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The Deficit Experience in Industrial Countries

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The paper is divided into three sections. The first reviews
briefly the difficulties encountered in comparing the fiscal balances
of different countries. It outlines several reasons why, under particular
circumstances, a simple comparison of ratios of fiscal deficits (as
conventionally measured) to gross national, or domestic, products may
be less meaningful than generally believed. It also outlines alternative
ways of measuring fiscal deficits and discusses their limitation.

The second section presents, for several countries and for a
time span of about a decade, some essential fiscal statistics. These
statistics should prove useful to the reader who wishes to make country-
by-country comparisons as well as comparisons over time. The third
section may, perhaps, be the most interesting as it presents an alter-
native way of looking at the current international fiscal situation.
It raises, as a working hyphothesis, the possibility that financial
markets have become so well integrated that a country-by-country look
at the fiscal deficit and its consequences may no longer be very
illuminating. On the basis of this hypothesis, Section III considers
the major industrial countries as parts of one economy. It thus
aggregates their fiscal deficits, GNPs, savings and so on, and estimates
relevant ratios for these aggregates. Recent developments make this
approach more realistic than in the past and perhaps more meaningful
than the traditional "each country is an island" approach. Reality is
probably somewhere between these two polar views of the world.

I.   Conceptual Issues and Definitions

Fiscal deficits are conventionally defined as the difference between budgetary expenditure and revenue. They are often related to the gross national product to obtain a ratio that, presumably, can be used to make intertemporal or intercountry comparisons. The casual reader of the financial press may feel that such a measure is objective and noncontroversial. Unfortunately, this is not the case as many problems arise when one attempts to use that measure to compare the fiscal stance of different countries or when one compares that measure for different years in the same country. The issues that arise are many and complex. Only the major ones will be discussed here briefly. These issues are important because they play a large role in the generation of alternative measures of fiscal deficits and consequently in explaining why different observers often reach different conclusions about the stance of fiscal policy that countries are following or should follow.

1.   Comprehensiveness of measure

There are several dimensions to this issue. The measure of the fiscal deficit should be a good reflection of a country's fiscal policy. But what, exactly, does this mean? How widely in space and time does one cast the net? Let us consider this question. Almost all contries have fiscal activities that are outside the scope of the central government budget. These may be extrabudgetary activities of the central government (including lending operations), or activities of public bodies--state and local governments, social security institutions and other pension funds, public enterprises, and so on--that are often outside the national budget. Depending on the country considered, these activities may constitute a large or small part of the total. Furthermore, their fiscal balance may have a different sign from that of the central government. For example, in recent years the state and local government sector of the United States has been showing substantial surpluses which in part have neutralized the large deficits of the central government. On the other hand, federal credit programs have expanded enormously. 1/ These programs have raised "the ratio of Federal and

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1/   The Office of Management and Budget reports that "In absolute terms, annual Federal and federally assisted net lending . . . increased 239 percent, from $25.5 billion in 1974 to $86.5 billion in 1983." "In 1983, Federal and federally assisted borrowing totaled $281 billion, up from an average of $32 billion a year during the first half of the 1970s." See Special Analyses, Budget of the United States Government, FY 1985, pp. F-1-F-2.

federally assisted <u>lending</u> to all funds advanced by nonfinancial sectors
in the U.S. credit <u>market</u> . . . [to] 17 percent in 1983;" and "the ratio
of Federal and federally assisted <u>borrowing</u> to all funds raised by
non-financial sectors in U.S. <u>credit markets</u> to 56 percent in 1983." 1/
Unfortunately, information on these lending and borrowing activities
of governments is not available on a comparative basis for different
countries so that their relative impact on credit markets cannot be
assessed. 2/

Another issue is directly related to the scope of public sector
activity in the economy. Suppose, for example, that in country A
electricity is provided by public corporations while in country B
it is provided by private corporations. Suppose also that total
outlays of these corporations (including investment spending) exceed
total revenues (excluding borrowing). Then in country A the (public)
corporations' deficit will contribute to the public sector fiscal
deficit while the (private) corporations deficit in country B would
not. But the pressure on the credit market would be the same. Thus,
a bias may be introduced in the comparisons if one considers a broader
definition of the government sector when the role of the public sector
is different in different countries. 3/

Another important issue has been raised by several writers [Boskin,
1982; Bossons, 1984; Buiter, 1983; Kotlikoff, 1984]. They have pointed
out that the conventional definition of the deficit, even when extended
to cover the whole public sector, (a) ignores expected future commitments
by the government, (b) ignores government capital gains and losses during
the budget year, and (c) ignores the fact that some public expenditure
results in the accumulation of valuable real assets such as buildings,
roads, etc. 4/ Thus, assume that under current legislation the present

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1/ Ibid. (italic added).

2/ Without detailed knowledge about the subsidy content of these
programs, it is difficult to assess their effect on the aggregate demand
for and supply of credit.

3/ I owe this point to Alexandre Kafka. This discussion assumes that
the borrowing requirements would be the same. This assumption becomes
unrealistic when (a) additional spending by the public corporations
brought about by political pressures, and (b) the fact that public
corporations cannot go bankrupt, induce larger borrowing by public
corporations.

4/ However, a point that has often been ignored is that some public
expenditures result in expected future liabilities. Thus, the "assets"
associated with loss-making railroads, subways, airlines, atomic energy
plants, public steel mills, etc. bring about a stream of future
liabilities.

value of future social security contributions is less than the present value of future social security benefits. In this case the net position of the public sector is worse than implied by the fiscal deficit. 1/ Or, suppose that the government owns mineral resources and that the prices of these minerals rise. Then, the net wealth of the public sector rises and this increase, it is argued, should be taken into account in estimating the deficit. Similar results would be obtained if the government accumulated assets over time by, for example, buying buildings (see Eisner and Pieper, 1984). In effect, it is argued that the permanent income of the country has increased so that a higher consumption (including public consumption) can be sustained even though the current (measured) income may not have changed.

As this brief discussion shows, there are great difficulties in determining what is the best measure of the fiscal deficit. Although many of the points made by critics of the conventional measure have undoubtedly some validity, and some of the alternative measures may have usefulness in particular circumstances, the conventional measure of the fiscal deficit remains the most useful in an analysis of financial markets. Furthermore, this measure is more easily calculated when the analysis relates to different countries.

2. Timing of expenditures and revenues

The question here is the following: should the fiscal deficit reflect cash or accrual concepts? At the beginning of the Vietnam War, in the mid-1960s, a broad consensus developed among American fiscal experts that the accrual concept was preferable for appraising the appropriateness of fiscal policy. The reason for this was that, as additional orders for defense items were received by the defense industry, and before any cash payments had actually been made, employment and incomes had already been affected. Similarly, before a tax payment is made, individuals and corporations have already taken into account those liabilities and have thus reduced their spending. That consensus reflected the then prevalent Keynesian view of how fiscal policy affects the economy. In today's world, where the importance of the deficit may be assessed more by its pressure on financial markets than by its direct impact on goods and labor markets, the cash concept may be preferable. 2/

1/ That is the measure of the public debt should include the discounted net difference between future expenditure and revenue. However, the assumption that there will not be any change in the law in future years seems unrealistic.

2/ This is the concept recommended by the Draft Manual on Government Finance Statistics of the International Monetary Fund (Washington, June 1974).

However, OECD data are consistently on a national accounts (or accrual) basis while the IMF data published in the World Economic Outlook are mostly (not all) on a cash basis when they refer to the central government and on a national accounts basis when they refer to the general government which includes state and local governments. The fiscal deficit for the United States commonly reported in the press is on a cash basis for the fiscal year.

3. Effect of changes in economic activity

At least since the 1950s [see Cary Brown, 1957; Lusher, 1956] it has been realized that the fiscal deficit not only affects the level of economic activity but is also affected by that level. 1/ On both the revenue and the expenditure side of the budget there are dynamic elements, endogenous to the system, that are beyond the control of the policymakers. The responsiveness of tax revenue to economic activity (the built-in flexibility) implies that, in the absence of discretionary measures, the deficit is likely to increase automatically in recession and to fall in booms. Therefore, in the face of changing economic activity, the uncritical comparison of fiscal deficits over different years for a given country, or over different countries for a given year, may lead to wrong conclusions. For example, suppose that country X is going through a strong expansion in economic activity while at the same time country Y is in the middle of a recession; in such case one could not conclude from the observance of similar fiscal deficits that the two countries are pursuing comparable fiscal policies. The same argument obviously applies when the fiscal policy of the same country is compared over two different periods.

Recently, it has become fashionable to think in terms of a structural and a cyclical component of the fiscal deficit. The concept of the structural deficit has been formulated and measured. 2/ This concept is analytically related to the full-employment budget surplus (FEBS) that played such a large role in the New Economic Policy pursued in the United States by the Kennedy and Johnson administrations. The

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1/ Some economists of the rational expectations school today believe that fiscal policy may have no effect on economic activity as individuals may fully anticipate policy actions by the government. Furthermore, they believe that the way in which public expenditure is financed, whether by taxes or borrowing, may also have no effect on economic activity.

2/ Estimates of structural fiscal deficits in industrial countries are provided in the second section of this paper.

main differences between the structural deficit and the FEBS are two:
first, the structural deficit no longer has the strong normative conno-
tation of the FEBS. In other words, it no longer necessarily guides
fiscal policy but is for many, though not all observers, just a statistic.
Second, while the FEBS was related to a relatively well defined rate of
unemployment or capacity utilization (i.e., to potential output), the
structural deficit is at times defined in relation to a "normal" or
"trend" level of output. As different observers are unlikely to agree
on what constitutes a normal or trend level of output, and as it has
become progressively more doubtful that there is such a thing as an
objective measure of potential output, the estimated measures of struc-
tural deficit are inevitably open to ambiguity. 1/ In fact, this is
the main problem with structural deficits. As shown in the following
section, one can produce widely divergent estimates depending on what
assumption one makes for output. There is simply no objectivity to this
measure of fiscal policy.

4. Effect of changes in the price level

Comparisons over time for the same country or between countries for
the same year can also be affected by differential rates of inflation.
The issues are complex so that only the most basic points will be made. 2/
The basic argument made by economists who would adjust the fiscal deficit
for the effect of inflation is that inflation brings with it a higher
nominal rate of interest and reduces the real value of the outstanding
public debt. In a simple Fisherian world, such a higher rate of interest
is approximately equal to the rate that would prevail without inflation
plus an inflationary component equal to the expected rate of inflation. 3/
This inflationary component broadly compensates the lender for the
erosion in the real value of the principal. 4/ However, traditional

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1/ For example, what is the potential output of a country that runs
into balance of payment bottlenecks well before its productive capacity
is fully utilized?

2/ The interested reader should look at [Buiter, 1983; Eisner and
Pieper, 1984] and at the papers presented at the International Conference
on "Economic Policy and National Accounting in Inflationary Conditions"
held at Dorga, Italy, January 25-28, 1984. Two conference volumes,
edited by Professor Giorgio Szëgo will be published by North Holland.

3/ The literature on the "Fisher effect" is enormous. See, for
example, the studies included in Taxation, Inflation, and Interest Rates,
edited by Vito Tanzi (Washington: IMF, 1984).

4/ Taxes on interest based on nominal values may complicate these
conclusions. See, ibid.

accounting treats the whole of interest payment (real plus inflationary component) as a current cost rather than partly as a repayment of principal. The result is that expected inflation raises the interest component of the budget and the size of the deficit as traditionally measured. There is thus a direct relationship between the rate of inflation that a country experiences and the conventionally measured deficit. 1/

The proponents of adjustments to that deficit argue that the individuals who receive the interest payments will not consider as income (and thus will not spend) the part that is necessary to compensate them for the erosion of their principal. 2/ In the absence of money or fiscal illusions, they will maintain unchanged the real value of their financial assets and will be willing to use that part to buy additional (government) bonds. Thus, this inflation adjustment should neither be considered an income by the holders of the public debt, 3/ nor should it be considered a current expense in the public budget. It is amortization, and amortization payments should not be included in the deficit.

The inflation-adjusted measures of the fiscal deficit attempt to make this correction either by estimating the net reduction in the real value of the public debt held by the public (i.e., by multiplying the nominal value of the debt by the rate of inflation for the year under consideration); or by assuming that all interest payment above some (more or less arbitrary) value of real interest rate (say, 3 percent) is amortization. 4/ Once the fiscal deficit has been corrected for inflation, its size falls, the ranking of countries by the size of the deficit changes and, more importantly, fiscal policy appears less expansionary than one would have assumed from the traditional measure. 5/

1/ This relationship depends on the relative size of the public debt (its share of GNP) and its maturity. The higher the share of the debt in GNP and the shorter its maturity the greater will be the sensitivity of the conventionally measured fiscal deficit to changes in expected inflation.

2/ Thus, this part will not contribute to total demand.

3/ Logically it should not be taxed.

4/ It has been argued [by Bossons, 1984] that the long term real rate of interest is 3 percent so that the real deficit must be measured in relation to this value.

5/ See on this: for the United States [Eisner and Pieper, 1984]; for Canada [Bossons and Dungan, 1983]; for the United Kingdom [Buiter, 1983; Miller and Babbs, 1983]; for other European countries [Cukierman and Mortensen, 1983]. It is no accident that most of the authors that have argued along these lines can be classified as Keynesians.

A full discussion of inflation-corrected fiscal accounts would require far more space than can be used here. However, a few comments are necessary. In the first place the implicit assumption that individuals do not suffer from fiscal or monetary illusions (i.e., that they distinguish between real interest incomes and monetary corrections) may not be realistic. 1/ Secondly, the corrections that are made are partial: they look at the effect of inflation on the real value of the debt but not at the effect of inflation on government expenditure and revenue. In industrial countries inflation generally has a more positive effect on revenue than on expenditure and this reduces the deficit. 2/ Thus, if one makes an inflation adjustment to the interest expense (or to the real value of the debt), he should also make an adjustment to the tax revenue. A lower inflation would reduce the interest payment but would also reduce tax revenue. The net effect of inflation on the deficit depends on which of these two influences is stronger. 3/

Thirdly, the implicit assumption, that regardless of the rate of inflation individuals would wish to maintain unchanged at a given real rate of interest their real demand for government bonds, does not seem realistic. A constant real demand for bonds might require an increasing real rate of interest so that an adjustment that assumes a constant real rate may not be realistic. 4/ If bond buyers become convinced that at some point the central bank will expand the money supply, they will demand higher nominal rates on long-term bonds than would seem warranted by the current expected rate of inflation.

1/ The author has argued elsewhere that the very low after-tax real rates of interest experienced during much of the 1970s were at least in part the result of fiscal illusions [see Tanzi, 1980a].

2/ This positive effect on revenue is due to bracket creep that affects all incomes, and to the distortion of taxable capital incomes (capital gains, profits, and interest rates) due to inflation. For a detailed discussion of these effects of inflation on tax revenue, see [Tanzi, 1980b].

3/ However, it is necessary to recognize that these two effects of inflation are different in principle. The rise in revenues as inflation increases happens whether the public recognizes it or not and without taxpayers being able to do anything about it except pressure the policy-makers for tax cuts. The reinvestment of interest receipts viewed as repayment of principal depends on the public's recognition of part of interest as repayment of principal and on bondholder's decision to maintain their wealth in the face of this depreciation in real value.

4/ This comment applies also to methods of adjustment, such as those of Miller and Babbs and of Bossons, that remove from the deficit all the excess in interest payment above a constant real rate of interest.

Fourthly, inflation does not affect the wealth of the bondholders in the straightforward manner implied by the Fisher effect. For example, nominal interest rates may not adjust for inflation à la Fisher but they may increase by more or less than the rate of inflation. Furthermore, even if interest rates have adjusted fully for inflation at the time the securities are issued, later increases in inflation that had not been anticipated at the time the securities were issued will produce unanticipated capital losses. It is unlikely that in such case individuals would use other incomes to maintain constant their real demand for public securities. 1/

Fifthly, and somewhat related to the previous point, inflation affects individuals and income classes in their roles as consumers, taxpayers, wage earners, savers, asset holders, lenders, borrowers, etc. Because of this multiplicity of influences, it is difficult and perhaps not meaningful to single out the effect associated with the holding of public bonds on effective demand. If the individual is suffering capital losses in his holdings other than government securities, is it realistic to assume that his real demand for government bonds will not be affected by inflation? In this connection, it is also important to point out that when nominal interest rates increase due to inflation, due to the progressivity of the tax system the increases may overcompensate some lenders (those subject to low marginal tax rates) but undercompensate others (those with high marginal tax rates). These differential effects will inevitably influence the real demand for bonds. 2/

Finally, inflation-adjusted fiscal deficits look backward at fiscal policy rather than forward in an ex ante manner. Yet, under particular circumstances, a fiscal policy that, adjusted for inflation, appears restrictive ex post, may have been expansionary ex ante and may in fact have been a cause of inflation. Assume for example that a fiscal deficit is financed immediately by a stimulative policy of monetary expansion, and assume also that the existing debt was mostly held in bonds of long maturity. Then assessing the fiscal policy ex post may lead one to conclude wrongly that the fiscal policy has been restrictive (because the government has experienced substantial gains through the inflationary depreciation of outstanding debt). Clearly, inflation complicates the comparison of fiscal deficits both through time and across countries. 3/

1/ See on this the article by P. Cagan in "the AEI economist" November 1981.

2/ See for a discussion of this point [Tanzi 1980b, Chapters 10-11].

3/ Estimates of inflation-adjusted fiscal deficits are provided in the second section of this paper.

5. Effects of temporary policies

Comparisons can also be affected by policy actions that reduce the deficit of a country for a particular year but that do not reduce the underlying, or core, deficit. 1/ Suppose, for example, that in a particular year a country (a) "privatizes" some of its public corporations by selling them to the private sector as is being done in the United Kingdom and other countries, (b) sells an unusually high number of exploration rights as was done in the United States around 1982, (c) declares a tax amnesty that induces taxpayers to pay, once for all, unpaid tax liabilities as was done in Italy, (d) sells zero coupon bonds or bonds at a discount and does not impute an interest charge as is being proposed in several countries, (e) postpones inevitable wage increases for public employees to the beginning of the following fiscal year, or (f) imposes a temporary surtax, as was done in the United States in the late 1960s and as it has been done by France several times. 2/ All these measures have the effect of reducing the current year's fiscal deficit without reducing the country's longer run or core deficit, except for the decrease in future interest payments associated with the lower public debt due to the reduced deficit for the current year. They make the fiscal situation of the country for that particular year look relatively better than it really is.

The various issues discussed in this section should be seen as red flags on the way to reaching strong conclusions, from the use of comparative statistics, about the relative fiscal policies of countries. They indicate that all the measures of fiscal deficits leave something to be desired. It is the opinion of the author that, in spite of its obvious shortcomings, the conventional measure is still the preferable one for an assessment of fiscal deficits on financial markets. This is the one that will be used in the third section. In the following sections comparative statistics will be provided. They will refer to the conventional deficit, the structural deficit, the inflation-adjusted conventional fiscal deficit, and even to the inflation-adjusted structural

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1/ Core deficit can be defined as the fiscal balance that would exist if the economy were on its trend and no temporary measures had distorted the level of taxes and expenditures. See on this definition Vito Tanzi and Mario Blejer, "Fiscal Deficits and Balance of Payments Disequilibrium in IMF Adjustment Programs" in Adjustment, Conditionality, and International Financing, edited by Joaquin Muns (IMF, 1984), pp. 117-36.

2/ The current discussion in Italy about imposing a once-for-all (una tantum) tax on wealth to reduce the fiscal deficit would represent another example of these temporary policies.

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deficit. The latter concept adjusts the conventional deficit for both cyclical factors and inflation. No statistics are provided for the core deficit.

II. Basic Fiscal Statistics

Table 1 shows, for the seven largest industrial countries (commonly referred to as the G-7 countries) four alternative measures of the fiscal deficit of the central government. The four measures are the conventionally measured deficit, the structural deficit, the inflation-adjusted conventional deficit, and the inflation-adjusted structural deficit. The conventional measure is the one published in the World Economic Outlook of the International Monetary Fund. 1/ The others have been calculated on the basis of particular assumptions. The structural deficit is the one that would have prevailed if, ceteris paribus, economic activity had remained at some "potential" level. In other words, it is the deficit that cannot be attributed to the influence of a cyclical slowdown. The inflation adjustment is made by taking the public debt at mid-year and multiplying it by the year's rate of inflation. This gives a measure of the "inflation tax." The "inflation tax" is then added to government revenue to recalculate the fiscal deficit. This adjustment can be made either to the conventional deficit, to obtain the inflation-adjusted conventional deficit, or to the structural deficit, to obtain the inflation-adjusted structural deficit.

As one moves from the conventional deficit to the inflation-adjusted structural deficit, a progressive shrinkage of the deficit is observed. This shrinkage is a direct function of the gap between actual and assumed "potential" level of economic activity and of the rate of inflation. It is easy to see from Table 1 why different observers often reach different conclusions about the degree of restrictiveness of fiscal policy. Take for example the United States in 1982. The conventional deficit expressed as a share of GNP was 4.3 percent while the inflation-adjusted structural deficit was only 0.6 percent. In the 1979-81 period the latter is shown to have been in surplus. 2/ Italy provides an even more extreme example. In 1982 the conventional deficit was 15.1 percent of GNP while the inflation-adjusted structural deficit was only 2.9 percent.

1/ It is on a cash basis except for Canada that is on a national income accounts basis.

2/ In 1983-84, due to the sharp fall in the rate of inflation and the pick up in economic activity, the differences among these measures were much reduced.

Table 1. Alternative Measures of Central Government Fiscal Deficits,
G-7 Countries, 1975-84

(Percentages of GNP)

		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984 1/
Canada	(A	2.3	1.8	3.5	4.6	3.5	3.5	2.2	5.3	6.2	6.6
	(B	2.2	2.2	3.5	4.5	3.8	3.6	2.5	3.3	4.1	4.7
	(C	--	0.3	2.2	3.2	1.2	0.9	-0.3	2.5	4.5	5.1
	(D	--	0.7	2.2	3.1	1.6	1.1	--	0.8	2.5	3.3
France	(A	2.6	1.2	1.0	1.6	1.5	1.1	2.6	2.8	3.3	3.3
	(B	2.1	1.1	0.7	1.6	1.7	1.1	2.0	2.1	2.2	1.9
	(C	--	-0.2	-0.3	0.3	0.1	-0.6	0.8	0.7	1.4	1.6
	(D	--	-0.3	-0.5	0.3	0.3	-0.6	0.3	0.1	0.4	0.3
Germany	(A	3.6	2.8	2.2	2.1	1.8	1.7	2.2	1.9	2.0	1.4
	(B	2.1	2.4	2.0	2.1	2.3	1.9	1.1	-0.5	-0.6	-0.8
	(C	--	2.4	1.8	1.6	1.3	1.1	1.6	1.1	1.4	0.9
	(D	--	2.0	1.6	1.6	1.7	1.2	0.4	-1.3	-1.2	-1.3
Italy	(A	10.7	9.1	9.0	13.1	10.8	10.8	12.8	15.1	16.5	16.9
	(B	10.7	10.0	9.3	13.1	11.3	11.5	12.1	12.8	12.4	12.6
	(C	--	1.3	0.5	6.0	2.5	0.3	2.9	4.6	6.5	8.2
	(D	--	2.0	0.7	6.0	2.9	0.8	2.4	2.9	3.4	4.8
Japan	(A	4.3	5.0	5.1	5.3	6.2	6.1	5.9	5.5	5.5	4.7
	(B	4.3	4.9	5.1	5.3	6.3	6.3	6.1	5.5	5.3	4.7
	(C	--	4.2	4.2	4.3	5.5	5.2	4.9	4.8	5.3	4.4
	(D	--	4.1	4.1	4.3	5.6	5.4	5.1	4.8	5.0	4.4
United Kingdom	(A	7.9	5.5	3.1	5.0	5.3	4.8	4.2	2.9	4.9	3.5
	(B	7.1	4.7	2.4	5.0	5.7	3.3	1.3	0.2	2.5	1.5
	(C	--	1.3	-1.3	1.4	0.9	-1.1	0.4	0.3	3.0	1.7
	(D	--	0.5	-1.9	1.4	1.2	-2.4	-2.2	-2.2	0.7	-0.3
United States	(A	4.9	3.3	2.7	2.0	1.2	2.4	2.5	4.3	5.8	4.8
	(B	2.7	1.9	2.0	2.0	1.2	1.6	1.8	2.2	3.8	4.0
	(C	--	1.9	1.1	0.1	-1.0	--	0.1	2.6	4.4	3.5
	(D	--	0.6	0.5	0.1	-1.0	-0.7	-0.5	0.6	2.5	2.7

Source: Based on data published in International Monetary Fund, World Economic Outlook.

1/ Estimated.

Note: A = conventional deficit; B = structural deficit; C = inflation-adjusted
conventional deficit; D = inflation adjusted structural deficit.

Considering the conventional deficit, the table indicates that Germany and the United Kingdom have been most successful in reducing the deficit while the fiscal situation seems to have deteriorated in Canada, France, Italy, and the United States. Some improvement is also registered by Japan since the late 1970s. When the effect of the cycle is taken out, by using the structural deficit, the relative results do not change much, although the deficits get smaller for all the countries. Structural fiscal deficits have grown in Canada, France (after 1980), and the United States. On the other hand, the structural deficit has fallen considerably in Germany and the United Kingdom, and, in the past couple years, somewhat less in Japan. The situation as described by the inflation-adjusted measures can easily be seen in Table 1. As already indicated, they are much lower than the other measures.

Tables 2, 3, and 4 rely on data prepared by the staff of the Monetary and Fiscal Policy Division, Economics and Statistics Department, OECD. These tables cover a larger group of countries and a longer period and, unlike Table 1 that relates to central government and uses a cash concept of accounting, they relate to general government and use an accrual (i.e., national income account) concept. Table 2 shows the conventional fiscal balance; Table 3 the structural fiscal balance; and Table 4 the inflation-adjusted fiscal balance. The tables also show aggregated data for the seven major countries, the smaller countries, and the 18 countries combined. The data have been aggregated by relative size of GNPs using 1982 GNP weights and exchange rates.

Table 2 points to a considerable deterioration of the fiscal situation since 1970. The period can be divided into three subperiods. The first, from 1970 to 1975, shows a dramatic and sudden increase in fiscal deficits in 1975 although in some countries (United Kingdom, Italy, Belgium, Ireland) the deterioration had started before the oil shock of 1973 and the sharp recession of 1975. 1/ The second period extends from 1975 to 1979 during which the fiscal situation improved in many countries mostly due to the strong economic recovery and the high rate of inflation that swelled revenues. In the major countries the tax systems were generally not indexed for inflation so that the countries benefited from substantial fiscal dividends associated with the high rates of inflation. The fact that real rates of interest were very low in this period also helped to keep spending down. For the seven major countries the general government conventional fiscal deficit

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1/ In 1975 the countries tried to maintain real incomes by sharply increasing public expenditure.

Table 2. General Government Conventional Fiscal Deficits, 1970-84

(Percentages of GNP)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984 1/
Australia	-2.9	-2.4	-2.2	0.2	-2.4	0.6	3.0	0.7	2.2	1.5	0.6	-0.5	-0.4	4.0	3.7
Austria	-1.0	-1.5	-2.0	-1.3	-1.3	2.5	3.7	2.4	2.8	2.4	1.3	1.2	2.6	3.3	2.3
Belgium	2.0	3.0	4.0	3.5	2.6	4.7	5.4	5.5	6.0	7.0	8.2	12.1	11.0	11.1	10.3
Canada	-0.9	-0.1	-0.1	-1.0	-1.9	2.4	1.7	2.4	3.1	1.8	2.5	1.1	5.3	5.9	5.3
Denmark	-3.2	-3.9	-3.9	-5.2	-3.1	1.4	0.3	0.6	0.3	1.9	3.3	6.7	9.4	7.8	6.0
Finland	-4.4	-4.6	-3.9	-5.8	-4.7	-2.7	-5.0	-3.2	-1.4	-0.5	-0.5	-1.5	0.5	1.4	0.7
France	-0.9	-0.7	-0.8	-0.9	-0.6	2.2	0.5	0.8	1.9	0.7	-0.2	1.8	2.6	3.2	3.5
Germany	-0.2	0.2	0.5	-1.2	1.3	5.7	3.4	2.4	2.5	2.7	3.1	3.8	3.5	2.7	1.4
Greece	0.1	0.9	0.3	1.4	2.2	3.4	2.6	2.1	1.7	1.9	5.1	12.6	9.9	9.9	9.8
Ireland	3.7	3.5	3.2	4.2	7.0	11.3	7.5	6.9	8.8	10.7	11.6	13.9	16.1	13.6	12.3
Italy	5.0	7.1	9.2	8.5	8.1	11.7	9.0	8.0	9.7	9.5	8.0	11.9	12.7	11.8	12.4
Japan	-1.9	-1.4	-0.4	-0.5	-0.4	2.7	3.7	3.8	5.5	4.8	4.5	4.0	3.4	3.1	2.3
Netherlands	0.8	0.5	0.6	-0.6	0.4	3.0	2.9	2.1	3.1	4.0	4.1	5.4	7.4	6.6	5.9
Norway	-3.2	-4.3	-4.5	-5.7	-4.7	-3.8	-3.1	-1.7	-0.6	-1.8	-5.0	-5.4	-4.9	-5.4	-2.4
Spain	-0.7	0.6	-0.3	-1.1	-0.2	--	0.3	0.6	1.8	1.7	2.0	3.0	5.8	6.0	5.7
Sweden	-4.4	-5.2	-4.4	-4.1	-2.0	-2.8	-4.5	-1.7	0.5	3.0	3.6	4.7	6.2	5.0	3.5
United Kingdom	-3.0	-1.5	1.2	2.6	3.7	4.5	4.9	3.1	4.2	3.2	3.5	2.8	2.1	3.7	2.8
United States	1.1	1.5	0.3	-0.6	0.3	4.2	2.1	0.9	-0.2	-0.6	1.2	0.9	3.8	3.9	3.1
Total major seven 2/	0.1	0.9	0.6	--	0.8	4.3	2.9	2.2	2.2	1.7	2.4	2.5	4.0	4.1	3.4
Total smaller countries 2/	1.4	1.2	1.2	1.3	0.9	0.9	1.1	1.0	2.1	2.5	2.6	3.7	4.9	5.4	4.9
Total of above countries 2/	0.1	0.6	0.4	0.1	0.6	3.9	2.7	2.0	2.2	1.8	2.4	2.7	4.1	4.3	3.6

Source: Organization for Economic Cooperation and Development (OECD).

1/ Estimated.
2/ Aggregated by relative size of GNP using 1982 weights and exchange rates.

- 14 -

fell from 4.3 percent of GNP in 1975 to 1.7 percent in 1979. For the whole group the improvement was less dramatic as the fiscal deficit of the smaller countries continued to grow through this period.

The post-1979 period is again one of deterioration at least up to 1983 when the recovery in the United States and, to a lesser extent, in other G-7 countries, started to reduce the deficit. The effect on revenue of the slowdown in economic activity was compounded by the fall in the rate of inflation as it is nominal income growth rather than real income growth that determines the size of the "fiscal dividend". An economic recovery accompanied by high real rates of interest and low inflation would not bring an equivalent improvement in the fiscal situation of these countries as in the 1975-79 period. Between 1979 and 1983 the combined deficit of the G-7 countries rose from 1.7 percent of GNP to 4.1 percent, while that of the whole group rose from 1.8 percent to 4.3 percent. In this period the deterioration of the U.S. fiscal situation (from a surplus of 0.6 percent in 1979 to a deficit of 3.9 percent in 1983) was highly significant; in the other countries the overall deterioration was from a deficit of 3.5 percent of GNP in 1979 to one of 4.5 percent in 1983. 1/

Table 3 provides estimates for structural fiscal deficits. For each country two series are shown. The top one estimates the deficit in connection with a "potential output" defined as a "trend output measured from peak to peak." 2/ One problem with this measure is that economies are generally not at peak levels. Between one peak and the next economies operate at lower levels of economic activity and thus generate less tax revenue and, perhaps because of unemployment, more public expenditure. In other words, the higher fiscal deficits in these nonpeak years lead to an accumulation of nominal public debt that must be financed. In recognition of this, the lower series has calculated structural deficits at an average level of economic activity or, more precisely, at the level of economic activity that prevails at mid-cycle.

1/ It should be recalled that this discussion relates to general and not central government.

2/ See Patrice Muller and Robert W.R. Price, "Structural Budget Deficits and Fiscal Stance," OECD, Economics and Statistics Department Working Papers, July 1984, p. 4. This source should be consulted for more detail on the methodology used to estimate these structural deficits.

Table 3. General Government Structural Fiscal Deficits, 1970-84

(Percentages of GNP)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984 1/
Australia	-2.9	-1.9	-1.9	1.1	-2.0	0.1	2.7	-1.0	0.3	-0.2	-1.4	-1.2	-2.1	1.6	2.9
	-2.2	-1.2	-1.2	1.8	-1.3	0.8	3.3	-0.3	1.0	0.5	-0.7	-0.6	-1.4	2.3	3.6
Austria	-2.1	-2.4	-2.3	-1.3	-1.2	0.5	2.7	2.1	1.5	2.4	1.6	0.2	1.3	2.2	1.6
	-1.6	-1.9	-1.8	-0.8	-0.7	1.0	3.2	2.7	2.0	2.9	2.1	0.7	1.8	2.7	2.1
Belgium	2.0	2.3	4.0	4.8	4.4	3.9	5.9	4.1	4.3	5.1	7.4	9.1	7.7	7.0	6.2
	3.6	3.9	5.7	6.4	6.0	5.5	7.5	5.8	5.9	6.8	9.1	10.7	9.3	8.6	7.8
Canada	-1.4	-0.1	0.2	-0.2	-1.1	2.4	2.0	2.2	2.9	1.6	1.7	0.5	1.2	1.9	2.1
	-0.3	1.0	1.3	0.9	--	3.5	3.1	3.3	4.0	2.7	2.8	1.6	2.3	3.0	3.2
Denmark	-3.2	-4.4	-3.2	-3.9	-3.9	-1.7	-0.1	0.1	-0.7	1.9	1.6	2.7	6.6	5.5	4.4
	-2.4	-3.6	-2.3	-3.1	-3.1	-0.8	0.7	0.9	0.2	2.7	2.4	3.5	7.5	6.4	5.3
Finland	-5.4	-6.6	-4.8	-5.8	-4.7	-3.6	-7.0	-6.2	-4.6	-1.7	-0.5	-2.1	-0.2	0.9	1.2
	-4.8	-6.0	-4.2	-5.2	-4.0	-2.9	-6.3	-5.6	-4.0	-1.1	0.2	-1.4	0.4	1.5	1.8
France	-0.9	-0.7	-0.4	-0.4	-0.7	0.4	-0.2	0.2	1.7	0.8	-0.8	0.2	0.6	0.7	0.1
	0.4	0.6	0.9	0.9	0.6	1.7	1.1	1.5	3.1	2.1	0.5	1.5	1.9	2.0	1.4
Germany	0.1	0.2	--	-1.3	0.5	3.4	2.2	1.3	1.7	2.3	2.5	2.4	0.9	-0.5	-1.7
	1.5	1.6	1.4	0.1	1.9	4.8	3.6	2.7	3.1	3.7	3.9	3.8	2.3	0.9	-0.3
Greece	-1.5	-0.6	-0.4	1.4	--	1.4	0.8	-0.1	--	0.3	3.0	9.3	5.7	5.1	4.9
	0.9	1.9	2.1	3.8	2.4	3.8	3.3	2.4	2.4	2.7	5.4	11.7	8.2	7.5	7.3
Ireland	2.5	2.0	2.7	4.0	6.8	10.3	5.7	6.5	9.2	10.7	11.7	13.3	14.3	10.6	9.1
	4.0	3.5	4.2	5.5	8.3	11.8	7.1	8.0	11.7	12.2	13.2	14.8	15.8	12.0	10.6
Italy	5.2	6.7	8.4	8.3	8.1	10.1	8.4	7.3	9.1	9.7	8.6	12.0	12.0	9.7	9.4
	6.0	7.5	9.2	9.1	8.9	10.9	9.2	8.1	9.9	10.5	9.4	12.9	12.8	10.5	10.2
Japan	-1.9	-1.7	-0.6	-0.3	-0.7	1.9	2.9	3.1	4.9	4.3	4.1	3.5	2.8	2.2	1.3
	-1.3	-1.2	--	0.3	-0.2	2.4	3.4	3.7	5.5	4.8	4.7	4.1	3.4	2.8	1.9
Netherlands	0.8	0.5	0.4	0.1	1.1	0.9	1.9	0.4	0.8	1.3	1.5	1.7	1.9	1.1	0.8
	3.5	3.2	3.1	2.8	3.8	3.6	4.6	3.1	3.5	4.0	4.2	4.4	4.6	3.8	3.5
Norway	-3.2	-4.5	-4.8	-6.4	-5.2	-4.7	-3.3	-2.5	-1.8	-2.3	-4.3	-5.4	-5.4	-5.4	-2.5
	-3.0	-4.2	-4.5	-6.1	-5.0	-4.5	-3.0	-2.2	-1.5	-2.0	-4.0	-5.1	-5.2	-5.1	-2.2
Spain	-0.7	0.3	-0.1	-0.4	0.6	--	0.3	0.8	1.7	1.1	1.0	1.3	3.5	3.7	3.2
	0.3	1.3	0.9	0.5	1.6	1.0	1.3	1.8	2.7	2.1	2.0	2.3	4.5	4.7	4.2
Sweden	-4.4	-5.9	-5.2	-4.0	-0.8	-1.6	-3.9	-3.7	-2.2	1.7	2.6	2.1	2.6	1.6	1.1
	-3.3	-4.7	-4.0	-2.9	0.4	-0.4	-2.8	-2.5	-1.0	2.9	3.7	3.2	3.8	2.8	2.3
United Kingdom	-3.0	-1.6	0.8	3.6	3.7	3.2	3.4	1.7	3.8	3.2	1.1	-1.8	-3.3	-1.6	-2.0
	-0.7	0.7	3.1	5.9	6.0	5.5	5.7	4.0	6.1	5.5	3.5	0.5	-1.0	0.7	0.4
United States	--	0.5	--	0.2	-0.7	0.9	-0.4	-0.6	-0.9	-1.2	-0.7	-1.6	-0.3	0.2	0.5
	1.8	2.3	1.8	2.0	1.1	2.6	1.4	1.2	0.9	0.6	1.1	0.2	1.4	2.0	2.2
Total major seven 2/	-0.4	0.2	0.4	0.6	0.2	2.0	1.3	1.0	1.6	1.3	1.2	0.6	0.9	1.0	0.7
	1.1	1.6	1.9	2.0	1.7	3.5	2.8	2.5	3.0	2.7	2.6	2.1	2.4	2.4	2.2
Total smaller countries 2/	-1.6	-1.6	-1.3	-0.7	-0.5	0.1	-0.7	0.1	0.5	1.3	1.4	1.7	2.2	2.6	2.6
	-0.4	-0.4	-0.1	0.5	0.7	1.3	1.9	1.1	1.8	2.5	2.6	2.9	3.4	3.8	3.8
Total of above countries 2/	-0.5	-0.1	0.2	0.4	0.1	1.7	1.2	0.9	1.5	1.3	1.2	0.7	1.1	1.2	1.0
	0.9	1.4	1.6	1.9	1.5	3.2	2.6	2.3	2.9	2.7	2.6	2.2	2.5	2.6	2.4

Source: Organization for Economic Cooperation and Development (OECD).

1/ Estimated.
2/ Aggregated by relative size of GNP using 1982 weights and exchange rates.

Table 3 highlights a few messages. First, it shows how sensitive the fiscal deficit is to cyclical fluctuations. 1/ As already mentioned, and as widely recognized, the fiscal deficit influences economic activity and is in turn influenced by it. Table 3 shows the results obtained when one plays the counterfactual game of assuming away the cycle in a ceteris paribus situation. 2/ The comparison of the results shown in Table 3 with those shown in Table 2 presumably reflects the effect of the cycle on the fiscal deficit. Second, the comparison of the two estimates of structural deficit made for each country in Table 3 shows how sensitive those estimates are to the assumptions made. In many cases the two series are widely different raising the obvious question of whether one or the other or either one can be relied upon to guide economic policy. 3/ Third, even when the fiscal deficits are corrected for cyclical effects, large differences still remain among countries. Some, as for example, Italy, Belgium, Denmark, Greece, and Ireland have very high structural deficits while in others the problem appears far less serious. Finally, the aggregation of the structural deficits of all the countries shown in the table may lead one to the rather surprising and unwarranted conclusion that there is no major fiscal problem in an international sense. As will be shown in the third section of this chapter, this is not the case. Aggregated structural deficits rose up to 1975 but, since that time have shown little trend and have ranged between 2 and 3 percent of GNP. 4/ This average hides the fact that they rose in the United States and fell in Germany, Japan, and the United Kingdom. Even at these levels they lead to debt accumulation and to growing expenditures on interest payments.

1/ The effect of the cycle will be magnified if prices rise during booms and fall (or at least their rate of increase slows down) during recessions.

2/ In the process one assumes away price changes, changes in interest rates, and changes in expectations.

3/ Compared to the structural deficit, the full employment budget surplus of the New Economics appeared at the time to be a much more objectively defined and measured concept.

4/ In a recent interesting paper R. Glenn Hubbard has analyzed the behavior of structural deficits over the past two decades. His conclusions are: "(1) the declines in potential income [in OECD countries in the second half of the seventies] had the immediate effect of raising budget deficits; (2) the higher budget deficits persisted because of the slow adjustment of government spending; (3) the responses of fiscal systems to changes in potential income, anticipated deficits, and cyclical disturbances did not change after 1973" [see Hubbard, 1984, pp. 12-13].

The concept of the structural deficit, and perhaps even more that of the inflation-adjusted structural deficit, is particularly attractive to Keynesian economists who believe that fiscal policy works mainly through its direct impact on aggregate demand and that it has little to do with inflation. To them, a fiscal deficit that is the consequence of a recession helps to sustain demand during the downswing but is not a vehicle for returning to full employment. They argue that, depending on the behavior of the private sector, a fiscal policy aimed at promoting full employment and a high level of economic activity may require substantial structural deficits during a period of inadequate demand. In their view crowding out of private activity by the fiscal deficit does not occur as long as monetary policy is accommodative and the economy is not operating at full capacity.

This line of reasoning can be misleading for the effect on capital markets. It is conventional fiscal deficits that must be financed, not structural or even inflation-adjusted fiscal deficit. The net sale of bonds in nominal values in a given year, either to citizens or to foreigners, is determined by the size of conventional fiscal deficits and not by theoretical concepts. To the extent that it is the sale of bonds that creates pressures on capital markets or on exchange rates, one cannot ignore the traditional measure of the deficit. Of course, the sale of government bonds may generate less pressure on the financial market when there is little private demand for credit (i.e., during a downswing) than when it occurs during a boom. 1/ That is one reason why it is so difficult to find statistical relationships between deficits and interest rates.

Table 4 indicates the extent to which one gets away from reality when one adjusts for both the cycle and the rate of inflation. If taken seriously the results in that table would indicate that, as some economists have actually argued, fiscal policy has been excessively restrictive even in countries such as Italy where public expenditure as a share of GNP has grown by as much as 20 percentage points over the period shown in the table. 2/

1/ Those who defend the use of inflation-adjusted fiscal deficit generally argue that inflation is not caused by fiscal deficits and that the real demand for bonds is not affected by inflation so that the nominal demand for bonds grows in line with inflation and the financing of the deficit does not become more expensive as the real rate of interest is not affected. They also argue that a less restrictive monetary policy will keep real rates low.

2/ See for two such examples: Cukierman, Alex and Jorgen Mortensen, "Monetary Assets and Inflation-Induced Distortions of the National Accounts - Conceptual Issues and Correction of Sectoral Income Flows in 5 EEC Countries" (mimeo, June 1983); and Olivier J. Blanchard and Lawrence H. Summers, "Perspectives on High World Real Interest Rates" (mimeo, September 1984).

Table 4. General Government Inflation-Adjusted Structural Fiscal Deficits, 1971-84

(Percentages of GNP)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984 1/
Australia	-3.4	-3.3	-1.2	-5.6	-3.2	-0.2	-3.4	-1.1	-1.7	-3.0	-2.6	-3.5	0.5	2.4
Austria	-2.7	-2.8	-2.0	-2.2	-0.5	1.7	1.3	1.0	1.9	0.2	-1.3	0.1	1.6	0.2
Belgium	1.3	2.3	2.2	-1.1	-1.4	2.5	1.7	3.3	4.0	4.8	5.6	2.9	2.5	2.3
Canada	0.9	1.2	0.9	0.1	3.7	3.3	3.5	4.0	2.5	2.6	1.3	1.8	2.4	2.6
Denmark	-3.1	-1.5	-1.6	-0.4	0.7	2.0	2.6	1.5	3.8	3.4	3.8	7.0	5.7	4.4
Finland	-5.0	-3.1	-3.4	-1.3	-0.3	-3.8	-3.0	-2.2	0.6	2.7	1.0	2.2	3.0	3.0
France	--	0.3	0.3	-0.5	0.6	0.1	0.6	2.1	1.0	-0.7	0.3	0.7	0.8	0.2
Germany	2.0	1.8	0.6	2.3	5.0	3.5	2.5	2.9	3.3	3.2	3.0	1.6	0.4	-0.8
Greece	1.4	1.3	1.3	-1.5	1.9	1.2	0.3	-0.3	-1.6	0.2	6.4	3.2	2.2	1.7
Ireland	0.8	1.7	2.4	3.6	5.6	1.8	3.8	7.8	6.4	4.8	6.2	8.3	6.8	5.7
Italy	5.3	6.5	3.8	-0.7	2.0	-0.3	-2.4	2.6	1.2	-3.4	1.4	2.0	--	2.3
Japan	-0.7	0.3	1.1	1.2	2.9	3.4	3.4	5.1	4.4	3.3	3.1	2.7	2.3	1.3
Netherlands	-0.7	-0.7	-0.7	-0.1	-0.4	1.2	0.6	1.9	2.3	1.4	1.3	1.7	2.4	1.5
Norway	-4.0	-4.3	-5.7	-4.4	-3.8	-2.5	-1.9	-1.3	-2.0	-4.1	-5.3	-5.4	-5.3	-2.3
Spain	1.1	0.8	0.3	1.3	0.7	1.0	1.6	2.3	1.5	1.2	1.2	2.9	2.9	2.4
Sweden	-2.8	-2.3	-0.8	3.5	2.5	0.3	1.0	1.9	4.8	6.9	5.4	4.8	3.3	2.4
United Kingdom	-5.1	-1.0	0.9	-1.6	-5.3	-2.3	-3.6	2.1	-0.6	-4.0	-4.4	-4.5	-1.5	-1.8
United States	1.2	1.0	0.6	-1.1	0.8	0.2	-0.1	-0.5	-1.3	-1.1	-1.4	0.4	1.2	1.4
Total major seven 2/	0.6	1.1	0.9	-0.3	1.3	1.0	0.5	1.5	0.7	-0.1	--	0.7	1.1	0.9
Total smaller countries 2/	-1.4	-1.2	-0.8	-1.0	-0.4	0.6	0.1	1.1	1.5	1.3	1.3	1.5	2.1	2.0
Total of above countries 2/	0.4	0.8	0.7	-0.4	1.1	0.9	0.5	1.5	0.8	0.1	0.1	0.8	1.2	1.0

Source: Organization for Economic Cooperation and Development (OECD).

1/ Estimated.
2/ Aggregated by relative size of GNP using 1982 weights and exchange rates.

III. Fiscal Deficits and the International Credit Market

1. International character of capital market

The previous section presented estimates of fiscal deficits for many industrial countries. One who believed that a relationship exists between the fiscal deficit of a country and that country's real rate of interest might be tempted to utilize those estimates to test such a relationship for each country. This country-by-country approach, however, is unlikely to capture the relationship between the fiscal situation and the behavior of real interest rates for one particular and important reason: countries are not isolated islands but are all parts of a credit market that is becoming progressively more international in character. Therefore, there may be valid reasons to concentrate on an aggregated picture of fiscal developments in industrial countries.

In recent years long-term real interest rates increased not just in those countries, such as the United States, where the size of the fiscal deficit was increasing but also in those countries, as for example, Germany and the United Kingdom, where the size of the fiscal deficit was falling. 1/ One could, of course, argue that these synchronous increases in real interest rates were caused by common external factors, such as the increase in the price of oil, or the policies of monetary restraint, that affected all the countries. But one could also argue that it was due to the growth in aggregated deficits as proportions of aggregated savings. 2/ Such an approach would give substance to a criticism of U.S. fiscal policy frequently made in Europe. It states that, given the size of the American economy, regardless of what fiscal action European countries took, they would still face high real interest rates as long as the fiscal deficit in the United States remained high. Putting it differently, it would take a very large reduction in the deficits of other countries to make a dent in the aggregate deficit as long as the U.S. deficit were large and growing.

In a discussion of, say, the labor or the housing market, one would focus on national or regional factors as the price of labor or houses is likely to be determined by national or even regional supply and demand schedules. Houses and, to a lesser extent, workers do not cross national frontiers. Their prices are thus only marginally

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1/ See IMF, World Economic Outlook, Occasional Paper 27 (IMF, Washington, D.C., 1984), Tables 2-7, p. 121.

2/ The rise in real interest rates continued after the effects of the two factors mentioned should have disappeared. It should be recalled that, as Tables 1 and 2 showed, there was a sharp growth in the ratio of fiscal deficit to GNP in the majority of industrial countries. Only when one uses artificial concepts such as inflation-adjusted structural deficits the increase is not visible.

affected, at least in the short run, by factors beyond the national border. Some prices, however, are set in markets broader than the national ones. For example, the price of oil or gold is not determined by national demand and supply schedules. The same is true for many other commodities that are internationally traded and that, apart from distortions created by import duties, subsidies, etc., respond to the law of one price. The price of gold is basically the same in New York, Hong Kong, Milan, or London.

The market for money--the credit market--is much closer in character to the gold or oil market than to the housing or labor market. Helped by the recent technological revolution in the information and communication fields, financial managers are now able to follow closely what happens in the money markets of different countries. 1/ This revolution has made possible for these managers the rapid access to much of the relevant information about domestic and foreign credit markets and to give instructions that within minutes can move enormous sums of money from one financial center to another. As someone has put it: "There is only one real money in the world [today] and that's balances at the Federal Reserve." 2/ Those balances can be changed within seconds. Some governments attempt to prevent these movements through regulations and capital controls and these controls can temporarily insulate a national financial market from the rest of the world. Over the longer run (which may not be very long), these attempts generally fail unless government control is so extensive as to leave little scope for private initiative.

A strong argument can be made that the market for money is now an international market in which the price of money or credit--the interest rate--is determined by the intersection of truly international supply and demand schedules. The annual flow of international lending (bank lending and bond issues) runs in the hundred of billions of U.S. dollars. 3/ The size of the Eurocurrency market, 80 percent of which is in Eurodollars, in 1983 exceeded US$2 trillion or, say, more than ten times the level of U.S. private savings. 4/

1/ See on this Martin Mayer, The Money Bazaars, Understanding the Banking Revolution Around Us (New York: E. P. Dulton, 1984).

2/ Ibid., p. 75.

3/ Net international bank lending was $215 billion and $185 billion, respectively, in 1982 and 1983 (estimate by the Bureau of Statistics of the IMF). For those two years, international net bond issues were $58.5 billion and $59 billion, respectively (estimate by the Bank for International Settlement).

4/ Meyer (op. cit., p. 96) reports that foreign exchange trading accounts for "probably $100 billion a day."

The international character of the credit market has been, implicitly, understood by those international finance economists who have developed the theoretical concept of interest rate parity. This concept has carried to the credit market the law of one price that had been developed for traded goods. By interest rate parity, it is meant that, adjusted for differential rates of taxation and inflation, for different maturities and default risk, and for expected changes in the exchange rates, interest rates cannot diverge for too long across countries. 1/ When they do diverge, money moves out of the lower-than-equilibrium rate countries and into the higher-than-equilibrium rate countries. These capital movements continue as long as national interest rates diverge from the internationally determined equilibrium rate. 2/

If the concept of interest rate parity is empirically valid (and if national credit markets are as integrated as described above), it has powerful implications for an interpretation of the effects of fiscal deficits on capital markets and, consequently, on interest rates. For example, fiscal pressures on interest rates within one country cannot be assessed by relating the demand for credit within that country to the supply of credit of that country. This may be so even when the country in question is as large as the United States. Thus, it makes little sense to relate the U.S. fiscal deficit to the supply of U.S. savings as has been done in many empirical attempts and in many discussions that have tried to find a connection, or that have argued that one exists, between the U.S. fiscal deficit and the U.S. real rate of interest. 3/

The U.S. demand for credit, whether originating in the public or the business sector, can be met by the U.S. supply of credit as well as by the rest-of-the-world's supply of credit. But, obviously, the

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1/ These needed adjustments make the empirical testing of this theory difficult.

2/ There is an ongoing academic debate on just how perfect the international capital market is. Various papers by [Feldstein and Horioka, 1980; Feldstein, 1983; Sachs, 1981 and 1983; Harberger, 1980; Tobin, 1983; and Penati and Dooley, 1984] have debated the issue. At the center of the debate has been a correlation of average saving rates of individual countries against those countries' investment rates. It is argued that the less perfect is the capital market the higher is the correlation that one would find as in isolation countries would need to finance their investment with their own saving. In a world with an integrated capital market, of course, a country's investment can be financed by foreign saving (by capital inflows) as long as the rate of return to that investment is higher than abroad. As often happens with academic debates, this issue is far from being settled.

3/ See for examples the studies cited in James R. Barth, George Iden, and Frank S. Russet, "Do Federal deficits really matter?" Paper presented to the Western Economic Association Meetings, Las Vegas, Nevada, June 1984.

U.S. demand for credit must compete against the rest-of-the-world's demand for credit. If the U.S. demand for credit rises because of a higher fiscal deficit at a time when the rest-of-the-world's falls, interest rates need not rise. Mutatis mutandis, given the U.S. demand for credit, an increase in net investment or in fiscal deficits in Europe or Japan is likely to cause U.S. as well as foreign interest rates to rise.
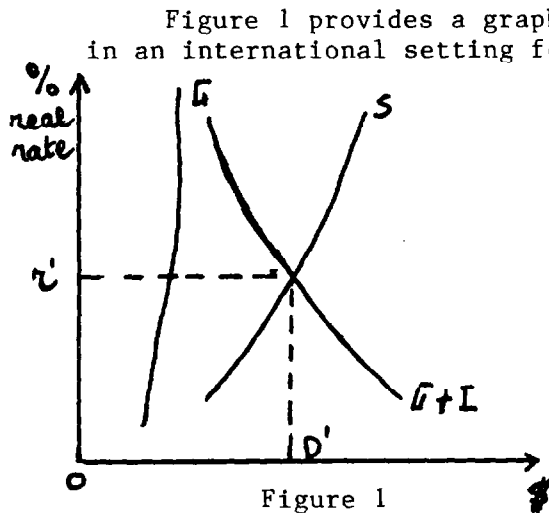
Figure 1 provides a graphical view of interest rate determination in an international setting for a given level of output. G represents the governments net demand for funds which is assumed to be identical to the combined fiscal deficits of the countries. This schedule is shown to be mildly positive-sloping to capture the fact that a higher real interest rate (shown on the vertical axis) is likely to be accompanied by a higher fiscal deficit (ceteris paribus). G + I represents the total demand for credit where I can represent either gross or net investment depending on whether the supply schedule S represents gross or net private saving. The equilibrium real rate is shown by r^1 while D^1 represents the level of credit at which demand and supply are in equilibrium. 1/

Figure 1

1/ One could argue that Figure 1 should also take into account money creation as this can also satisfy the demand for credit on the part of the government or the private sector. If this were done and if money expansion did not bring about any effect on nominal value, one would want to shift the supply schedule, S, in an eastward direction by the amount of money creation. This movement would reduce the rate of interest. However, when money changes are anticipated they do affect nominal values and these changes in nominal values may totally neutralize the interest-reducing effect (the liquidity effect) of the monetary expansion. For example, if money creation brings about higher nominal interest rates, this would affect the size of the conventionally-measured deficit and thus the demand for credit by the government. Some recent papers for the United States have presented evidence that the liquidity effect has largely disappeared in this country. However, the change in monetary policy that occurred in several countries around 1979 when inflationary expectations were high is likely to have contributed at the time to increases in real rates.

As the U.S. credit market is the most efficient, largest, and least regulated, one can argue that the U.S. interest rate is the best indicator of the level of the international real rate. 1/ It is, in a broad sense, the best measure of the opportunity cost of investing money anywhere else. The differential between the U.S. rate and those of other countries can be attributed to the various factors mentioned above.

Let us now consider one by one the elements behind the schedules that make up Figure 1, concentrating particularly on G that represents the combined fiscal deficits of the countries and thus reflects the governments' demand for loanable funds. Our discussion argues in favor of aggregating the fiscal deficits of all countries and not just the industrial countries in order to assess the total impact of governments' credit demands. In a literal sense this would require the aggregation of more than a hundred countries. This is hardly feasible and not really necessary as the economies of the largest countries are so large that by concentrating on them one captures a sizable share of the total. For example, in 1983 the G-7 countries (United States, Japan, Germany, France, United Kingdom, Italy, and Canada) accounted for at least 70 percent of the nonsocialist world's gross national product (GNP). The G-7 countries are so large compared to the other OECD countries that the basic proportions hardly change when the group of industrial countries is extended beyond the G-7 countries. 2/ As the availability of data is far greater for this smaller group and as little is gained by extending it, the analysis below is limited to G-7 countries. 3/

2. Fiscal deficit of G-7 countries

Table 5 provides some basic data for the G-7 countries combined. Columns (1) and (2) show the ratio of the combined fiscal deficits to the combined GNPs. Column (1) refers to central governments and Column (2) refers to general governments that is, to a broader concept, that includes local governments and some other public institutions. These data are similar to those shown in Tables 1 and 2 except for minor differences. The ratio of fiscal deficit to GNP was very low

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1/ An alternative would be to average the rates of the various countries. But, as pointed out earlier, this would imply averaging different risks, tax effects, etc.

2/ See data on Table 2.

3/ Up to 1982 there was a large net demand for credit coming from some of the largest developing countries such as Brazil, Mexico, Argentina, etc. In 1983 these countries contributed much less to the international demand for credit. On the other hand, OPEC's surplus also disappeared. OPEC surpluses do not enter in any of the tables.

Table 5. Basic Data on Aggregated Fiscal Deficits and Savings
of G-7 Countries, 1972-83

(Percentages)

| | Percent of G-7 GNP | | | | Percent of G-7 GPS | | Percent of G-7 NPS | |
	CGD (1)	GGD (2)	GPS (3)	NPS (4)	CGD (5)	GGD (6)	CGD (7)	GGD (8)
1972	n.a.	0.7	19.8	10.3	n.a.	3.4	n.a.	6.6
1973	n.a.	—	20.9	11.3	n.a.	—	n.a.	—
1974	n.a.	0.8	19.9	9.7	n.a.	4.0	n.a.	8.2
1975	4.8	4.3	20.7	10.2	23.3	20.8	47.4	42.3
1976	3.6	2.8	20.3	9.8	17.9	14.0	37.1	29.2
1977	3.2	2.1	20.2	9.6	16.0	10.6	33.6	22.3
1978	3.5	2.4	21.4	10.7	16.3	11.1	32.6	22.2
1979	3.1	1.8	20.7	9.9	15.0	8.9	31.4	18.7
1980	3.5	2.5	20.2	9.0	17.6	12.4	39.2	27.6
1981	3.7	2.6	20.3	8.9	18.4	12.8	42.1	29.4
1982	4.6	4.0	19.8	8.1	23.4	20.3	57.1	49.4
1983	5.7	4.1	19.6	7.9	28.9	20.9	71.6	51.7

Source: Based on Table 1 and on data made available by OECD. This
table was calculated independently from Table 2. This explains some
minor differences in the figures shown in Column (2) from those in
Table 2.

Note: CGD — Central Government Deficit
GGD — General Government Deficit
GPS — Gross Private Savings
NPS — Net Private Savings
All the national figures were converted in dollars using the
average exchange rates for each year. The dollar figures were then
aggregated using GNPs as weights and divided as required.

until 1975 when it grew sharply in the face of large increases in current
public expenditure and a slowdown in economic activity. 1/ Between 1975
and 1979 the ratio of fiscal deficit to GNP fell considerably in the
face of a slowdown in the relative growth of public expenditure and a
sustained economic recovery that, in conjunction with high rates of
inflation and progressive tax systems, raised the level of taxation.
From the lower point reached in 1979 the combined deficit rose sharply
reaching very high levels by 1982-83. These trends apply whether one
refers to the central government only (Column 1) or to general government
(Column 2). As a consequence, the demand for credit on the part of the
governments of these countries grew enormously. 2/

Was this increase in fiscal deficits accompanied by increasing
private sector savings as some recent popular versions of Ricardo's
equivalence theory argue? Columns (3) and (4) cast some light on this
question and provide information on the supply schedule of Figure 1.
Whether one considers gross private savings (column 3) or net private
saving (column 4), the conclusion is the same: there is no evidence
of a relation of a Ricardian type between fiscal deficits (or debt
accumulation) and the saving behavior of the private sector. In fact,
if anything, both net and gross private savings fell significantly in
the 1979-83 period which was exactly the period when fiscal deficits
were growing fastest. 3/ Between 1979 and 1983 the ratio of GPS to
GNP fell by 1.1 percentage points, and the ratio of NPS to GNP fell by
2.0 percentage points.

Table 5--columns (5), (6), (7), and (8)--also provides evidence
on the degree to which, over the period, government borrowing was
absorbing the supply of gross private savings--columns (5) and (6)--
or of net private savings--columns (7) and (8). In my view, the
relevant relationship is the one with net private savings. The reason
for this view is that, although in theory depreciation allowances by
enterprises could be used to buy government bonds, in practice, they are

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1/ Current disbursements of government as percentage of GDP rose
from 29.5 percent in 1973 to 31.4 percent in 1974 and to 34.4 percent
in 1975. The growth of real GDP at market prices was 0.2 percent in
1974 and -0.4 percent in 1975.

2/ Over the period shown in the table, the ratio of general government
debt to GNP rose by about 14 percentage points, nine of which during the
1979-83 period.

3/ For the G-7 countries combined the real recession (fall in real
GDP) did not come until 1982. The evidence on household sector saving
is more ambiguous. It declined in some countries and rose in others.

generally utilized by the enterprises themselves to replace depreciated investment or to make new investment. 1/ Columns (7) and (8) show that in the two most recent years a very large share of all net private savings was absorbed by the governments' need to finance their fiscal deficits. Starting in 1979 the ratio of fiscal deficit to net private saving rose sharply reaching very high levels in 1982 and 1983 and thus putting sharp pressure on the capital markets.

While the governments was absorbing progressively larger shares of the G-7 net private savings, what was happening to the other component of the total net demand-for-credit schedule, namely, investment? For the G-7 group gross private domestic investment as a share of GNP fell from a level of 18 to 19 percent in the 1977-79 period to 17 percent in 1980-81 and to 15 percent in 1982-83. As a proportion of gross private savings, it fell from around 90 percent in 1976-79 to around 85 percent in 1980-81 and to around 75 percent in 1982-83. Table 6 provides related data.

Table 6 shows the funds raised by the private sector of the seven largest countries in the 1980-83 period. The basic conclusion is the same as that derived from the data on fixed investment cited above. With the exception of the United Kingdom, in 1982 all the countries' private sectors reduced the quantity of funds raised; in some, the reduction was quite dramatic. In 1983, the U.S. private sector's demand for funds rose significantly but that of the other countries including the United Kingdom did not. Thus, to some extent, the public sectors' higher financing needs were compensated by the private sectors' lower needs.

This implicit accommodation of the private sector to the government's sharply higher financing demands did not prevent long term real interest rates from rising sharply in 1981 and even more in 1982 and 1983, although in the absence of that accommodation they would probably have increased even more. For the G-7 combined long term real interest rates rose from around 1 percent in 1976-79 to 1.9 percent in 1980, 4.2 percent in 1981, 5.4 percent in 1982, and 6.0 percent in 1983. 2/ This increase continued into 1984 in the face of a rising

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1/ The fact that the managers of corporations are often not their owners implies that they will prefer to reinvest available funds rather than pay them out to the shareholders and thus allow them to buy government bonds. There is evidence, however, that corporations have in recent years bought some public bonds.

2/ See IMF World Economic Outlook, 1984 (Occasional Paper 27), p. 121. These composites are averages of individual country rates, weighted for each year in proportion to the U.S. dollar values of the respective GNPs in the preceding three years. In the United States long-term real interest rates fell from 2.3 in 1976 to 0.7 in 1979. They rose to 2.1 in 1980, 4.2 in 1981, 6.6 in 1982, and 6.7 in 1983. The real interest rates are derived by using the annual change in the average GNP deflators to adjust the corresponding nominal rates.

Table 6. Fund Raised by Private Sector of G-7 Countries, 1980-83

(As percentages of GNP)

	1980	1981	1982	1983 1/
Canada	14.1	14.4	3.3	3.5
France	13.6	13.1	11.8	10.8
Germany	10.9	10.6	8.3	8.8
Italy	12.0	12.5	9.0	9.1
Japan	12.2	12.2	12.1	11.8
United Kingdom	9.0	9.5	10.5	9.4
United States	9.7	9.1	6.8	9.5

Source: Bank for International Settlements, Fifty-Fourth Annual Report, Basle, June 18, 1984, p. 45.

1/ Preliminary.

demand for credit by the private sector within the United States as well as in some European countries. This increase in private demand has been partly compensated by the lower public demand associated with lower deficits. 1/

3. Share of the United States in the G-7 totals

The previous section treated the G-7 countries as a unit and showed that, in recent years, the combined fiscal deficit grew sharply in relation to the combined GNPs and the total pool of savings. By 1982-83 these deficits were absorbing very large proportions of G-7 net private savings. This factor inevitably put strong pressures on credit markets and contributed to significant increases in real interest rates even though the higher public sector's demand for credit was in part neutralized by a lower private demand for credit as a consequence of the severe recession that, in Europe, continued well into 1983. In this section the role that the United States' fiscal deficit played in the totals is shown.

Table 7 has assembled the relevant information. In 1983 the United States contributed 42.8 percent of total G-7 gross private savings and 35.5 percent of total G-7 net private saving (see columns 1 and 2). These percentages were sharply higher than those in 1979 but close to those in 1972. The main factor in these changes was the appreciation of the exchange rate: as the dollar grew stronger, the share of U.S. saving in the total also grew. Between 1979 and 1983 the share of the U.S. fiscal deficit in the total grew sharply, from 15.9 percent for central government and -13.3 percent for general government, to 49.5 percent and 46.7 percent, respectively (see columns 3 and 4). Similar proportions had been briefly experienced in 1975 but they had fallen dramatically up to 1979. By 1983 the U.S. fiscal deficit was absorbing sharply higher shares of G-7 net private savings than in previous years. For example, the U.S. central government fiscal deficit's share of G-7 net private savings rose from 5.0 percent in 1979 to 11 percent in 1980, 12.6 percent in 1981, 25.1 percent in 1982, and 35.5 percent in 1983. In 1983 the deficit of the U.S. central government was absorbing more than a third of the total net private savings of the G-7 countries. If the general government is considered, the percentages are only marginally less dramatic. 2/

1/ The combined deficit of the G-7 countries, expressed as a share of GNP, are expected to fall from 4.1 percent to 3.4 percent between 1983 and 1984 (see Table 2 above).

2/ Again it must be repeated that as the dollar appreciates, it takes a larger share of non-U.S. savings to finance a given percentage of U.S. deficit. If the U.S. central government deficit is added to the U.S. gross private domestic investment and this total is taken as a share of G-7 total gross private saving, that share rises from around 50 percent in 1979-80 to 65 percent in 1983. If the general government is substituted for the central government, that share rises from around 47 percent in 1979-80 to 60 percent in 1983.

Table 7. Share of U.S. in Aggregated G-7 Totals, 1972-83

(Percentages)

	U.S. GPS as Percent of G-7 GPS	U.S. NPS as Percent of G-7 NPS	U.S. Fiscal Deficit as Percent of G-7 Fiscal Deficit		U.S. Fiscal Deficit as Percent of G-7 GPS		U.S. Fiscal Deficit as Percent of G-7 NPS	
			C.G.	G.G.	C.G.	G.G.	C.G.	G.G.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1972	41.2	34.7	n.a.	20.8	3.7	0.7	7.2	1.4
1973	39.2	35.5	n.a.	--	2.5	-1.3	4.6	-2.5
1974	38.8	33.3	n.a.	19.7	0.3	0.8	0.5	1.6
1975	40.2	35.7	46.0	44.2	10.7	9.2	21.8	18.7
1976	39.3	33.2	41.9	34.5	7.5	4.8	15.6	10.1
1977	38.7	32.8	37.7	20.1	6.0	2.1	12.7	4.5
1978	34.7	28.0	24.9	-3.3	4.1	-0.4	8.1	-0.7
1979	34.3	26.7	15.9	-13.3	2.4	-1.2	5.0	-2.5
1980	34.0	24.7	28.0	19.6	4.9	2.4	11.0	5.4
1981	38.7	31.2	29.9	15.9	5.5	2.0	12.6	4.7
1982	40.8	31.0	43.9	44.8	10.3	9.1	25.1	22.1
1983	42.8	35.5	49.5	46.7	14.3	9.8	35.5	24.2

Source: Based on data made available by OECD.

Note: CGD - Central Government Deficit
       GGD - General Government Deficit
       GPS - Gross Private Savings
       NPS - Net Private Savings
       All the national figures were converted in dollars using the average exchange rates for each year. The dollar figures were then aggregated and divided as required.

Between 1979 and 1983 the U.S. central government fiscal deficit rose from 1.2 percent of U.S. GNP to 5.8 percent (see Table 1); the central government fiscal deficit of the other six countries of the G-7 group rose from 4.6 percent of the GNP of those countries to 5.6 percent. If general government's fiscal deficits are considered, the percentages are the following: for the United States, 0.6 percent in 1979 and 3.9 percent in 1983; for the other six countries, from 3.7 percent to 4.3 percent. 1/ In either case, the U.S. deficit has put pressures on the credit market of the G-7 countries. The fact that the G-7 countries were experiencing a downswing in economic activity is likely to have prevented a greater rise in real interest rates. Should the fiscal deficits of the G-7 countries remain as high as in recent years while the U.S. recovery spreads to the other countries, one would expect to see higher real rates. On the other hand, should the United States experience a slowdown, the higher public sector's demand for credit (associated with a fiscal deficit made higher by the cycle) could very well be neutralized by the lower private sector's demand for credit. Which of these two effects would be the predominant one is difficult to tell. In any case, what would happen in the rest of the world would also play a substantial role.

IV. Concluding Remarks

This paper has surveyed the fiscal experience of the industrial countries with particular emphasis on the major ones. In spite of obvious difficulties in making an assessment of the fiscal situation of individual countries, and even more in comparing the fiscal situation of different countries, the statistical information available supports the conclusions that (a) over the past decade there has been a gradual and fairly general deterioration of the fiscal situation of the OECD countries; and (b) in more recent years, and in relative terms, the U.S. fiscal situation has deteriorated more than that of other countries.

It is, however, important to realize that, even though the size of the fiscal deficit has grown considerably in the United States, its magnitude, expressed as a share of gross national product, is not unusually high: it is still lower than that of several European countries and it is of the same order of magnitude as Japan's, a country not usually thought to be undergoing a serious fiscal situation. However, given the size of the U.S. economy, what happens to it has important implications for other countries. Thus, the large absorption of the pool of savings of the industrial countries due in part to the growing U.S. deficit after 1979 may have been an important factor in bringing about higher real interest rates.

1/ Calculated on the basis of data in Table 2.

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