4.9	4.3
Japan	13.2	17.7	16.3
Germany	7.5	7.8	7.0
France	10.9	12.1	10.4
Britain	5.4	7.6	8.1
Net personal savings: ^a			
U. S.	3.3	2.8	2.1
Japan	11.1	14.9	13.1
Germany	5.6	5.5	4.2
France	8.9	9.9	8.1
Britain	4.3	6.1	6.4
Gross business savings:			
U. S.	11.8	12.7	14.2
Japan	16.2	12.0	12.1
Germany	15.2	14.2	14.5
France	9.9	8.4	8.2
Britain	10.3	11.1	11.5
Net business savings:			
U. S.	4.7	4.1	4.6
Japan	5.3	2.3	1.9
Germany	7.6	6.0	5.6
France	2.9	0.4	-0.3
Britain	3.5	2.5	1.8

^a Net of housing depreciation—all other private depreciation treated as business.

SOURCE: NIA and national sources. Reconciliation of OECD and national sources estimated.

from an already high level, and then reversed itself a little; has risen sharply in Britain; and has risen slightly in Germany and France and then reverted.

The reasons why people save out of personal income and the way to forecast what they will do next seem to vary across countries and are far from well established in any country. Even the effects on personal savings of the rate of return to capital and of real interest rates are ambiguous.

Feldstein (1977) has cited the taxation of income from capital as one reason for the low savings rate in the United States. He argues that the impact on

savings behavior of the net return to capital, estimated at 12 percent in the United States, is diluted by high taxes on income from capital, so that pretax incentives to save are not given full play. At least for the personal sector, however, earnings from crucial classes of assets—holdings in retirement funds and owner-occupied homes—are largely relieved from taxation. Furthermore, taxpayers can deduct from taxable income all interest on home mortgages (curtailed in Britain in the mid-1970s) and even on consumer loans. (The use of consumer durables can be regarded as a form of tax-free flow of services from short-lived assets.) When allowance is made for tax shelters of a more exotic kind available to wealthy individuals, the taxation of returns to capital is probably quite light in the United States, even if direct stock- and bondholders pay high rates.

In any case, it cannot be assumed that higher after-tax real returns will stimulate higher personal-savings rates (and recent experience indicates the contrary). The life-cycle approach to savings suggests that low taxation of capital may have depressed the U.S. savings rate. This approach suggests that an individual or household can be expected to have some income-related goal for asset accumulation during active life. If the tax burden on the return to assets is not especially high, the achievement of such a target will not require as high a rate of savings as under a heavy tax regime. In Britain, it has been fairly conclusively demonstrated (at least statistically) that higher real interest rates diminish the savings ratio: people do seem to have "target" ratios of assets to income, so that higher real interest rates enable them to satisfy these targets more easily from existing assets, requiring less saving from current income (Forsyth, 1975). Relatively low pre-1974 personal-savings rates in the United States and Britain could be linked to well-developed private pension systems and high owner-occupation rates in housing.

Feldstein cites the effect of social security as another reason why savings in the United States have been too low (in terms of the amount of consumption achieved in the future as a result of sacrifice now). Clearly, the promise of a certain, quite considerable, level of income in old age (or in hard times, in the case of unemployment compensation) must be expected to lower personal-savings rates. The downward trend in personal-savings rates in the United States may be attributed in part to the jump in the real value of social security in the early 1970s, followed by the increased attractiveness of social-security payments as a future income source under the generous indexation arrangements adopted at a time of high and rising inflation. While inflation has abated as a threat, moderating the special attractiveness of indexed social security, high real interest rates have emerged as a support to the growth of existing financial assets. Thus the personal-savings rate in the United States cannot plausibly be expected to show any major upward trend in the future. Only with a reduction of both inflation and budget deficits—and hence nom-

inal and real interest rates—could a lasting rebound of personal-savings rates be forecast.

While these rational considerations may dominate U.S. thinking on personal-savings behavior, the insecurity of asset values and the past destruction of assets have been important influences elsewhere. The much more lavish provision of social security in Europe, especially on the Continent, than in the United States might lead one to expect lower personal-savings rates in Europe, whereas in fact they are higher. In Britain to some extent, but especially in continental Europe, the destruction of assets in two world wars and the need to rebuild physically and financially afterward (in many cases, within the relatively few years before an individual reached retirement age) have been the chief force behind high personal-savings rates. Social-security systems were set up on a relatively lavish scale in Europe precisely because many people had no chance to save enough for retirement at 1940s and 1950s income levels. For the period up to the early 1970s, this factor explains the much higher personal-savings rates in Germany and France than in the United States.

The completion of the reconstruction effort in Europe and the continued provision of a full range of social services, plus the availability of a full working lifetime for most people during which to save, might have led one to forecast a declining personal-savings rate in the 1970s and early 1980s. But if people have an income-related target for asset accumulation, a period of wage-led accelerating inflation like the late 1960s and 1970s will tend to raise the saving rate. Inflation will erode real assets in relation to such targets, and wage increases will push up the targets. This reasoning has extra force if real after-tax interest rates are low, as was true until about 1980 in most countries. Real values of existing financial assets were falling at a time when real wages were rising, especially in Europe. Savings needed to be increased sharply to build up assets toward the new targets related to higher incomes. In Europe, furthermore, the strong long-term growth of unemployment has brought to the surface deep fears about the security of the economic future. For these reasons, the decline in the savings rate that might have been expected on the Continent has not materialized.

In Britain, the savings rate was not much above that of the United States until the early 1970s, reflecting a middle way between the factors affecting the United States and those affecting the Continent. In the mid-1970s, the British rate soared in response to negative real interest rates, higher inflation, and lessened economic security. The sharp fall in the inflation rate and the rise in real interest rates since 1980, however, have led to some reversal of the upswing in the savings rate since its peak in the early 1980s.

For the future, high real interest rates and lower inflation in Europe seem likely to mean a downward trend in savings rates, even though high unemployment and some cutbacks in social security may mitigate this effect.

Much the same could be said of Japan, where the savings rate jumped like Britain's in 1973 and 1974 as inflation soared. Japan's high savings rate reflects in part the rapid growth of wages connected with fast economic growth, and a consequently greater need to accumulate assets to achieve goals related to the latest wage levels. Moreover, Japanese social-security coverage has been far less copious than in the United States, let alone Western Europe. Japanese economic development has been characterized by massive changes in, and closures of, smaller and self-employed businesses. For the future, slower growth and inflation, high real interest rates, and the buildup of government services and social security may reduce the Japanese personal-savings rate.

Business savings. Net business savings (i.e., retained profits) have fallen as a share of GDP in all the major industrial countries since the first oil crisis, especially in France and Japan. The depressing influences have been slower growth and sharply higher wage and energy costs. Recently, with high real interest rates, heavy debt loads have been a further drain on profitability, particularly in Japan and continental Europe.

In the United States, the cushion provided by domestic oil sources and the stagnation of per capita real wages have helped to moderate the net profit decline in recent years. In Japan, the very sharp drop in net profits reflects unusually high dependence on imported oil. But only in Japan could a rise in business profits be enough by itself to finance the small increase in investment likely to be associated with faster growth. In Germany, rapid productivity growth and moderation of wage settlements bringing real-income cuts in 1981-83 have had favorable effects, but a further squeezing of wage levels cannot be expected. In France, retained earnings have dived significantly as increased wages and social-security taxes have pushed costs up toward prices restrained by controls. A very sharp improvement in net profits that restored earlier profit levels could provide much of the needed supply of investment funds but would not be enough by itself. In Britain, the development of self-sufficiency in oil and a debt load in business less burdensome than on the Continent and in Japan were favorable factors, but they were offset by a particularly severe recession, especially in 1980-81, and a large rise in the real exchange rate. As in the United States, active equity markets mean that dividend payments will absorb much of any further revival of after-tax profits, which are not far from 1964-73 levels in relation to GDP. Indeed, in the United States, Germany, and Britain, retained profits were at a cyclical high point in 1984 taken alone, and might fall back a little as a percentage of GDP.

5 International Effects

So far, the analysis has dealt with closed economies, both in assessing quantities of investment and savings and in describing the intentions and effects of economic policies. In reality, international effects are important, though, I

will argue here, more in the short term than the long unless one is contemplating major changes in the structure of international economic relations, such as protectionism. The most obvious international effect arises from cross-border capital flows and corresponding current-account balances (the two being equal but opposite in sign).

For this analysis, a conceptual division between autonomous and compensatory capital flows is relevant, even though it is elusive. The state of a country's economy in relation to the rest of the world at the start of, say, a quarter will induce certain autonomous capital flows. At the same time, the current account will be more or less independently determined in the short term. Therefore, the sum of the autonomous capital flow and current-account balance is unlikely to be zero. Compensatory capital flows are those that occur to keep the overall balance of payments at zero. They may occur through a combination of movements in international reserves, changes in interest rates or exchange rates, or changes in the whole thrust of government policy.

As the autonomous flows may themselves have been caused by interest rates or exchange rates, the line between autonomous and compensatory flows is blurred. It is further obscured by the effects of changes in reserves on domestic monetary growth and of changes in interest and exchange rates on the current-account balance. Moreover, the greater the importance of the international sector, the greater the interaction between interest-rate and exchange-rate determination. Hence, a look at exchange-rate determination is necessary in an essay concerned with the interest-rate effects of government deficits.

International Capital Flows

The chief international capital flows to be considered here will be those among OPEC, other LDCs, and industrial countries (Table 13) and those among industrial countries (Table 14).

OPEC flows have veered between surpluses equal to about 2 percent of the industrial world's GDP in 1974 and 1980, immediately after each oil-price shock, and near equilibrium a few years after each shock.

The other LDCs appear to be in chronic current-account deficit, with matching capital imports. Their need for development capital and the hardship involved in saving at low income levels make this appear natural. Moreover, the development process ought to be inherently profitable enough to attract inflows of private capital naturally: such a process worked for the United States in the nineteenth century. But the countries that have recently experienced successful development, mainly in the Pacific Basin, tend to prefer to retain full control over their economies. Despite the social cost, their focus is on developing export industries and generating high domestic savings. Capital flows to LDCs have gone increasingly to countries, most ob-

TABLE 13
 GLOBAL CURRENT-ACCOUNT BALANCES
 (in billions of dollars)

	Industrial Countries	OPEC	Other LDCs	Rest of World ^a	Total
1973	10	8	- 7	- 3	8
1974	-26	60	-26	-10	- 2
1975	- 1	27	-30	-18	-22
1976	-18	37	-18	-13	-12
1977	-24	29	-13	- 9	-17
1978	12	- 1	-26	-12	-27
1979	-29	65	-39	- 8	-11
1974-79 average	-14	36	-25	-12	-15
1980	-70	111	-60	- 9	-28
1981	-28	50	-81	-10	-62
1982	-29	-15	-64	8	-100
1983	-25	-20	-37	11	-71
1984	-65	-10	-24	12	-87
1980-84 average	-43	23	-53	2	-70

^a Mostly Communist bloc.

SOURCE: MGT, national sources, and OECD semiannual *Economic Outlook*.

viously in Latin America, that need loans to finance current-account deficits resulting from their failure to generate sufficient exports. Opinions vary as to whether this chronic need for credit is caused more by unsuitable economic policies in these LDCs or by the slow growth and high interest rates in industrial countries, which weaken the exports of LDCs and burden them with expensive payments on existing debts. In either case, capital imports are likely to continue in LDCs, though possibly on a lesser scale than formerly.

The combined effect of OPEC and LDC capital-account balances appears to require capital outflows from industrial countries for the foreseeable future at a rate of at least one-half of 1 percent of industrial-country GDP. This could change if there were another oil-price shock, but one can hardly imagine a clearer case of the cure being worse than the disease.

Clearly, capital flows among industrial countries cannot relieve a general shortage of savings. Nevertheless, by funneling capital from places of least scarcity (e.g., Japan) to those of greatest scarcity (e.g., the United States), they afford some relief for the most acute aspects of disequilibrium (Table 14). This improvement in the allocation of scarce capital, a benefit of the continuing liberalization of international capital flows, may offset somewhat the ef-

TABLE 14

CURRENT-ACCOUNT BALANCES OF MAIN INDUSTRIAL COUNTRIES AS A PERCENTAGE OF GDP

	U.S.	Japan	Germany	France	Britain	EEC
1964-73 average	0.3	1.0	0.8	0.0	-0.1	0.5
1974	0.1	-1.0	2.7	-1.5	-4.0	-0.8
1975	1.2	-0.1	1.0	0.8	-1.4	0.2
1976	0.2	0.7	0.9	-1.0	-0.7	-0.3
1977	-0.8	1.6	0.8	-0.1	0.0	0.2
1978	-0.7	1.7	1.4	1.5	0.7	0.9
1979	0.0	-0.9	-0.8	0.9	-0.3	-0.3
1974-79 average	0.0	0.3	1.0	0.1	-0.9	0.0
1980	0.2	-1.0	-1.8	-0.6	1.5	-1.3
1981	0.2	0.4	-0.8	-0.8	2.7	-0.5
1982	-0.3	0.6	0.6	-2.2	1.8	-0.4
1983	-1.3	1.8	0.7	-0.9	0.8	0.1
1984	-2.8	2.8	0.9	-0.0	0.0	0.1
1980-84 average	-0.8	0.9	-0.1	-0.9	1.4	-0.4

SOURCE: MGT, national sources, and OECD semiannual *Economic Outlook*.

fect of the net drain of savings to nonindustrial countries. Beyond this, the question of international flows among industrial countries must be considered in the context of exchange-rate determination.

Exchange-Rate Determination

Can there be persistent flows of capital from one country or section of the developed world to another? If the determinants of exchange rates keep current-account balances close to zero over the span of a few years, capital flows among industrial countries can have little impact on this analysis. Over the medium term, capital flows would be approximately zero, and domestic investment needs would have to be met from domestic savings. The data in Table 14 tend to generate skepticism about the importance of capital flows in mitigating longer-term disequilibria between domestic investment and savings.

The United States has moved from a small current-account surplus in 1964-73 to balance in 1974-79 and deficit since 1980. Individual years have seen big imbalances, but these have been corrected quickly. Nonetheless, the rapid and continuous movement toward deficit since 1980 needs to be analyzed, in case it heralds a new era of capital imports by the United States. Before deal-

ing with this issue, it is helpful to look at the experience of other countries that are more open than the United States.

Japan and Germany are the most manufacturing oriented of the five major industrial economies. Both had consistent current-account surpluses in the late 1960s and early 1970s, but these were eroded by high oil costs and higher real exchange rates (and also perhaps by the trend in the worldwide pattern of demand and supply toward services and away from manufactures). But by 1983-84 both countries had reverted to surplus, a large one in the case of Japan.

In France, near-balance was the rule until the late 1970s, and the second oil shock had smaller effects than in Germany and Japan. But the current account deteriorated sharply as the policies of the Socialist administration that came to power in 1981 generated excess demand and inflation. Policy has since turned restrictive and the current account had returned to near-balance by 1984.

Britain's current account was close to balance in 1964-72 but moved into deficit in 1973-76 as a result of inflationary policies and the increase in imports required to prepare for North Sea oil production. However, large surpluses followed in 1980-83, as North Sea oil came on stream, oil prices shot up, and domestic economic policies tightened. Recent results suggest a return toward current-account equilibrium.

The experience with current accounts over the past twenty years does not by itself prove that exchange-rate behavior and government policy reactions tend to keep current accounts near balance or, for some countries, in surplus, but it strongly suggests such a conclusion. In Germany and Japan, the strength of the current account has resulted from manufacturing surpluses. Deficits are normal in services, transfers, agriculture, and fuels, notably oil. This narrowly based strength has made those two countries' governments anxious to secure current surpluses in order to accumulate foreign assets as a protection against vulnerability in crucial areas of supply, such as food and oil. Moreover, the two countries have emphasized manufacturing in their approach to generating economic growth, and this emphasis is translated into current-account surpluses.

Is there any reason to expect current accounts not to be in balance in the future, so that some industrial countries can persistently import capital from others? For an answer, we must look at the behavior of real exchange rates since 1979, with particular attention to the British and U.S. experiences. The assumption that current accounts are the dominant determinant of exchange rates gave way temporarily in the 1970s to the purchasing-power-parity (PPP) view, but the appreciation of the pound in the late-1970s and of the dollar in the early 1980s has finished off PPP as a working theory. Relative inflation will remain of interest in exchange-rate theory, but the constancy of real exchange

rates implied by the PPP view can be expected, if at all, only over periods lasting a decade or more. The focus now is on trying to explain large and rather durable changes in real exchange rates.

The liberation of international capital movements since the adoption of flexible exchange rates has posed the principal challenge to the view that the current accounts of industrial countries will tend over time to be in balance or slight surplus. As exchange-market operators became increasingly skeptical about theoretical attempts to predict exchange rates, they wanted to invest where the highest short-term return was available and to remain flexible in case conditions called for a reversal. The obvious way to obtain the highest short-term return is to buy a currency that is not expected to depreciate and that offers a high interest rate. In the late 1970s, this meant the pound sterling; in the 1980s, it has meant the U.S. dollar.

In the mid-1970s, the imports of capital equipment required to facilitate the build-up of British oil production were a factor in the large current deficits that helped depress the pound. But the principal depressant was the impression of social and political chaos caused by the destruction of a government by a single trade-union strike, accompanied by massive increases in wages, inflation, and government deficits. The pound fell by much more than enough to compensate for the high inflation rate. The 50 percent increase in the real effective exchange rate of the pound between 1976 and 1980 was based on the build-up of North Sea oil combined with a huge rise in oil prices. Other factors behind the pound's climb included the adoption of effective (if temporary) wage restraint, a reduction in public expenditure in real terms, and a switch to low monetary growth and high interest rates. While restraint of government spending and wages was abandoned in 1977, and strike activity reignited, the pound was held up by high interest rates and, later, by the second oil shock. With the election of Mrs. Thatcher in May 1979 and the overt application of monetary rigor at the height of the oil shock, the pound rose rapidly. Its real decline by 25 percent since the end of 1980, though aided by a less hectic oil market, has resulted mainly from lower interest rates after the 1980-81 recession and 1981-82 cuts in government borrowing.

The U.S. dollar hit bottom two years after the pound, in late 1978. Compared with its 1978 average, the real effective dollar exchange rate has risen by nearly 40 percent. As with sterling, the high interest rates were at first defensive, but they were sustained thereafter by a consciously enforced anti-inflationary monetary policy. Now they reflect excess demand and government deficits. Thus the upswing of the pound and its subsequent interest-rate-induced descent and the strength of the dollar since 1981 appear to reverse the traditional direction of causation. Exchange rates respond to interest rates rather than vice versa.

There have been major differences in the British and American exchange-rate experiences. The 1979-80 upsurge of the pound was accompanied by an increasing current-account surplus, as North Sea oil output increased rapidly in volume and price and the concurrent recession depressed import demand, particularly import-sensitive inventories. By contrast, the U.S. current account has worsened sharply since 1981 as the dollar has risen. In Britain, moreover, manufacturing industry was severely squeezed in 1979-80 by the high real exchange rate; between 1979 and 1981, manufacturing production fell nearly 15 percent (against a GDP decline of 4.2 percent), and the high pound may have contributed more to this than did high interest rates. In 1981, the British government deliberately cut its budget deficit, mainly to permit a noninflationary reduction of interest rates and an orderly descent of the pound. The resulting gains in output, together with the uncompetitiveness of manufacturing industry over much of the 1979-82 period, have helped to bring the British current account back toward balance.

In the United States, by contrast, the much less open economy made international uncompetitiveness easier to handle, although the adoption of import quotas in the steel and auto industries showed that major sectors of the economy were sensitive to the strength of the dollar. The huge current-account deficit, forecast at \$120 billion, about 3 percent of GDP in 1985, results partly from the strong economic recovery and partly from the real appreciation of the dollar, but it is only beginning to generate significant pressure for policies to bring the dollar down.

If no significant action is taken to reduce the budget deficit, however, a persistent economic slowdown could weaken the attraction of the United States to overseas investors, causing the dollar to decline. This decline and the tendency to import less as a result of slower growth would work to reduce the current-account deficit. But interest rates might be high enough in the medium term to attract large capital inflows even if economic performance is anemic. In that case, the U.S. capital shortage will be met partly by capital inflows; the dollar's fall will be modest, as will be the stimulus to growth stemming from an improvement in competitiveness. Conversely, economic development will be retarded in other countries by high interest rates set to compete for funds with the United States, but this effect will be mitigated by the undervaluation of currencies and the resulting profitability of export industries.

If action is taken to reduce the U.S. budget deficit and real interest rates return to past norms, the dollar will come down a long way and the current account will return toward balance. Current accounts have tended to medium-term balance in large part because of changes in government policies. It is only because of the relative size and lack of openness of the U.S. economy that there is any doubt about such an outcome in the U.S. case.

6 The Need for Fiscal Action

Before assessing the scale of fiscal retrenchment needed to raise employment and productivity growth in the industrial economies, we must look at characteristic recommendations of the two major alternative theories, the monetarist/supply-side and traditional Keynesian theories. Their recommendations underlie objections to the view that drastic action is needed on budget deficits to avoid serious trouble over the next few years.

Monetarism and Supply-Side Economics

A broad monetarist view links a desire for noninflationary monetary policies with the need for predictable policy and minimal interference with market mechanisms. It is thus a supply-side as well as monetarist approach. It does not preclude views about fiscal policy similar to those expressed here. Indeed, a belief in fiscal and monetary restraint together with the greatest possible freedom for market forces is close to the spirit of this Essay.

Nonetheless, the broad supply-side approach combined with monetarist orthodoxy also permits agnosticism about the danger of fiscal deficits at a time of relatively high unemployment and slow growth (e.g., Mundell, 1968). It emphasizes lower wages and less monopolistic wage formation as the key to recovery and high employment (e.g., Hayek, 1976). In the context of the shortage of capital posited in this Essay, it could be argued that lower wages would raise business profits and investment incentives. Higher net private savings would facilitate the financing of government deficits as well as private investment.

Even if it were accepted that lower wages will not lead to lower personal savings, offsetting the stimulus to business savings, the counterview is that large government deficits gratuitously exacerbate the shortage of capital and therefore necessitate a greater cut in real wages than would otherwise be needed to achieve full employment. To accommodate the price of labor to the present capital stock would also mean abandoning the goal of raising productivity by means of greater investment in physical and human capital to validate present real wages—a policy that would increase consumption in the future. Moreover, the growth of investment opportunities in high-technology and service sectors in conjunction with very high real interest rates could concentrate investment in new industries at the expense of an unnecessarily sharp contraction of the old.

Finally, a large fall in real wages might require a painful deflation of the economy; given continued government deficits, such a policy would call for monetary contraction and even higher interest rates. It would therefore aggravate government deficits and reduce business profits. A long transitional

period of deflation and rising unemployment could intervene before wages fell to the level required to generate enough employment.

The United States and Europe suffer from a light case of the problem that chronically afflicts less-developed economies, which are structurally deficient in capital and therefore unable to provide full employment at any wage level. The situation in the industrial West may be less extreme, but we do not know how large wage cuts would have to be to create full employment, and neither do we know how much interim unemployment would be needed to cause a drop in wages. The degree of wage reduction needed to make older industries competitive in their present form could be very large, whereas the investment and the implied consumption cut needed to provide the required savings seem reasonably limited and feasible, though significant. Moreover, an interim deflation to secure wage cuts might fatally wound the impulse of business toward higher investment and thus cause a genuine depression.

Traditional Keynesian Theory

Traditional Keynesians resist the view that government deficits are a chief cause of slow growth in the medium term. Rather, they sometimes claim that, were the economy to move to full employment under the stimulus of tax cuts or increased government spending, the extra tax revenue and lower social spending resulting from rising income and employment would eliminate government deficits. It follows that present government deficits are simply the result of some temporary, cyclical downswing of the economy. This in turn gives rise to the distinction between the allegedly "cyclical" and "structural" deficits followed in half-yearly publications of the OECD's *Economic Outlook* and in the U.S. Council of Economic Advisers' *Report to the President* in early 1984.

These deficits, however, are unlikely to have the stimulative impact predicted by traditional Keynesians. The analysis of U.S. and European investment patterns and needs presented here suggests that, although unemployment remains high, the usable capital stock is already nearly fully employed. The underutilization reflected in the published figures arises from the inclusion of capital that is suitable only for producing goods not in demand and capital that cannot be used economically at current costs and prices. Therefore, output and income cannot rise to bring down budget deficits without a major jump in investment, and the attempt to balance government budgets has to be made at present levels of income and output. In other words, current government deficits are almost entirely "structural."

The full analysis attempted here of private as well as public-sector savings and investment does not preclude the possibility that government budgets may need to be in high-employment surplus rather than balance. The pri-

mary question must remain whether we can achieve rapid economic growth and high employment of labor with present deficits, and, if not, how such a goal can be achieved. This pragmatic attitude to the level of the budget balance makes the methodology of the crowding-out analysis broadly Keynesian.

The Size of the Budgetary Correction

The estimates shown in Table 15 for the scale of fiscal action needed are based on the discussion in sections 3 and 4. They are necessarily "guesstimates" and are intended to suggest, however imprecisely, the size of the changes needed to avoid serious trouble over the next few years. A budgetary correction equal to 4½ percent of GDP is recommended for the United States, and corrections

TABLE 15
ESTIMATED NEED FOR FISCAL ACTION AND EFFECT ON CONSUMPTION

	U.S.	Japan	Germany	France	Britain
<i>Percentage of GDP</i>					
Gross savings:					
1984	17	31	22¼	19	19
Needed	<u>22½</u>	<u>31½</u>	<u>27</u>	<u>27</u>	<u>22</u>
Increase needed	5½	½	4¾	8	3
Potential growth-induced change from 1984:					
Personal savings	-½	-1	-½	—	-½
Business savings	-½	2	-½	½	-1
Government savings	<u>2</u>	<u>—</u>	<u>2</u>	<u>2</u>	<u>2</u>
Total	1	1	1	2½	½
Fiscal action needed	4½	0	3¾	5½	2½
<i>In Percent</i>					
Implied decrease in consumption ^a	5½	n.a.	5	7	3
GDP growth (per annum):					
With fiscal action	4	6	4	4¼	5
Without fiscal action	<u>2½</u>	<u>4</u>	<u>2½</u>	<u>2</u>	<u>3</u>
Difference	1½	2	1½	2¼	2
Consumption growth difference (per annum)	1½	2	1½	2¼	2
Years to recover consumption level projected without fiscal action	4	n.a.	3	3	2

^a Equals needed fiscal action (as % of GDP) grossed up by ratio of GDP to total private- and public-sector consumption (rounded to nearest ½%).

SOURCE: Estimated.

of 2½ to 5½ percent are recommended for Germany, France, and Britain. These estimates are derived by adjusting the necessary increase in gross savings for the changes in personal, business, and government savings that can be expected as economies return to more rapid growth paths. It is assumed (1) that any increase in investment/savings other than the benefit from faster growth has to be achieved by higher government savings and (2) that current accounts return to balance.

In the lower part of Table 15, the estimated effect on total consumption (personal plus government) of the suggested changes is worked out in order to show that the fiscal policy recommended here would be cost effective from a consumer's viewpoint. (The reduction in consumption shown simply reflects the degree of fiscal action needed grossed up by the ratio of GDP to consumption. The GDP growth rates with and without fiscal action reflect the estimates of GDP growth potential in Table 10 above and recent experience with crowding out.) While delays in the reaction of GDP growth to the suggested changes might lengthen the process somewhat, the rough estimate is that it would take only two to four years for total consumption to return to the level projected without the suggested fiscal-policy action. After that, of course, its growth would be considerably faster. Because both profits and employment would also be raised by the recommended policy, the welfare effects are good enough to justify the strong fiscal action envisaged here.

When the British government took restrictive fiscal action equivalent to 2 percent of GDP in 1981, a group of 365 eminent economists made a well-publicized protest, claiming the policy would push the economy from severe recession into deep depression. In fact, output started to recover in June 1981, three months after the budgetary action. The key to this recovery was a major fall in both interest rates and the pound. While depreciations of all currencies are impossible by definition, a worldwide implementation of restrictive fiscal policies would yield a worldwide drop in interest rates and recovery of import demand as well as domestic demand; individual economies would be stimulated by faster growth in world trade, just as Britain's was stimulated by a more competitive pound. Given the size of the fiscal-policy adjustment recommended, a program to achieve it might have to stretch over two to three years. In none of the countries for which such action is recommended could the initial stages of the fiscal action be expected to damage GDP growth, provided real interest rates were lowered in step with fiscal retrenchment. (This is also true of most other European countries, such as Belgium, Holland, Italy, and Spain, where the budgetary problems are worse than in Germany, France, and Britain.)

It is possible that the investment levels recommended here will not be fully matched by business enthusiasm for investment. That is not the conclusion one would draw, however, from the behavior of either housing or business

investment since interest rates came down in late-1982. If investment were to dry up before reaching those levels, that would be the time to decide whether such a large boost to investment was unnecessary or whether supplementary action to remedy structural problems was needed. The most obvious danger is that excessive wages (and, in Europe, rigid employment practices) will continue to militate against a return to high employment. Even so, lower rates of interest and higher investment in business and housing should raise employment somewhat and should certainly raise productivity. The latter, reflected in higher real incomes and profits, ought also to produce second-round gains in demand and employment. At the least, growth in employment and real income should fare better than with continued high budget deficits. Moreover, the achievement of greater downward flexibility of real wages could be promoted by an austere fiscal policy with lower interest rates, involving political advocacy of a short-term sacrifice of consumption in favor of investment.

Consequences of Inaction or Delay

The projection of excessive U.S. government deficits into the indefinite future raises the danger of a relapse into looser monetary policy. United States monetary policy has already taken an expansionary tack that could be construed as inflationary. The average annual growth rates of M1 and M3 over the most recent twenty-four months (through April 1985) have been about 9 percent. With an inflation average over the two years of under 4 percent, the real growth rates of M1 and M3 have been 5 percent. The average growth rate of real GDP since the low point of the recession has been 6 percent, and inflation shifted upward from its "low" of 2½ percent in the twelve months up to mid-1983. As real GDP growth slows during 1985, continued real monetary growth at these rates could provoke a reversion to faster inflation in future years, at least in the United States, aided by a downswing of the dollar. Lessened autonomous overseas capital inflows plus the desire to stimulate growth with lower interest rates might lead to monetization of the deficit.

It is more probable, however, that the continued steep yield curve in the United States is signaling that crowding out will weaken the economic recovery as well as any potential revival of inflation. Constrained by lack of usable capacity, economies may simply slow down in the absence of a large increase in savings and investment. In Table 16, the consequences for economic growth of fiscal inaction are estimated, and the effects on output per employee and unemployment are compared. These are "ballpark" figures based on recent experience (see Tables 7 and 10 above). As may be seen, industrial countries are risking a continued upward trend in unemployment from already high levels.

The continuation of present fiscal policies in most of the Western countries

TABLE 16
CONSEQUENCES OF FISCAL INACTION ON ECONOMIC GROWTH AND UNEMPLOYMENT

	<i>U.S.</i>	<i>Japan</i>	<i>Germany</i>	<i>France</i>	<i>Britain</i>
Economic growth, % per annum:					
1964-73	4.1	9.6	4.5	5.5	3.2
1974-79	2.7	3.7	2.4	3.1	1.3
1980-84	2.2	4.3	0.9	1.1	0.9
1985-90 (forecast)	2.5	4.0	2.5	2	3
Possible breakdown (1985-90):					
Employment	1.0	1.0	0.0	0.0	0.5
Output per employee	1.5	3.0	2.5	2.0	2.5
Resulting unemployment:					
1990	11.0	3.0	11.0	12.5	12.5
Actual mid-1985	7.3	2.7	9.0	9.5	13.5

SOURCE: Estimated.

for even a year or two—until they are even more demonstrably damaging than now and something is finally done—entails severe dangers. The first is cumulative de-industrialization as rising numbers of industrial plants pass over the boundary beyond which resuscitation is no longer possible at reasonable cost. Businesses will necessarily increase productivity; where this must be done without more investment, labor will be laid off. The concentration of these problems on youth and in cities accommodating older industries means built-in social stress. But the pressure of budget deficits is likely to thwart remedial social measures and needed infrastructural investment.

Another danger illustrated by current experience is the increase in restrictions on free markets designed to suppress the symptoms of problems, at the expense of misallocation of resources and more serious shortfalls of income and employment later. The current internal regimentation of the French economy is unlikely to be copied fully in the other four major economies, but the talk of adopting “industrial policies” or an “industrial strategy” amounts to a modified version of the same thing—at best, money wasting on politicians’ pet projects, at worst, a sharp diminution in the supply of already scarce capital and distortions of badly needed competition. The best industrial strategy is tough penalties for business failure, high rewards for success, and low interest rates without inflation. These are not possible with present fiscal policies. On the external side, the palliative of protectionism threatens long-term growth as well as the basic structure of international economic relations.

The last major economic consequence of continuing the present budget def-

icits could be severe financial strains. Already, the fundamental disequilibrium in the world's flows of funds and the strong inflation that was one of its earlier results have caused great instability in financial markets, manifested in violent and frequent changes in interest rates and exchange rates, both real and nominal. Not surprisingly, financial-service industries have been booming economic sectors in recent years. While the cost of this instability cannot be quantified, it must have caused enormous distortions in business decision-making and wasted large amounts of time and manpower in self-protection. The most obvious self-protection is to cut back on steps that promise only long-term benefits, in favor of short-term results. This has probably helped diminish investment and raise unemployment. Meanwhile, chain-reaction failures remain a concern.

There is a more specific financial threat: just as industrial investment is being cut back by high interest rates, so is LDC ability to borrow. However much the financial problems of LDCs may be caused by poor domestic policies, Western budget deficits and crowding out are adding a hostile world environment to self-imposed hazards. Most obviously, industrial-country markets are not developing, and the prices of staple commodities, on which many LDCs rely, are sharply down, especially in real terms. Equally, since LDCs are natural importers of capital, the high interest rates resulting from Western budget deficits are hitting them harshly, on old as well as new debt. And as Western countries drift into protectionism and try to keep out low-cost imports from LDCs, the balance-of-payments pressure on LDCs could become unbearable. With Western banks heavily invested in loans to LDCs, a series of random but large and widespread LDC defaults or a concerted moratorium on debt service would pose a major threat both to the financial system and to individual economies and world trade. Short-term economic recovery in the industrial countries and successful economic retrenchment in some of the larger and more exposed LDCs have reduced this danger over the last two years. But continuation of present Western fiscal policies would revive it.

7 Conclusion

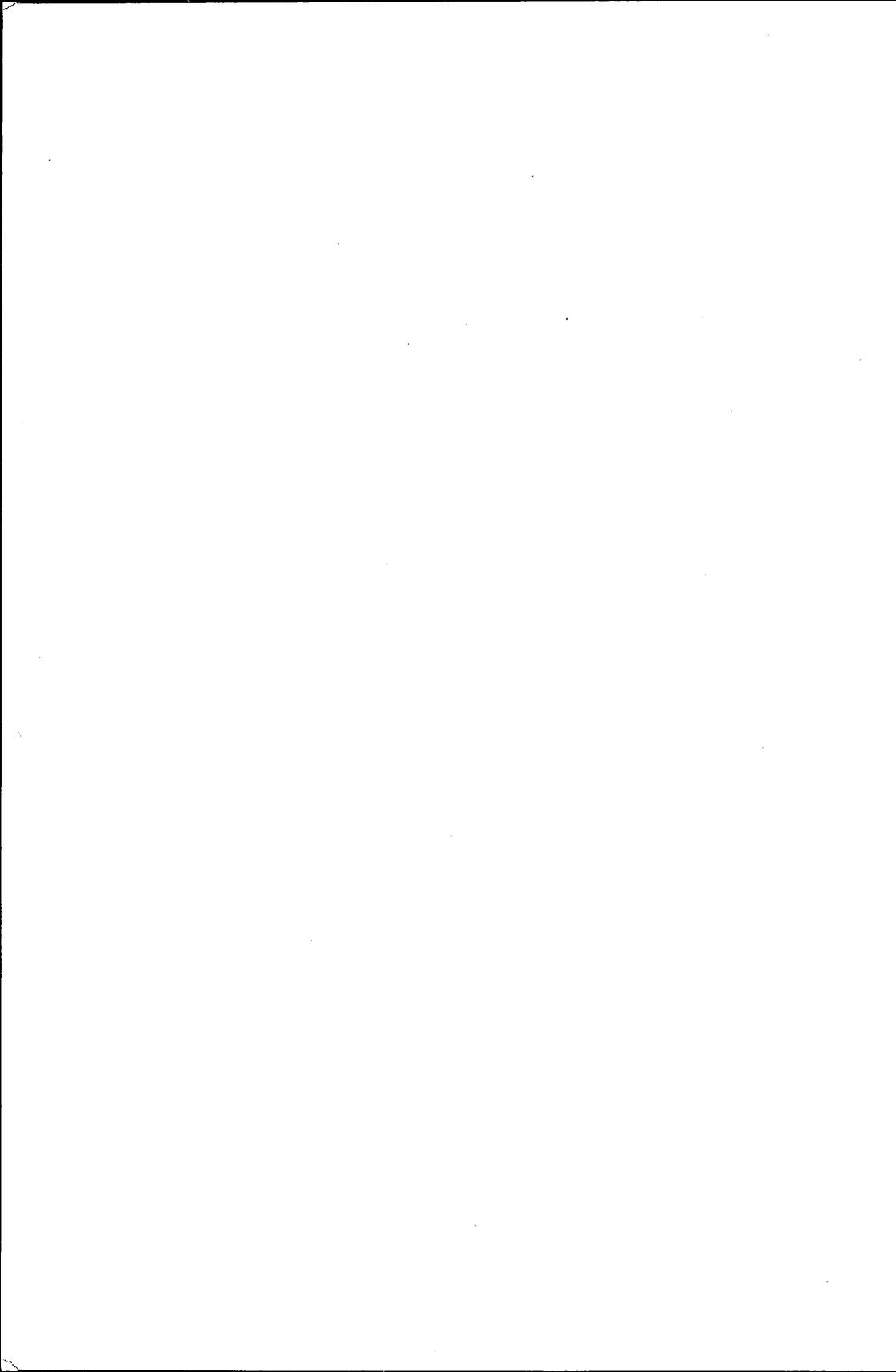
It is a sad irony that the period of greatest material advance in world history, with the most remarkable growth in the living standards of ordinary people, is now in danger of foundering because of excessive material appetites. Escaping the Depression of the 1920s and 1930s required the defeat of old shibboleths. The measures needed were not hard to undertake. Acceptance of Keynesian policies was mainly a question of being less inhibited about spending money. The problem now is harder, because the solution to present difficulties requires a definite sacrifice of living standards in the short run.

Small wonder that theories telling us we can escape problems painlessly,

with tax cuts for example, are widely and enthusiastically believed. But if the simple requirement of reducing consumption, by means of either government spending cuts or increased taxes on consumers, is not soon accepted, living standards will fall in any case. The resulting strains on the world economic system could weaken or destroy the foundations of prosperity. At best, there would be a prolonged stagnation of living standards and a steady rise in unemployment. More ominously, financial crisis could drive at least some parts of the world into depression and misery.

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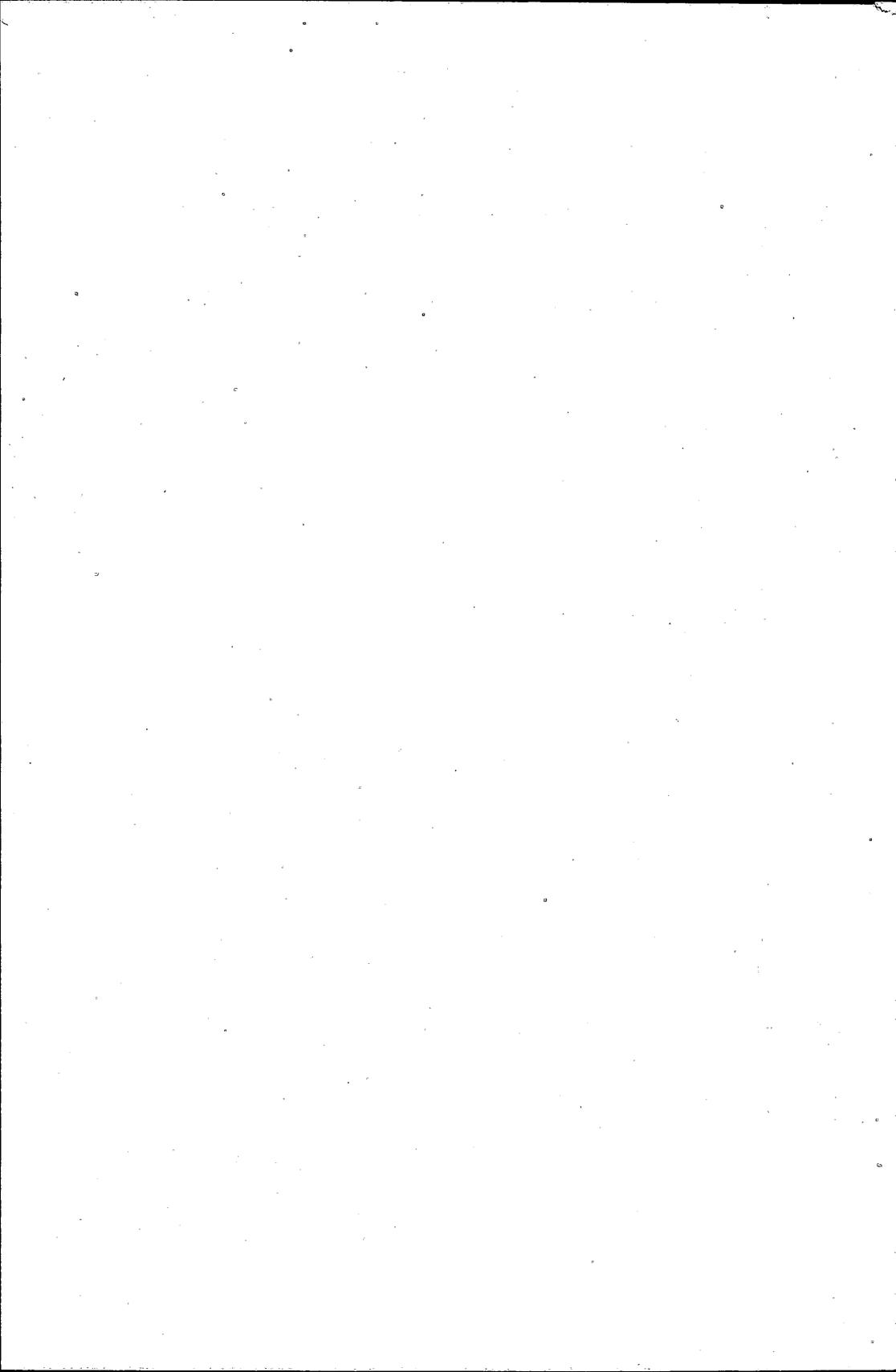
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ISBN 0-88165-065-X