

International Payments Imbalances in Heavily Indebted Developing Countries

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For combined threat and tenacity, few economic problems compare with the developing-country debt problem. When the Mexican payments crisis erupted in August 1982, it was the immediate threat to the stability of the international financial system that concentrated the minds of policymakers, at least in the creditor countries. However, the general hope, if not the expectation, was that the severity of the threat would diminish fairly quickly as the developing countries "adjusted" their economies, with the assistance of debt rescheduling and some new lending, so as to restore their creditworthiness and economic growth.

Indeed, the threat has diminished, but not because of successful adjustment or restoration of creditworthiness in heavily indebted developing countries. The threat to the financial system has eased as commercial banks have sharply reduced the share of their assets and capital exposed to the troubled debtor countries. The countries themselves are no better off, however.

The difficulty of the adjustment confronting the 15 heavily indebted countries—the tenacity of the debt problem—was generally underestimated.¹ This paper analyzes the nature of the adjustment that has taken place between 1982 and 1987, and, after considering some indexes

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¹ U.S. Treasury Department staff report that the "Baker 15" were selected as the 15 countries with the largest external debts, with debt owed primarily to commercial banks and also requiring rescheduling. They are listed in table 3.

of creditworthiness, raises the question of why growth has not accompanied adjustment.

Despite the lack of economic growth, the heavily indebted countries generally continue to service their debts, a phenomenon that is explored in a later section. Also addressed is the issue of debt relief.

The Balance-of-Payments Adjustment Process

In terms of the balance-of-payments accounts, the heavily indebted countries were confronted at the onset of the crisis with the challenge of financing a huge increase in interest payments, an increase stemming from marked rises in both their indebtedness and world interest rates. The \$28 billion surge in these payments from 1979 to 1982 more than "explains" the accompanying increase in the current account deficit (table 1). Since capital inflows to finance these interest payments were not forthcoming, trade balances had to be wrenched into sizable surplus. Remarkably, the surpluses were generated even though exports made almost no contribution, being of virtually the same value in 1987 as in 1982, and even smaller than in 1981. The improvement in the nominal trade balance was entirely accounted for by import reductions.

If exports of the 15 countries failed to increase in value, it was not for lack of increase in volume. The volume of exports grew by 23 percent from 1982 through 1987, but a decline in unit value was fully offsetting. On the other hand, the price paid by the 15 for imports rose by 3 percent over this period (IMF October 1988, pp. 84-85).

Whether the 23 percent growth in export volume should be viewed as a major adjustment effort is questionable. Over the same five-year period, the volume of world trade grew by 27 percent (IMF October 1988, p. 79). Thus, the 15 lost market share in real terms.

The massive import reductions of 1981-87 could not be effected without suppressing domestic growth. In no year between 1981 and 1987 did real GDP growth in the 15 countries even approach the average for 1970-79, and in 1987 per capita GDP was nearly 6 percent below the level of 1980 (table 2). To be sure, some of this decline represented a correction of the earlier economic boom, but some also resulted from the obstacles, internal and external, that these countries encountered in enlarging their exports.

The decline in economic growth was associated with a decline in gross investment. Between 1981 and 1987, gross capital formation fell from 24 percent to 17 percent of GDP in the heavily indebted countries (IMF October 1988, p. 66). Whether or not such a decline was warranted on efficiency grounds, the intermediate term prospects for economic growth seem diminished.

Table 1
 Current Account Transactions of 15 Heavily Indebted Developing Countries, 1979–87
 Billions of U.S. Dollars

Category	1979	1980	1981	1982	1983	1984	1985	1986	1987
Exports (f.o.b.)	94.2	127.9	127.0	112.2	111.1	123.4	118.8	99.4	112.5
Imports (f.o.b.)	96.1	122.4	133.6	108.2	82.8	80.4	78.2	78.7	86.1
Trade Balance	-1.9	5.5	-6.5	4.0	28.3	43.0	40.6	20.7	26.4
Services, Net	-25.8	-36.8	-46.9	-56.9	-46.8	-48.2	-45.1	-41.1	-40.1
Interest Payments Portion ^a	-17.1	-25.5	-37.8	-45.5	-41.3	-46.6	-44.3	-39.7	-37.5
Goods and Services Balance	-27.7	-31.3	-53.5	-52.9	-18.6	-5.2	-4.5	-20.4	-13.7
Unrequited Transfers	3.1	2.2	3.2	2.2	3.2	3.6	4.2	5.2	4.8
Current Account Balance	-24.6	-29.1	-50.3	-50.8	-15.3	-1.5	-.3	-15.3	-8.7

Note: Detail may not add to totals shown because of rounding.

^a Including dividends and other investment income payments not related to foreign direct investment.

Source: International Monetary Fund, *World Economic Outlook*, April 1988, pp. 156–57; October 1987, p. 85 and October 1988, p. 104.

Table 2
Real GDP and Real GDP Per Capita in 15 Heavily Indebted Developing
Countries, 1980–87
Annual Percentage Change

Year	Real GDP	Real GDP per Capita
Average, 1970–79 ^a	5.9	3.3
1980	5.4	2.2
1981	.1	-1.9
1982	-5	-2.8
1983	-2.7	-4.9
1984	2.3	.1
1985	3.8	1.7
1986	3.8	1.5
1987	2.5	.1

^a Compound annual rates of change.

Source: International Monetary Fund, *World Economic Outlook*, October 1988, pp. 64–65.

With the aid of data kindly supplied by the World Bank, the anatomy of the adjustment in real terms can be examined in greater detail. For our base year, we select 1982, when the debt crisis erupted and the need for adjustment became widely perceived, and to facilitate comparisons we generally use 1982 GNP as a common denominator.² Our primary focus is on the contributions made to changes in the volume of net exports by various key components of the national accounts.

To begin with net exports themselves, we see in table 3 that all but one of the countries raised its real net exports between 1982 and 1987. The median change was 5.9 percent of 1982 GNP. The range of experience was wide, however, extending from -3.9 percent (Bolivia) to 12.7 percent (Venezuela).

The time path of the adjustment seems both suboptimal and halting. Only four countries—Chile, Colombia, Mexico, and Nigeria—have recorded noteworthy increases in net exports beyond the increases already reported by 1983 or 1984. And appreciable declines from the 1983 or 1984 levels are evident for three countries—Bolivia, Ecuador, and Uruguay. Thus, across countries little progress in aggregate adjustment is discernible beyond the progress attained in the first year or two following the onset of the debt crisis. The front-end loading of the

² As the pre-crisis peak year, 1981 might have been selected as the base, but GDP data for that year were highly bloated by the boom. Also, 1982 was the peak year for the current account deficit.

Table 3
Changes in Net Exports of Goods and Services, in Constant Prices, as
Percentage of 1982 GNP, For Heavily Indebted Developing Countries

Country	1982-83	1982-84	1982-85	1982-86	1982-87
Argentina	1.1	0	6.5	4.3	2.2
Bolivia	.3	2.3	-3.5	-3.5	-3.9
Brazil	3.0	5.6	6.7	3.8	5.9
Chile	4.2	-.5	6.4	6.7	7.3
Colombia	1.4	2.5	5.6	6.0	7.2
Côte d'Ivoire	-.4	8.3	7.2	7.9	7.3
Ecuador	8.2	9.1	10.4	13.3	5.7
Mexico	4.5	4.7	4.7	5.3	10.7
Morocco	3.1	2.5	1.2	1.5	3.4
Nigeria	2.8	6.7	9.3	13.0	12.6
Peru	4.7	10.1	12.7	7.8	9.2
Philippines	-.5	3.8	6.8	7.8	3.4
Uruguay	4.8	6.3	7.3	9.0	4.9
Venezuela	10.6	7.5	9.4	8.1	12.7
Yugoslavia	.1	1.0	1.8	1.1	1.0
Median	3.0	4.7	6.7	6.7	5.9

n.a.: not available.

Source: World Bank staff.

aggregate adjustment suggests that, in the early stages, resources were not given enough time to shift without becoming unemployed, and that, more recently, aggregate adjustment may virtually have stalled.

Table 4 reveals that the volume of imported goods and nonfactor services actually shrank in 11 countries between 1982 and 1987. The typical (median) change with respect to 1982 GNP was a decline of 2.0 percent, although declines of 11 or 12 percent were experienced by Côte d'Ivoire and Nigeria. In four countries, the decline was large enough to account for nearly all, or more than all, of their increase in real net exports.

While import reductions often are an essential ingredient of balance-of-payments adjustment, they do not necessarily generate equivalent improvements in net exports. Many imports become components of exports, and domestic substitutes for those imports may not be readily available. A reduction in such imports, especially if accomplished through controls, can force fairly direct reductions in associated exports (Khan and Knight 1988). Nonetheless, decreases in import volume over 1982-87 have typically been accompanied by increases in export volume. Moreover, the reductions in import volume, measured from 1982, have generally diminished in recent years.

For another perspective on the adjustment process, recall that a nation can enlarge its net exports only by expanding its output by more

Table 4
Changes in Imports of Goods and Nonfactor Services, in Constant Prices, as Percentage of 1982 GNP, for Heavily Indebted Developing Countries

Country	1982-83	1982-84	1982-85	1982-86	1982-87
Argentina	-1.1	0	-2.2	0	1.1
Bolivia	.7	-1.4	.7	4.1	4.6
Brazil	-1.7	-2.0	-2.0	0.1	-1.8
Chile	-4.0	-.3	-3.2	-.9	3.4
Colombia	-2.0	-2.7	-4.0	-3.5	-2.6
Côte d'Ivoire	-4.0	-7.8	-10.3	-10.6	-11.3
Ecuador	-7.6	-8.1	-6.5	-6.7	-3.9
Mexico	-3.1	-2.1	-1.1	-2.3	-2.0
Morocco	-2.4	-1.6	-1.6	-.1	-.5
Nigeria	-3.8	-6.5	-7.4	-10.3	-11.9
Peru	-8.3	-11.9	-13.3	-9.5	-8.8
Philippines	2.4	-1.3	-5.6	-2.0	2.5
Uruguay	-4.6	-7.3	-7.1	-3.4	-1.4
Venezuela	-11.8	-5.9	-7.6	-4.6	-6.7
Yugoslavia	-1.3	-1.4	-1.5	-.7	-2.0
Median	-3.1	-2.1	-4.0	-2.3	-2.0

Source: World Bank staff.

than its domestic absorption of goods and services, or by shrinking its absorption by more than its output. Thus, the changes shown for GNP and absorption for each country in table 5 yield the net change in the country's net exports reported in table 3 (except for rounding errors). For most people, the preferred way to expand net exports would be to expand GNP, but both economic advisers and markets are more effective at restraining absorption, especially in the short run.

In fact, between 1982 and 1987 absorption decreased in 8 of the 15 countries with the median change for all 15 amounting to -2.2 percent of 1982 GNP. Nonetheless, in none of the countries was absorption in 1987 below that in 1983 or 1984, again indicating that the adjustment "crunch" came several years ago. The range of experience is striking. While Nigeria suffered a reduction in absorption amounting in 1987 to 19 percent of 1982 GNP, Brazil enjoyed a 21 percent increase. Of course, unchanged aggregate absorption implies a substantial per capita reduction for the typical country.

Far from achieving adjustment with growth, three countries—Bolivia, Nigeria, and the Philippines—recorded reductions in real GNP between 1982 and 1987. Bolivia was the only one whose output fell even more than absorption, producing a decline in net exports. Although a few countries attained significant GNP growth over the five years, the median change was only 3.6 percent.

Table 5
Changes in Output (GNP) and Absorption (A) as Percentage of 1982 GNP for Heavily Indebted Developing Countries

Country	1982-83		1982-84		1982-85		1982-86		1982-87	
	GNP	A								
Argentina	2.2	1.1	4.3	4.3	1.1	-4.3	8.6	5.4	9.7	8.6
Bolivia	-6.0	-5.9	-5.9	-8.1	-7.5	-4.0	-9.2	-5.8	-6.2	-2.4
Brazil	-3.3	-6.2	2.3	-3.3	11.4	4.8	21.7	17.9	26.6	20.8
Chile	-7	-5.0	3.2	3.7	8.0	1.6	14.2	7.5	23.2	15.9
Colombia	1.2	-2	3.6	1.1	6.5	1.0	10.6	4.6	16.6	9.3
Côte d'Ivoire	-3.4	3.0	-5.0	-13.2	-2.7	-9.9	3.5	-4.4	1.9	-5.4
Ecuador	-2.9	-11.1	-.9	-10.0	3.8	-6.6	7.5	-5.7	1.7	-3.9
Mexico	-5.0	-9.5	-1.0	-5.7	3.4	-1.3	-1.7	-7.0	3.4	-7.3
Morocco	1.9	-1.2	3.9	1.5	6.8	5.6	14.9	13.3	16.1	12.7
Nigeria	-5.4	-8.2	-13.0	-19.6	-5.2	-14.5	-.8	-13.8	-6.2	-18.8
Peru	-13.9	-18.6	-9.8	-19.8	-7.3	-20.0	4.0	-3.8	12.9	3.7
Philippines	1.2	1.7	-6.1	-9.8	-9.9	-16.7	-8.1	-15.9	-2.9	-6.3
Uruguay	-8.7	-13.5	-11.5	-17.8	-11.1	-18.3	-2.7	-11.7	2.7	-2.2
Venezuela	-4.4	-14.9	-6.4	-13.9	-5.2	-14.6	1.8	-6.3	5.2	-7.5
Yugoslavia	-1.2	-1.4	.4	-.6	.9	-1.0	5.2	4.1	3.6	2.6
Median	-3.3	-5.9	-1.0	-8.1	.9	-4.3	4.0	-4.4	3.6	-2.2

Source: World Bank staff.

Have the countries with the greater GNP or GDP growth been more successful in adjusting (enlarging) their real net exports (in relation to 1982 GNP or GDP)? The answer is negative; the correlation between growth and adjustment over the five years is virtually zero. Perhaps this finding should not be surprising. The nations with the higher growth rates may have attained those rates precisely because they were under less pressure to adjust, perhaps benefiting from more favorable terms of trade than other debtors or from more favorable appraisals by foreign lenders.

Is a sharp recession early in the adjustment process a good purgative, promoting external adjustment? Not obviously so; among this group of countries, no significant correlation obtains between the rate of real GNP change from 1982-83 and the change in net exports (as percent of 1982 GNP) from 1982-87.

As already noted, the typical heavily indebted country has been obliged to exercise severe restraint over its domestic absorption of goods and services. Now, not only the level but the composition of absorption is of considerable interest. Reductions in consumption may be more painful in the short run, but less painful in the long run, than investment reductions that lower future growth rates.

In table 6 we observe that the burden of restraining absorption has generally fallen primarily on gross domestic investment and secondarily on government consumption. Private consumption, with a median change of 5.8 percent of 1982 GNP, has grown in all but two of the 15 countries. The two, Mexico and Nigeria, suffered cuts in private consumption of 2.2 percent and 8.3 percent, respectively. (Because of the statistical discrepancy, PC, GC, and GDI in table 6 may not add to A in table 5.)

Gross domestic investment diminished in the typical country by 5.2 percent of 1982 GNP over the five-year period. In 12 countries investment declined. Even in Brazil, where GNP grew by nearly 27 percent, gross domestic investment increased by only 1.3 percent of 1982 GNP. The only country where investment increased notably in relation to 1982 GNP was Chile, with a remarkable gain of more than 11 percent.

Substantial restraint has been imposed on government consumption. The median experience from 1982-87 for the 12 countries reported was almost no change, and the largest increase was only 4.8 percent of 1982 GNP (Morocco).

Because absorption restraint has fallen so heavily on investment, GNP growth may be slow to recover. This is not to say that reductions in investment were unwarranted. During the pre-crisis boom, investment surely became excessive, yielding at the margin less than the socially relevant rate of interest. Thus, analyses of the debt problem may have placed too much emphasis on raising the supply of investable

Table 6
Changes in Real Consumption and Gross Domestic Investment as Percentage of 1982 GNP
for Heavily Indebted Developing Countries

Country	1982-83			1982-84			1982-85			1982-86			1982-87		
	PC	GC	GDI												
Argentina	3.2	0	-1.1	8.6	1.1	-3.2	-2.2	1.1	-6.5	8.6	1.1	-4.3	8.6	3.2	-2.2
Bolivia	.2	-1.3	-5.3	1.0	-2.2	-6.9	6.3	-3.8	-6.4	9.1	-6.5	-8.4	9.0	-3.8	-7.6
Brazil	-3	-1.4	-4.6	1.4	-2.2	-2.5	5.1	.2	-.5	12.5	1.9	3.5	19.0	.5	1.3
Chile	-2.8	-.1	-2.1	-1.8	.1	5.4	-2.7	.1	4.2	1.2	-2	6.5	5.1	-5	11.3
Colombia	.3	-.1	-.5	2.5	.4	-1.8	4.0	.9	-3.9	6.4	1.1	-2.9	9.5	1.6	-1.8
Côte d'Ivoire	-.1	-.6	-2.3	4.7	-3.5	-14.4	6.0	-6.9	-9.1	13.7	5.7	-12.4	5.8	.1	-11.2
Ecuador	-1.8	-1.0	-8.3	.1	1.6	-8.6	2.8	-2.2	-7.1	3.4	-2.3	-6.8	5.3	2.6	-6.6
Mexico	-3.6	.3	-6.3	-1.5	1.1	-5.2	.6	1.2	-3.1	-1.3	1.4	-7.2	-2.2	1.3	-6.4
Morocco	.8	-.7	-2.1	3.3	-.7	-1.9	4.3	.9	-.8	11.4	3.7	-1.9	10.2	4.8	-2.2
Nigeria	-4.0	-.5	-3.7	-7.5	-3.4	-8.8	-1.7	-5.5	-7.3	-1.7	-4.4	-7.7	-8.3	-2.9	-7.5
Peru	-5.7	-1.0	-11.9	-4.6	-1.0	-13.8	-3.3	-1.1	-15.6	4.9	-.7	-8.1	9.4	-.5	-5.2
Philippines	1.9	-.4	-1.3	2.6	-.8	-12.4	2.5	-.9	-15.6	3.2	-.9	-16.5	6.9	-.3	-14.5
Uruguay	-7.4	-.4	-5.6	-12.0	-.3	-5.4	-11.1	.1	-7.3	-4.9	.6	-7.3	2.1	1.1	-5.3
Venezuela	2.7	-.3	-13.3	.5	-.2	-11.0	-1.0	-.3	-10.1	5.6	.4	-8.6	.4	.4	-5.0
Yugoslavia	-1.0	-.3	-.2	-1.5	-.2	.6	-1.5	0	.1	2.5	.7	-.5	1.8	1.1	.6
Median	-.3	-.4	-3.7	.1	-.2	-5.4	.6	0	-6.5	4.9	.6	-7.2	5.8	.5	-5.2

PC: Private consumption.

GC: Government consumption.

GDI: Gross domestic investment.

Source: World Bank staff.

funds to the heavily indebted countries and not enough emphasis on raising the productivity of investment.³

The importance of raising the efficiency of investment in problem debtor countries is suggested by recent estimates of total factor productivity for the period 1982–87. For countries with recent debt servicing problems, total factor productivity growth was estimated to be negative, subtracting three-quarters of 1 percent per annum from the growth of potential output. By contrast, in developing countries without debt servicing problems, growth in total factor productivity contributed an estimated 1.25 percent per year to potential output (IMF 1988, p. 31).

Finally, in this brief empirical survey of the adjustment process, we turn our attention to the commodity terms of trade, and we pose the following counterfactual: If export prices received by the heavily indebted countries could have been adjusted each year so as to bear the same ratio to import prices as in 1982, with other things equal, how would those countries' trade balances have been changed? The answer is presented in table 7, which reports, for the end year of each period, the amount by which actual net exports exceed or fall short of net exports valued at the 1982 terms of trade, as a percentage of nominal GNP. For 8 of the 15 countries, actual net exports in 1987 fell short of what they would have been if the 1982 terms of trade had prevailed. The median was a shortfall of 1.5 percent of 1987 GNP. For Nigeria, this loss amounted to a startling 38 percent of 1987 GNP.

With respect to the terms of trade, another relevant question is whether the countries experiencing the greater deteriorations in their commodity terms of trade have also recorded the greater deteriorations (or the smaller improvements) in the value of net exports as a percentage of nominal GNP, as reported in table 8. The correlation coefficient is 0.59 and is significant at the 0.05 level under a two-tail test. A stringent two-tail test is appropriate, because theory offers no strong presumption as to the direction of the effect of terms-of-trade changes on the current account balance (Sen and Turnovsky 1988). The relationship suggested by the correlation analysis should, of course, be subjected to more rigorous econometric testing than is feasible in this survey.

Is Creditworthiness Being Restored?

After six years of struggling, are the heavily indebted countries in better position to service their debts, and to assume new debt? Indicators of creditworthiness commonly consulted by lenders to these nations present a mixed picture (table 9). While ratios of debt to exports and to

³ Vito Tanzi argues along these lines (Tanzi 1988, p. iii).

Table 7
Hypothetical Changes in Value of Net Exports of Goods and Nonfactor Services Attributable to Changes in Terms of Trade, as Percent of End of Period Nominal GNP, for Heavily Indebted Developing Countries

Country	1982-83	1982-84	1982-85	1982-86	1982-87
Argentina	.3	1.0	-.9	-2.0	-2.6
Bolivia	-.5	-.8	1.4	-7.2	-9.2
Brazil	-.1	.9	.1	1.3	.8
Chile	1.1	-.9	-2.5	-2.2	1.1
Colombia	.1	.7	1.3	4.1	3.1
Côte d'Ivoire	.7	6.9	6.5	7.3	1.3
Ecuador	-.5	-1.7	-4.4	-15.3	-14.0
Mexico	-5.3	-4.7	-5.2	-12.2	-6.0
Morocco	.4	.2	.7	3.0	2.7
Nigeria	-.9	-.9	1.8	-16.8	-37.5
Peru	.2	.1	-1.9	-2.1	-1.5
Philippines	1.4	2.2	1.6	5.4	4.7
Uruguay	-2.5	-4.3	-5.3	-1.0	.1
Venezuela	-.8	5.3	1.0	-7.2	-13.4
Yugoslavia	-.3	-2.3	-3.0	.3	-2.3
Median	-.1	.1	.1	-2.0	-1.5

Source: World Bank staff.

GDP were much higher in 1987 than when the crisis erupted, debt service ratios were much lower.

These indicators resemble the leading economic indicators used to forecast business cycles, in that they constitute measurement without much underlying theory, and their movements can mislead the unwary. For example, a country in outright default and paying no debt service would have the lowest possible ratio of service paid. More generally, all such ratios provide very little information about the capacity of a nation to service additional debt. That capacity depends on the ability both to employ capital productively and, when necessary, to tap the proceeds, an ability that could differ sharply among nations having the same debt service ratios.

In the present instance, the sharp decline in the debt service ratio in 1987 was associated with debt relief amounting to some 9 percent of exports—a record high—rather than with marked favorable changes in fundamentals such as market interest rates or export demand (IMF 1988, p. 19). Such a development hardly testifies to the ability of the heavily indebted countries to service still more debt—although it is possible that they could do so, if sound investment projects were waiting in the wings.

Another index of creditworthiness is capital flight. Flight capital may be defined as capital withdrawn out of fear of large losses, so that

Table 8
 Net Exports of Goods and Services as Percentage of Nominal GNP, for Heavily Indebted Developing Countries

Country	1982	1987	Change 1982-87
Argentina	-5.8	-6.6	-.8
Bolivia	-3.5	-16.3	-12.8
Brazil	-6.3	-.5	5.8
Chile	-9.9	-4.6	5.3
Colombia	-5.9	.3	6.2
Côte d'Ivoire	-10.3	-1.7	8.6
Ecuador	-10.5	-16.4	-5.9
Mexico	-.7	.1	.8
Morocco	-20.2	-10.0	10.2
Nigeria	-7.7	-1.7	6.0
Peru	-9.9	-3.0	6.9
Philippines	-8.4	.1	8.5
Uruguay	-5.3	-1.8	3.5
Venezuela	-4.6	-2.0	2.6
Yugoslavia	-2.5	-2.3	.2
Median	-6.3	-2.0	5.3

Source: World Bank staff.

massive flight signifies a sharp loss of confidence by many investors in the creditworthiness of the afflicted nation. Because one cannot know what portion of a capital outflow is provoked by fear of large losses rather than by less dramatic investment motivations, capital flight cannot be measured directly. Indeed, the flight may go altogether unrecorded, since the withdrawals are often made through channels that evade both normal reporting requirements and governmental restraint. Ironically, this very evasiveness has provided the basis for some measures of capital flight, the quintessential example being the "errors and omissions" item in the balance-of-payments accounts. Large swings in errors and omissions have long been attributed chiefly to unreported capital movements, and these swings may offer a crude barometer of capital flight.⁴

The barometric readings in table 9 suggest that the storm has subsided considerably from the peak intensity of 1982. It is not so easy as it was some years ago to make the case that funds loaned to the heavily indebted countries are used merely to finance capital flight. Even more encouraging, of course, would be some sizable positive

⁴ For a comparison of alternative measures of capital flight, see Cumby and Levich (1987).

Table 9
Debt Indicators and Balance-of-Payments Errors and Omissions for Heavily Indebted Developing Countries, 1980–87

	1980	1981	1982	1983	1984	1985	1986	1987
External Debt ^a as Percent of:								
Exports of Goods and Services	168	202	268	291	272	290	348	337
Gross Domestic Product	33	38	42	47	46	46	47	50
Debt Service ^b as Percent of								
Exports of Goods and Services								
Total	29	39	50	40	40	39	43	35
Interest Portion	16	23	31	29	29	29	28	22
Balance-of-Payments								
Errors and Omissions								
(Billions of U.S. Dollars)	-8.1	-15.4	-17.0	-10.0	-1.8	-4.4	-.4	-2.9

^a Long-term and short-term debt at end of year, but excluding debt owed to IMF.

^b Interest payments on total debt plus amortization payments on long-term debt only, excluding payments to IMF.

Source: International Monetary Fund, *World Economic Outlook*, October 1988, pp. 115, 128–31.

entries for errors and omissions, suggesting the repatriation of capital that had flown and a concomitant surge in confidence.

Those with strong confidence in market valuations will form their impressions of creditworthiness not so much from the data in table 9 as from the data plotted in the figure. As shown, the weighted average secondary market discount for the debt of the 15 heavily indebted countries widened from 30 percent at the beginning of 1986 to more than 50 percent in the first half of 1988, even though interest rates in the industrial countries were generally no higher at the end of this period than at the outset. To be sure, the market for less developed country debt is itself less developed, so that quoted prices may sometimes be misleading; but as the market has become more mature the discount has hardly diminished. Moreover, according to a recent study by Sachs and Huizinga, the market values of commercial bank stocks have been in line with the market valuations of developing country debt held by the banks (Sachs and Huizinga 1987, pp. 559, 576–87). Thus, the discounts depicted in the figure may be a fairly good index of the creditworthiness of the heavily indebted countries.

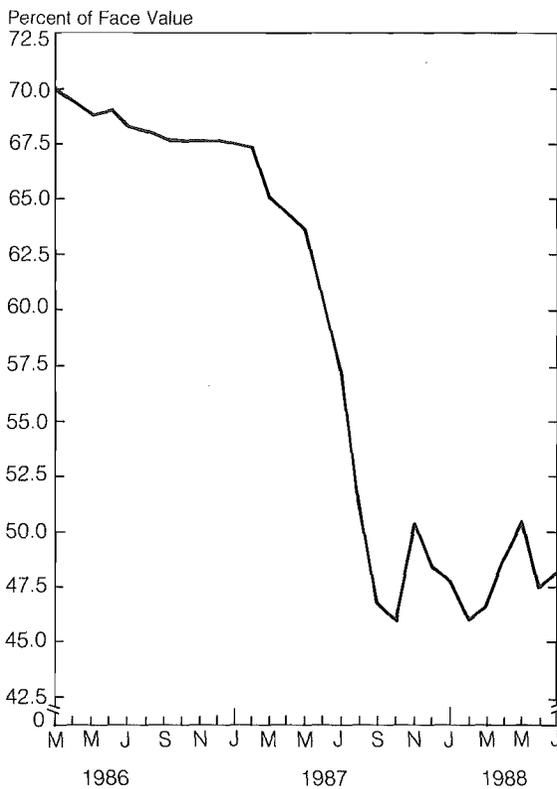
Rather than examining only the actual changes in such indexes of creditworthiness, one can compare those changes with earlier projections. One then obtains a measure of progress against expectations. If the progress diverges widely from the expectations, investigation of the reasons may yield helpful insights, leading to improved modeling of the relevant economic structure.

A preeminent source of forecasts relating to creditworthiness is the International Monetary Fund. In 1987 the Fund favored us with a frank analysis of the reasons that one of its earlier projections went awry. This analysis is summarized in table 10.

Focusing on the non-oil developing countries, the IMF projected in April 1984 that their external debt would be 132 percent of their exports of goods and services at the end of 1987. This projection contemplated a significant improvement from the figure of some 150 percent that had been published for 1983 (IMF 1984, p. 219). But by October 1987, the Fund had come to expect a ratio of 170, a number 38 points higher than the original forecast.

Of this net error, 14 percentage points were attributable to inadequate data on external debt, or in more positive phraseology, to progress in collecting data on debt that had been unknown to the Fund in April 1984. Another contributor to the error, accounting for 13 percentage points, was unexpected dollar depreciation, which boosted the dollar value of debt denominated in foreign currencies. Still another positive contribution, amounting to 19 percentage points, was made by a large, unforeseen decline in the prices these countries received for their export goods. Smaller, offsetting errors were generated by greater export

Secondary Market Prices for Developing Country Loans, March 1986 to July 1988^a



^a Weighted average prices for 15 heavily indebted countries, where weights are staff estimates of unguaranteed outstanding commercial bank debt at end-1986, adjusted for maturing short-term debt.
Source: International Monetary Fund.

volume and lower borrowing than had been expected for these countries.

What did not contribute to the forecast error is at least as noteworthy as what did. In particular, none of the error stemmed from a failure of gross output to grow as rapidly as projected in 1984. For the industrial countries, the output projections for 1987 made in 1984 and 1987 were identical; for the non-oil developing countries, the level of the 1987 projection was 1.75 percent higher than the 1984 projection. This fact is somewhat disquieting, as it raises doubt about the feasibility of adjustment *with growth* in the developing countries, a matter taken up in the next section. At a minimum, it is clear that "reasonable growth" in the industrial countries was not sufficient to improve the debt-to-export ratio, even with lower borrowing by the non-oil developing countries than the Fund had projected.

Table 10
Revision in IMF Projection of 1987 Debt Ratio for
Non-Oil Developing Countries^a

Description	Percentage Points
April 1984 Projection	132
October 1987 Projection	170
"Error" in Projection	38
Projection Error due to:	
Data Revisions ^b	14
Underlying Forecast Error	24
Forecast Error due to:	
Valuation of Debt ^c	13
New Borrowing	-5
Price of Exports	19
Volume of Exports	-3

^a The debt ratio is defined here as external debt outstanding as a percentage of exports of goods and services.

^b Reflects primarily the improved accounting of external debt statistics.

^c Reflects primarily the effects of exchange-rate changes.

Source: International Monetary Fund, *World Economic Outlook*, October 1987, p. 25.

Is Adjustment Compatible with Growth?

In principle, adjustment, or measures to restore creditworthiness, need not be the nemesis of growth. On the contrary, with effective expenditure-switching mechanisms that channel output growth into traded goods, growth should contribute to, rather than interfere with, balance-of-payments adjustment. The chief issue between "debt optimists" and "debt pessimists" is whether such an outcome is really attainable for the heavily indebted countries.

Optimists believe that heavily indebted countries will soon begin to "outgrow" their debts, lowering debt-to-GNP ratios largely through productivity gains partially financed by new loans from the rest of the world. For example, in a widely read article in *The Economist*, Martin Feldstein showed how Brazil might reduce the ratio of its external debt to its GNP by 18 percent between 1987 and 1992, "under relatively conservative assumptions" (including the assumption that Brazil's net debt service was limited to 2.5 percent of GNP). Such analysis led him to conclude that "muddling-through via modest increases in debt and equity" was the best approach to restoring growth and creditworthiness (Feldstein 1987). Pessimists doubt that even modest new lending to the heavily indebted countries is in prospect; or they doubt that new

lending, even if forthcoming, would be very effective in raising output, especially in relation to absorption.

Through 1987, the weight of the evidence favors the pessimists. Net lending to the heavily indebted countries remains very low, as indicated by their small current account deficit. Moreover, GDP growth rates also remain depressed, especially in per capita terms.

Why has adjustment with growth failed to materialize? Accurate quantitative answers to this question probably are not possible, but a number of hypotheses are deserving of serious consideration, including the following:

- (1) Past investments may have been ill-conceived, yielding little or no return;
- (2) Even well-conceived investments have been rendered uneconomic by unforeseeable adverse shifts in the terms of trade and in real interest rates;
- (3) Because of the rapid contraction in new lending, insufficient time was allowed for an efficient shifting of resources in the manner called for by long-term adjustment;
- (4) Extreme risk aversion has come to characterize the attitude of potential lenders, who, once burned in lending to heavily indebted countries, are now twice shy;
- (5) Aside from such risk aversion, the debt overhang itself discourages new foreign lending, because new loans, no matter how productive, may be lumped in with old unproductive loans for repayment purposes;
- (6) Governments of heavily indebted countries have often discouraged investment and growth through government dissaving, overvaluation of their currencies, and uncertainty-generating policy shifts.

Of course, these hypotheses are not mutually exclusive, but mutually reinforcing.

With regard to the first hypothesis, anecdotes are legion of hasty loan commitments to developing countries in the years immediately preceding the onset of the debt crisis. Many of the investments financed by these loans seem to have been selected in equal haste. One indication is the relatively high incremental capital-to-output ratios observed in a number of countries in the years surrounding the onset of the crisis; another is very low financial rates of return to public sector investments;

still another is estimated negative total factor productivity change in countries with debt-servicing problems.⁵

Bad judgment was compounded by bad luck, as the terms of trade turned sharply adverse for the 15 heavily indebted countries. Between 1982 and 1987, the prices of their exports fell by 20 percent in relation to the prices of their imports (IMF October 1988, p. 88). Moreover, the real interest rates paid by the developing countries, which had generally been negative from 1976 to 1980, soared in 1981 and 1982 and hovered around 13 percent through 1986, before plunging in 1987.⁶

The third hypothesis recognizes that dramatic changes in fundamental economic conditions, such as the changes of the early 1980s, call for extensive shifts in resource allocation. Developing country resources previously devoted to the production of nontraded goods had to be redirected to the production of exportables and import-competing goods. Some resource adjustments can be made quickly; others require more time. The more abruptly a current account deficit must be eliminated, the more expansion or contraction will occur in those activities that can respond relatively quickly and easily; and some of this short-run shifting will have to be reversed eventually as other adaptations, more suitable in the long run, become feasible. Thus, in the short run the country may expand its output and export of apparel, because it has the factories and marketing facilities in place. But from the standpoint of long-run adjustment the workers added to the apparel industry should perhaps be constructing buildings to house electronic assembly operations.

No elaboration is probably needed of points 4 and 5. As for the sixth, private investment is likely to have been diminished by governmental deficits in many heavily indebted countries. As one crude index of the problem, between 1982 and 1987 central government deficits ranged from 3.4 to 6.5 percent of GDP for these countries as a group (IMF October 1988, p. 78). Where the deficits have been to some degree financed by domestic market borrowings, private investment may have been crowded out. Commonly, the deficits have been largely financed, directly or indirectly, by domestic central banks, contributing to intense inflationary pressure that has also discouraged private investment. Another deterrent to private investors is the prospect of tax increases,

⁵ On incremental capital/output ratios, see Bianchi (1987, p. 214) and Tanzi (1988, p. 13). On rates of return, see Tanzi (1988, pp. 11–14). Total factor productivity is discussed in IMF (1988, p. 31).

⁶ The real interest rate is here defined as the six-month dollar LIBOR divided by the change in the price of exports of the developing countries (The World Bank 1988a, p. xv).

Table 11
Real Effective Exchange Rates for Selected Developing Countries, 1981–87
1980–82 = 100

Year	Argentina	Mexico	Korea
1981	107.7	114.1	101.2
1982	76.5	81.9	102.9
1983	71.6	79.0	97.6
1984	80.2	91.9	96.5
1985	71.0	90.4	88.7
1986	60.8	65.0	82.1
1987	53.4	66.7	84.0

Note: Where the exchange-rate system entailed multiple rates, the official rate was used in the calculations.

Source: *World Financial Markets*, 1988 Issue 7, p. 15, and February 1986, p. 11.

whose nature is uncertain, for the purpose of reducing the deficit in the future. Indeed, among analysts a clear consensus now exists that the heavily indebted countries cannot resume sustained, significant growth in per capita GNP without appreciable reductions in their governmental deficits.⁷

Although “overvaluation” is difficult to define operationally, the sharp depreciations of some developing country currencies during the 1980s at least raise the question whether those currencies had become severely overvalued, partly in response to excessive government borrowing from abroad. For example, the data in table 11 are consistent with the proposition that the Argentine and Mexican currencies were severely overvalued in 1981, and Korea’s currency much less so, if at all. This interpretation is supported by estimates showing massive capital flight from Argentina and Mexico, but not from Korea, during the early 1980s.⁸ Moreover, the wider fluctuations in the Argentine and Mexican exchange rates surely generated greater uncertainty among potential investors in those countries. Such fluctuations in exchange rates for developing country currencies were sometimes associated with abrupt changes in government policies.

These six hypotheses are hardly the full explanation of why growth-cum-adjustment has failed to materialize in the heavily indebted countries, but we doubt that any full explanation could omit them.

⁷ See, for example, The World Bank (1988b, p. 78); Sachs (1987); and Balassa et al. (1986, pp 13–14).

⁸ For estimates that probably are upper bounds, see The World Bank (1985, p. 64).

Why Is Debt Being Serviced?

Even though the heavily indebted countries have not been able to resume growth in per capita GDP, they generally continue to pay interest on their indebtedness. What determines the interest that the developing countries pay? The answer may require a dynamic, general equilibrium model of the world polity and economy. Here we present only a preliminary regression analysis that may offer some insights for more comprehensive modelling.

To begin with, if a country were both willing and able to meet its obligations, its interest payments would simply be a function of its outstanding indebtedness. Different classes of debt would, of course, entail different rates of interest. But the record is clear that countries differ in both ability and willingness to pay. An obvious index of ability to pay is per capita income. Another such index may be export receipts, since such receipts provide foreign exchange with which to service debt in the absence of net capital inflows (provided, of course, that the country economizes on imports).

What determines willingness to pay is more conjectural; change in per capita income seems a logical economic determinant. In addition, countries with large export receipts would generally be more vulnerable to trade sanctions or interruptions of trade credit, and on this count would have greater incentive to service their foreign debt. Thus, the volume of export receipts may affect willingness as well as ability to pay.

These considerations lead to the following model:

$$(I/Y)_i = a + b_1(LGD/Y)_i + b_2(C/Y)_i + b_3(LPD/Y)_i + b_4(P/Y)_i + b_5(X/Y)_i + b_6\Delta(P/Y)_i + e_i,$$

- where
- I = total interest payments on long-term external debt, public and private,
 - Y = GNP,
 - LGD = long-term public (and publicly guaranteed) external debt, excluding debt on concessional terms,
 - C = long-term public external debt on concessional terms,
 - LPD = long-term private (nonguaranteed) external debt,
 - P = population,
 - X = exports of goods and services,
 - e = the error term,
- and the subscript, *i*, represents the country.

The parameters were estimated by ordinary least squares. Available data permitted 79 developing countries to be included in the sample. All debt is the average for the year-ends 1981–86. Other variables are averages for 1982–86, with two exceptions: (P/Y), which is the average of

population for 1982 and 1986 divided by the average GNP for 1982–86, and $\Delta(P/Y)$, which is the percentage change in population per unit of GNP between 1982 and 1986. Population data are in millions, and other underlying data are in millions of U.S. dollars.⁹

The estimated equation is as follows, with *t* statistics in parentheses:

$$(I/Y)_i = 0.003 + 0.056(LGD/Y)_i - 0.110(C/Y)_i + 0.138(LPD/Y)_i \\ (0.92) \quad (9.26) \quad (-0.68) \quad (8.21) \\ -0.776(P/Y)_i + 0.014(X/Y)_i - 0.00004\Delta(P/Y)_i. \quad \bar{R}^2 = 0.79. \\ (-1.09) \quad (2.76) \quad (-1.23)$$

The data are long-period averages, and it would be gratifying to believe that the explanatory variables were fully exogenous, reflecting basic structural differences among countries but not phenomena affecting the explanatory and dependent variables jointly. We refrain from such wishful thinking, and take the results as suggestive only.

What is suggested, then, is that—at the margin and other things equal—the developing countries have been paying on their long-term private debt a rate of interest more than twice that on their long-term government debt (excluding concessional debt). Concessional debt increments seem to have been truly concessional, yielding no interest. As expected, higher exports may contribute to higher interest payments. Although the remaining parameters bear the expected signs, they are not significantly different from zero.

The ultimate test of creditworthiness, of course, is not how much interest is paid but whether debt is serviced on schedule. Thus, a number of studies have sought to identify the factors that determine whether developing country debt is rescheduled. One very recent and imaginative analysis concludes that a country is more likely to undergo rescheduling, and to experience deep secondary market discounts on its debt, if it has a highly unequal income distribution, a low share of agriculture in GNP, a low per capita income, and an inward-oriented trade policy (Berg and Sachs 1988). The first two of these explanatory variables are presumed to make for political instability and poor government management of fiscal policy.

Rescheduling, while a nuisance, nonetheless evidences that a debtor country has at least worked out an agreement with its creditors, so that debt servicing remains on schedule, albeit a more relaxed schedule. By contrast, arrears signify an inability or unwillingness to service debt on any mutually acceptable schedule.¹⁰ As table 12 shows,

⁹ Population data are from IMF (1987). Other data are from The World Bank (1988c).

¹⁰ Arrears are simply payments that a country owes but fails to make on schedule (or to reschedule by agreement with creditors).

Table 12
 Payments Arrears by Heavily Indebted Developing Countries, 1982-87
 Millions of U.S. Dollars

	1982	1983	1984	1985	1986	1987	Total 1982-87
Argentina	2,654	304	910	-2,393	-991	415	899
Bolivia	76	32	545	353	334	272	1,612
Brazil	0	2,192	-2,231	0	0	n.a.	n.a.
Chile	0	0	0	0	0	0	0
Colombia	0	0	0	0	0	0	0
Côte d'Ivoire	0	0	0	0	0	0	0
Ecuador	191	-46	118	-279	-15	0	-31
Mexico	0	0	0	0	0	0	0
Morocco	0	0	0	0	0	0	0
Nigeria	3,216	1,966	1,023	460	387	1,079	8,131
Peru	0	0	1,284	1,282	1,541	1,603	5,710
Philippines	0	1,095	628	-1,096	0	0	627
Uruguay	0	0	0	0	0	0	0
Venezuela	0	0	0	0	0	0	0
Yugoslavia	0	0	0	0	0	0	0

Note: Data show arrears incurred or discharged (-) each year.

Source: International Monetary Fund, *Balance of Payments Statistics* 39: Yearbook, Part 1, 1988.

five of the heavily indebted countries reportedly accumulated net arrears over the period 1982-87. At least for Nigeria and Peru, the sums were sizable. Ecuador, on the other hand, discharged arrearages over these years, as did Brazil for the period 1982-86.

The curiosity is that arrears have not been greater. The customary explanation is that countries service their debts for fear of being cut off from new loans. However, for several years the net new lending extended to the heavily indebted countries (their current account deficit) has been dwarfed by their interest payments (table 1). Indeed, net outward financial transfers from Latin America, whether measured as a percent of GDP or as a percent of exports, reportedly have exceeded the famous war reparations payments by Germany and rival the payments made by France following the Franco-Prussian War. If the trade surplus is a reliable index, Latin American real transfers clearly exceed those associated with the French and German reparations, according to the data in table 13.

Even if the heavily indebted countries could reasonably expect substantial net loans, recent theorizing indicates that the threat of denial of such future credit is not necessarily sufficient to deter default in the present (Eaton, Gersovitz, and Stiglitz 1986). The cost of being denied credit is having to endure wider fluctuations in consumption, or having to stockpile foreign-exchange reserves with which to smooth consump-

Table 13
 War Reparations, Net Outward Financial Transfers, and Trade Surpluses for
 France, Germany, and Latin America, for Selected Periods

Country and Period	Reparations (France, Germany) or Net Transfers (Latin America) ^a		Trade Surplus	
	Percent of GDP ^b	Percent of Exports ^c	Percent of GDP ^b	Percent of Goods Exports
France, 1872–75	5.6	30.0	2.3	12.3
Germany, 1925–32	2.5	13.4		
1929–32			2.5	13.8
Latin America, 1982–85	4.2	25.7	4.3	31.1
Argentina	6.0	41.4	5.9	48.0
Brazil	2.9	24.2	3.7	34.6
Colombia	–.3	–2.8	–2.8	–25.0
Costa Rica	–.3	–1.2	–.4	–1.5
Chile	3.3	14.2	2.6	14.3
Ecuador	4.5	19.6	6.6	32.2
Mexico	7.9	42.1	7.0	46.8
Peru	.8	4.6	2.3	15.8
Uruguay	5.3	20.8	4.6	23.7
Venezuela	9.3	33.6	11.2	43.3

Note: All data should be treated as estimates.

^a For France, reparations of F 5,000 million under 1871 peace treaty of Frankfurt ending Franco-Prussian War; for Germany, reparations of RM 10,720 million in currency and payments in kind as prescribed in 1919 Treaty of Versailles; for Latin America, net inflow of capital minus net payments of interest and profits.

^b National income rather than GDP for France and Germany.

^c Assumed to be goods, for France and Germany, and goods and services, for Latin America.

Source: Andres Bianchi, "Adjustment in Latin America, 1981–86." In *Growth-Oriented Adjustment Programs*, Vittorio Corbo et al., eds. 1987. pp. 206–207.

tion. Unless the borrowing country is extremely risk averse or faces a highly uncertain income stream, this cost may not seem high compared to the cost of repaying outstanding loans.

Thus, the economic incentive to service outstanding debt may arise mainly from considerations other than the net benefit of future net borrowing. One such consideration is the benefit of future *gross* borrowing, especially the borrowing that finances international trade. Even though a country may be a net creditor, its trade can be unsettled by a trade credit embargo.

The legal remedies available to the creditors of a defaulting sovereign government are limited, but not inconsequential, and have been

significantly expanded since World War II.¹¹ Before 1945 foreign governments were virtually immune from suit in the courts of the United States or the United Kingdom, the two major creditor countries. But as governments began to participate more fully in activities that previously had been the domain of private commerce, sovereign international borrowing came to be construed as a commercial activity. Today, therefore, courts within the United States and the United Kingdom will hear the requests of private creditors for sanctions against defaulting sovereign borrowers. And assets of the borrower that are used or held outside its territory for commercial purposes may be seized or attached, in most Western countries, especially if the loan contract contains the customary waiver of sovereign immunity with respect to the attachment of assets. Especially relevant is the right of banks to set off deposits owned by a defaulting borrower against unpaid loans.

Of course, a sovereign borrower planning to default might well take pains to shift its assets beyond the jurisdiction of courts that might seize them. Nonetheless, creditors could obtain orders of attachment for any future assets (including exports) of the debtor government or its instrumentalities that might come within the jurisdiction of the creditors' courts. Such action would give priority within that jurisdiction to the claims of these creditors over any new obligations incurred by the debtor. Thus, the debtor government would have difficulty in arranging new purchases, unless it could persuade suppliers to accept promised payments in jurisdictions other than those protective of creditors.

Defaulting governments may also face other costs. For example, under the Sovereign Immunities Act of 1976, countries defaulting on debts to U.S. citizens are to be denied trade preferences; and if claims are outstanding against a country in U.S. courts, U.S. representatives to the multilateral lending institutions are to vote against loans to that country.

Thus, the costs that may be incurred by defaulting are not limited to the curtailment of credit *per se*. The total costs seem to have been a significant deterrent. Among the heavily indebted countries, only a few have approached a state of "confrontational default." Peru is one. Having declared in July 1985 that its debt-service payments would be limited to 10 percent of its export earnings, Peru proceeded to amass arrears and showed little willingness to compromise with its creditors.

Peru's experience is instructive. In order to reduce the nation's vulnerability to legal sanctions that might be sought by creditors, the government shifted most of its foreign-exchange reserves into accounts that would be less open to seizure. In particular, the country's entire gold reserves, some 70 tons, were recalled from Zurich to Lima in

¹¹ See Alexander (1987, ch. II) and Kaletsky (1985).

February 1986. Since that date, however, reserves have dwindled. Peru also formulated contingency plans to circumvent any efforts to disrupt its merchandise trade. To thwart such efforts, the country would seek to channel its trade transactions so as to avoid holding title to goods within court jurisdictions friendly to creditors. According to estimates by Peruvian officials themselves, the cost of circumventing trade sanctions imposed after an outright default would range from 10 to 15 percent of the value of commodity trade (Alexander 1987, p. 46). On September 28, 1988, the Government relaxed its confrontational posture, announcing its intent to clear its arrears with the IMF and World Bank.¹²

Brazil, too, has been confrontational. On February 20, 1987, the Brazilian government announced an indefinite suspension of interest payments on most of its debt to foreign commercial banks. In February of the following year, however, Brazil indicated its readiness to resume those interest payments in conjunction with a debt rescheduling and new loans on terms more favorable to creditors than the nation had earlier been willing to accept. At the time, President Sarney conceded, "The fact is that we can't destroy the international financial system. We can scratch it, but it can destroy us."¹³ And Jose Luis Machinea, president of Argentina's central bank, concluded, "It has been demonstrated that the costs of a moratorium, such as cuts in credit lines and other losses, are greater than the benefits."¹⁴

The costs of a moratorium are not limited to those imposed by a government's external creditors. If a government refuses to service its external debt, doubts surely arise as to whether it will service its internal debt. A government that does not honor its obligations abroad may encounter greater difficulty in marketing them at home, and the interest it saves from nonpayment to external creditors may be partly offset by higher risk premiums demanded by resident creditors. More generally, all investors, especially foreigners, may become more fearful that the government will take additional measures to raise its revenues or foreign-exchange holdings at their expense. Thus, aggregate investment in the nation's economy may be suppressed.¹⁵

In sum, both logic and recent history suggest that unilaterally "laying down the law" toward creditors is unprofitable for a debtor, or

¹² "World Bank Appears Eager to Return Peru to Fold," *Journal of Commerce*, September 30, 1988.

¹³ Alan Riding, "Brazil Seeks to Mend Ties with Lenders," *The New York Times*, February 15, 1988.

¹⁴ Alan Riding, "Brazil's Reversal of Debt Strategy," *The New York Times*, February 22, 1988.

¹⁵ Lawrence J. Brainard argues that Brazil's moratorium had this effect (1988, pp. 41-42).

at least less profitable than genuine bargaining.¹⁶ For creditors, too, compromise is generally preferable to declarations of default. The willingness of creditors to bargain is clear; they have not declared defaults even for borrowers with substantial arrears and confrontational postures.

The bargaining position of U.S. commercial banks has strengthened since the onset of the debt crisis, in that much smaller percentages of their assets and capital are accounted for by loans to heavily indebted developing countries. Loans to these countries from all U.S. banks amounted to 129 percent of bank capital at the end of 1982, but had been reduced to 54 percent of bank capital by September 1988. For the nine money center banks, the corresponding percentages were 193 and 96 (table 14). As a consequence, the banks were under less pressure to "throw good money after bad," a matter taken up in the next section.

The Issue of Debt Relief

While the commercial banks have not issued declarations of default, neither have they announced forgiveness of outstanding debts. Yet some measure of forgiveness might be in their own self-interest.

It is well known that at times it can be in the interest of a creditor to "throw good money after bad." Suppose a new firm borrows \$500,000 to finance the purchase of machinery with which to manufacture an established product.¹⁷ Suppose that a new health or safety standard is then promulgated, rendering the output of the machinery unsalable and confronting the new firm with bankruptcy. Assume that for \$100,000 the machinery could be modified to manufacture a product that satisfied the new health or safety standard, and that the return would not only repay the added \$100,000 with interest, but nearly all of the original \$500,000 investment. In this case, the lender would be foolhardy not to throw good money after bad, especially since the firm, if surviving, might manage eventually to repay all funds borrowed.

This kind of thinking played an important role in the immediate aftermath of the 1982 Mexican debt crisis. Developing countries that could not meet their interest payments received new loans from their creditor banks in the hope that adjustment programs facilitated by the new loans would enable the repayment of most, if not all, of the outstanding debt. In Cline's terminology, rational creditors "will provide additional new loans as long as (a) the reduction in the probability

¹⁶ Bolivia may be an exception. See Sachs (1988b, pp. 29-32).

¹⁷ To keep things (overly) simple, assume that \$500,000 is the full cost of the machinery. (History suggests that lenders can sometimes be imprudent.)

Table 14
U.S. Bank Claims on Developing Countries, 1980–88

End of Period	All U.S. Banks with Significant Foreign Banking Operations						Nine Money Center Banks					
	Billions of Dollars		As Percent of				Billions of Dollars		As Percent of			
			Total Bank Assets		Total Bank Capital ^a				Total Bank Assets		Total Bank Capital ^a	
	All Developing Countries	Heavily Indebted Countries	All Developing Countries	Heavily Indebted Countries	All Developing Countries	Heavily Indebted Countries	All Developing Countries	Heavily Indebted Countries	All Developing Countries	Heavily Indebted Countries	All Developing Countries	Heavily Indebted Countries
1980	96.8	67.5	9.1	n.a.	169.8	n.a.	63.5	n.a.	12.0	n.a.	264.6	n.a.
1981	115.8	81.5	9.9	n.a.	184.7	n.a.	74.0	n.a.	13.1	n.a.	283.5	n.a.
1982	128.3	91.1	10.2	7.2	181.7	129.0	82.0	55.9	13.9	9.5	282.8	192.8
1983	132.9	94.2	9.9	7.1	167.6	118.8	84.7	57.8	14.6	9.9	268.9	183.5
1984	129.9	95.4	9.2	6.8	140.9	103.5	83.8	60.0	14.2	10.2	228.3	163.5
1985	119.0	90.5	7.8	5.9	112.9	85.9	78.3	58.9	12.6	9.5	185.1	139.2
1986	108.6	86.2	6.7	5.3	93.5	74.2	71.7	56.4	11.2	8.8	153.5	120.8
1987	100.2	81.7	6.1	5.0	77.6	63.2	67.1	54.6	10.7	8.7	130.3	106.0
Sept. 1988	88.9	73.6	5.3	4.4	65.4	54.2	61.9	51.8	9.9	8.3	114.2	95.6

Note: Data are for domestic and foreign offices of the banking organizations and cover only cross-border and nonlocal currency lending.

^a Capital includes equity, debentures, and reserves for loan losses.

n.a.: not available.

Source: Board of Governors of the Federal Reserve System, "Country Exposure Lending Survey," Statistical Release E.16 (126), various issues.

of country default thereby achieved, *multiplied by* previously outstanding loans, *exceeds* (b) the terminal probability of default (after the new loans) as *multiplied by* the amount of the new loans" (Cline 1984, p. 72). Lending motivated by such a calculus was "forced," or "involuntary," or "defensive," in the sense that it would not have occurred if the lenders had held no previously outstanding claims on the debtors.

The volume of new lending to the heavily indebted countries was not sustained for long, however. The Baker Plan called for \$20 billion in new loans from commercial banks over the three years ending with 1988, a target that is not being attained. Apparently, additional lending, as evaluated by the banks, did not satisfy Cline's criterion. The figure suggests the reason; deepening and then large discounts in the secondary market implied that new loans had failed to raise the value of those previously outstanding, and banks no doubt assumed that additional new loans would have a market value well below their book value.

It is a short step to ask whether it could be in the interest of creditors not to extend additional loans but to forgive some of the loans outstanding, or to extend equivalent concessions. The step is short because defensive lending itself contains a concessionary element, namely, the expected loss on the new lending (element (b) in Cline's formula). The case for partial forgiveness, then, is an elaboration of the case for defensive lending.

In the machinery example, the firm might be reluctant to modify and operate the equipment in exchange merely for the additional \$100,000 loan, perhaps preferring termination to the prospect of operation with no net profit. But if the lender were willing to share the gain from the additional loan and modifications, the firm might respond positively. Forgiving part of the loans would be one form of sharing by the lender. Having shared in the borrower's current ill-fortune, however, the lender might insist on sharing in any future good fortune, such as a *cost-reducing* change in regulatory standards. Thus, pure loan forgiveness would not be so attractive from the lender's standpoint as making repayment of part of the loan contingent upon future good fortune.

This crude example introduces the key issues raised by recent theorizing concerning the effects of debt forgiveness on the incentives for borrowers to repay.¹⁸ In general, a debtor country can, through adjustment effort in the present (such as curtailing consumption in favor of investment), augment its output that will be available in the future for debt service or for domestic absorption. As Corden has elegantly demonstrated, debt forgiveness, in the proper circumstances and the proper dosage, can make both borrowers and lenders better off (Corden

¹⁸ See especially Corden (1988), Krugman (1988), and Sachs (1988a).

1988). For this result to hold, so large a share of any future increase in the debtor's output—an increase gained from reducing current consumption—must be destined for debt service (in the absence of forgiveness) as to discourage the borrower from cutting back further on current consumption. In these circumstances, a measure of forgiveness, allowing the country to retain more of future output increases, could provide the requisite incentive for an adjustment effort that would generate extra output sufficient to meet much of the original debt-service obligation.

Once forgiveness had been declared, it could be rendered unnecessary by a favorable change in the debtor's environment, such as a reduction in world interest rates or an improvement in the debtor's terms of trade. In principle, then, forgiveness should be linked to the nonoccurrence of such favorable developments, and withheld if they occur. To grant this point, however, is to compromise the case for forgiveness. Reschedulings—or at least retention of the original claims—seem preferable as long as any prospective change in the debtor's circumstances might allow eventual repayment in full. The problem, as always, is foretelling the future.

Moreover, as a general rule, commercial banks have shown little inclination to bear the risks of changes in the environment. Exhibit A is their growing reliance over the years on variable rather than fixed rates on their loans to developing countries.¹⁹ Clearly, the banks have preferred that the borrowers bear the risks of changes in interest rates.

How to deal with such environmental changes is not the only obstacle to implementing forgiveness in an efficient way, so as to improve the welfare of both lenders and borrowers. To predict the debtor country's response to forgiveness—to ensure that forgiveness enhances rather than diminishes adjustment effort—one must estimate the country's marginal efficiency of investment (or, more broadly, the marginal efficiency of adjustment effort) and the country's intertemporal utility function, as well as the minimum level of absorption that the country will accept (given its range of prospective output). Preparing accurate estimates of these parameters would require a certain sagacity. To be sure, essentially the same parameters had to be evaluated, at least implicitly, by creditors at the time the currently outstanding loans were committed, but the current status of the loans forcefully testifies to the difficulty of the undertaking.

Given the difficulties of ensuring that forgiveness will be efficient, it is not surprising that forgiveness thus far has been reserved for the "basket cases," for cases where it is generally agreed that per capita income is extraordinarily low, the marginal efficiency of investment is

¹⁹ The World Bank (1988a, p. 3), presents data on the rising share of variable rate debt in public debt of the developing countries.

negligible, and nonpayment of debt service is fully attributable to “inability” rather than “unwillingness” to pay.²⁰ Thus, in practice, whether to forgive becomes more nearly a structural than a marginal calculation.

The Puzzle of Pre-Crisis Lending

One of the puzzles about lending to the heavily indebted countries is why such a large volume of loans was extended in the first place. At the time—before 1982—the lending was justified, or at least rationalized, on several plausible grounds. The losses experienced by banks on international loans had been proportionately lower than on domestic loans. Many developing countries had compiled much better economic growth records than the industrial countries had, and the officially published indicators of developing country creditworthiness had not been flashing red, at least not for long and not uniformly.

What is puzzling is that these favorable considerations should have so heavily outweighed the costs and risks peculiar to international lending. Among the deterrents are the difficulty and expense of acquiring information about proposed foreign investments, and also varied political risks, such as the relatively high uncertainty of recovering on defaulted foreign obligations through legal proceedings. As pointed out by this writer as early as 1971, these deterrents imply that international capital flows should fall short of, rather than exceed, the optimal levels (Fieleke 1971, pp. 18–20).

One way to discourage excessive bank exposure in the future is to raise bank capital requirements, an action in fact recently taken. Another precautionary measure would be to promote the use of seniority clauses in future loan contracts. Fewer loans might have been made to the developing countries during the years immediately preceding the debt crisis had those loans been subordinated to ones already outstanding.²¹

Conclusion

The debt crisis has elicited a sizable balance-of-payments adjustment in the 15 heavily indebted developing countries. The adjustment, however, was concentrated—at least in quantitative terms—in the years

²⁰ Not all the impediments to efficient forgiveness are reviewed here. Others include the problems of moral hazard and free riders.

²¹ To give practical force to seniority might be difficult; see Bulow and Rogoff (1988, p. 16).

immediately following the onset of the crisis, and might have been more efficient if executed more gradually. Associated with the adjustment were reductions in import volumes and absorption in most countries. GNP growth has typically been minimal, and GNP growth rates across countries are uncorrelated with balance-of-payments adjustment in real terms. The burden of restraining absorption has fallen primarily on gross domestic investment; this is not to say that greater investment would necessarily have been productive. For about half of the countries, the difficulty of the adjustment has been compounded by an adverse shift in the terms of trade.

In spite of the adjustment that has occurred, the creditworthiness of the heavily indebted countries, as evaluated by conventional indexes, has not improved. Nor has economic growth per capita been resumed. Several hypotheses for the failure of growth to accompany adjustment have been set forth in this paper.

Notwithstanding their economic straits, the heavily indebted countries generally continue to pay interest on their indebtedness. A regression analysis suggests that these interest payments are positively related to export receipts (as a fraction of GNP). Debtors continue to service their debts not only for the sake of future creditworthiness, but to avoid disruption of trade and other penalties.

In theory, partial forgiveness of indebtedness can sometimes be in the interest of the lender as well as the borrower. In practice, it is hard to know when the conditions for this mutually rewarding outcome are satisfied. Thus, forgiveness is rare.

Theory also suggests that international capital movements should generally fall short of, rather than exceed, the optimum, yet the opposite seems to have been true for the heavily indebted countries before 1982. Perhaps greater use of seniority clauses in loan contracts could help to dampen herd instincts in the future.

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Discussion

*Ariel Buira**

Norman Fieleke has provided us with a rich and thoughtful study as well as a wealth of important statistical analyses of the adjustment process in heavily indebted developing countries over the past six years. While I find myself in agreement with the thrust of his paper, a number of points merit some discussion from a debtor's perspective.

I would like to center my comments on four broad areas dealt with in the paper:

- (1) why growth has not accompanied adjustment in heavily indebted countries;
- (2) the characteristics of the adjustment process in these countries;
- (3) the issue of their creditworthiness; and
- (4) future economic growth, debt service and debt relief.

Fieleke puts forward several hypotheses to explain why growth-cum-adjustment has failed to materialize. I would view the failure of the strategy of adjustment with growth in a broad perspective: the conditions considered essential to make this strategy viable have not been fulfilled.

As was widely publicized following the statement of Secretary Baker before the Annual Meetings of the International Monetary Fund (IMF) and the World Bank in Seoul in October 1985, the attainment of adjustment with growth in heavily indebted countries rested on four assumptions:

- (1) economic adjustment and structural change in debtor nations;

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- (2) healthy growth of the world economy;
- (3) adequate banking flows to the debtor countries; and
- (4) greater involvement of multilateral institutions in financing and structural change in these nations.

A number of debtor countries have fulfilled the role they were supposed to play in the strategy of adjustment with growth. The ratio of the government budget deficit to GNP in many highly indebted countries has fallen significantly.¹ Important progress has also been made in the process of structural change through trade liberalization, the removal of price controls, and streamlining and privatization of public enterprises. Another indicator of the magnitude of efforts made is the sharp depreciation of these countries' real effective exchange rates and the reduction of their consumption and import levels.

Nevertheless, it is now apparent that adjustment with growth cannot be attained in the absence of the other elements of the strategy. Both the evolution of the world economy and the volume of financial flows have shown a behavior inconsistent with adjustment with growth in debtor nations. Although economic growth in the industrial countries has been satisfactory, the terms of trade of heavily indebted countries have fallen to unprecedented levels and, for many, continue to decline. This point bears some elaboration, since on the basis of statistics in the IMF's latest *World Economic Outlook*, the loss of purchasing power of the exports of the 15 highly indebted countries can be estimated at \$120 billion over the period 1981–87, an amount equivalent to 25 percent of their external debt. In addition, protectionism has increased, real interest rates continue to be high and show an upward trend, and the net transfer of resources from the commercial banks and multilateral institutions as a group to the heavily indebted countries remains negative.

Given the unfavorable external environment, adjustment in these nations has relied excessively on the contraction of domestic spending, adversely affecting investment levels and development potential. Thus, instead of adjustment with growth, debtor nations have followed an arduous path of adjustment with recession.

The results of the policies adopted have been mixed. On the one hand, a collapse of the international financial system has been avoided and commercial banks have gained time to strengthen their capital base.

¹ For instance, a recent IMF study reports that between 1981 and 1987 the fiscal deficit of Argentina fell from 16.4 percent of GDP to 9 percent; that of the Ivory Coast from 11.6 percent to 7.5 percent, and that of the Philippines from 5.5 percent to 3.2 percent. In addition, the operational balance in Mexico recorded a surplus of 2 percent of GDP in 1987 after having shown a deficit of more than 10 percent of GDP in 1981, while that of Brazil fell from 5.9 percent to 5.5 percent of GDP in the same period. See International Monetary Fund, *Issues in Managing the Debt Situation*, EBS/88/159, August 1988.

But, on the other, debtor countries have not been able either to restore creditworthiness or to resume economic growth.

Let me now briefly turn to the characteristics of the adjustment process in the heavily indebted countries. Fieleke notes that the dynamics of adjustment in these nations seem both suboptimal and halting, and he concludes that aggregate adjustment may virtually have stalled. To me this seems the natural result of the transfer problem, given the low ratio of imports to total demand, coupled with adjustment without financing. Adjustment through the contraction of demand has a limit, at least politically, especially if you take into account the adverse evolution of the terms of trade, adjusted for interest rates, which have largely offset the adjustment efforts of many debtor countries and obstructed the structural transformation of their economies. As a result, for many countries the 1980s are the lost decade, in which they lost the gains achieved in two previous decades of development. The presence of debt fatigue under these circumstances should not be surprising.

One cannot but agree with Fieleke that economic adjustment might have been more efficient if executed more gradually. However, when liquidity dries up there is no choice. The adjustment process was often abrupt, not because of an unconstrained choice by the debtor countries, but as a result of the unavailability of net financing. From this perspective, Fieleke's search for ways to diminish bank exposure to debtor nations in the future would seem far from what is required.

I cannot help feeling that the difficulties of the task of adjustment for heavily indebted countries were underestimated in 1982 and 1985. One simply has to pay regard to the limitations imposed by the external debt itself on the adjustment process and to the inherent conflict that exists between depreciation and stabilization. Recall that in a number of countries, interest payments on the external debt account for a large share of domestic savings and of the public deficit. Thus, stabilization policies often fail, as the sharp depreciation of the real exchange rate that is required to generate trade balance surpluses in order to service the external debt also accelerates inflation: this forces domestic interest rates up, thereby further increasing pressures on the fiscal deficit.

It took time for us to recognize the heavy fiscal burden that external debt obligations represent for debtor countries. Since most of the debt is public, governments of debtor countries face the problem of extracting resources from the private sector in order to effect the transfer abroad implied by debt service. The difficulties of this process often lead to high rates of inflation. Also, the crowding out of private investment by government deficits is closely linked to the need to comply with external debt service. Indeed, with adequate flows from abroad to finance fiscal deficits, such crowding out need not take place and adjustment with growth becomes possible.

With respect to exports, Fieleke raises the question whether the export effort has been sufficient. Whatever the answer, allow me to make some observations. If exports are to be more than the mere sale of domestic surplus production or of the use of spare capacity because the domestic market is depressed, new investment is needed to shift resources towards the production of tradeables. However, the investment required for this reallocation of resources is not likely to be forthcoming in a situation of crisis and instability, where perceived uncertainties and risks are large and call for high risk premiums.

Several components contribute to the atmosphere of uncertainty. On the domestic side, these relate to questions such as the *credibility* of government policies and their *permanence*—not just fiscal policy, but also policies such as trade liberalization and real exchange rates. Doubts often reflect past responses to balance of payments crises. Political considerations such as the approach of elections and their results also give rise to uncertainty. The high level and variability of real interest rates, often in excess of 20 percent per annum, discourage investment.

On the external side, the persistent atmosphere of crisis arises from the “short leash” and “muddling through” approach to the debt problem on the part of creditors. For years, protracted program negotiations with the Fund, the World Bank and with commercial banks have taken place annually, with questions as to whether the next quarterly targets will be met. These make for an atmosphere of “wait and see.”

Additional uncertainties relate not only to terms of trade, interest rates and exchange rates but, more importantly, to protectionism. The latest World Bank *President's Report to the Development Committee* is particularly clarifying in this connection.² It states that protectionism has increased in coverage and intensity in developed countries during the 1980s, particularly through nontariff barriers; these, according to the report, cover roughly one-third of developed country imports of manufactures from major developing country exporters. The report stresses that protectionism in the industrial countries has been chiefly aimed at the industrially more advanced LDCs. Thus, an expansion of the volume of exports by heavily indebted countries that is slightly below that recorded by world trade can hardly be surprising. Allow me to recall: OECD subsidies to agriculture amount to \$185 billion per year. Secondly, note that measured in value terms, Mexico's exports increased 33 percent over the period 1980–87; however, in volume terms, the increase was a staggering 108 percent, which speaks of the effort made. The terms of trade loss for Mexico is estimated at \$57 billion over this period (or \$30 billion in the period 1982–87).

² See International Bank for Reconstruction and Development, *President's Report to the Development Committee*, August 4, 1988.

Let us now turn to the issue of creditworthiness. Fieleke's warnings on the usefulness of certain debt indicators in order to measure creditworthiness are well taken. It is to be hoped that commercial bankers will be aware of these caveats when the recent improvement in debt service ratios of LDCs is incorrectly used as an argument to claim an increase in their capacity to service the external debt.

Among the range of indicators available to try to assess a debtor country's creditworthiness, two are stressed in Fieleke's paper: capital flight and the secondary market valuation of developing country debt. I would like to stress that even if the government of an indebted country follows "correct" macroeconomic policies, capital flight might take place, since investors recognize that, given the existence of a debt overhang, financial assets remain vulnerable to taxation through inflation and through the depreciation of the exchange rate. Thus, the public's perception of the ability of the government to service the external debt in the face of adverse developments in, say, external interest rates, oil export prices and prospects for economic activity in the United States may be an important determinant of capital flight. Alternatively, the retention of savings may require extremely high real rates of interest with adverse consequences for government finances. In other words, capital flight in some countries may in fact be a result of the uncertainties associated with the external environment and the debt burden.

Consider now the secondary market price of developing country loans. While it must be recognized that the evolution of prices in the secondary markets reflects to some extent the market's perception of creditworthiness of debtor countries, other factors enter into play. For instance, during 1987 the prices on claims of most major debtors dropped sharply after the decision taken by major U.S. banks to set aside reserves against potential loan losses, despite the fact that underlying economic conditions and therefore creditworthiness were improving in several of these nations. The reasoning behind this behavior seems to lie in the fact that the increase in banks' reserves was perceived as a signal of a greater bank reluctance to lend new money to debtor countries. Since bank loans had been used to cover debt service in the past, when it was feared that no new funds would be forthcoming, the price of LDCs' debt in the secondary market immediately fell.

Consider next a major question the paper does not raise directly: Is it possible, in the current economic environment, for the heavily indebted countries to grow at adequate levels and at the same time pay full debt service? I would like to probe deeper into this question by assessing the prospects faced by Mexico, a country that has been praised by the international community as a "model" of economic adjustment.

Indeed, over the past six years Mexico has made impressive progress in both adjustment and structural change. Particularly impor-

tant has been the strengthening of public finances. The primary fiscal deficit, which computes the difference between public sector revenues and expenditures excluding interest payments, turned from a deficit of 8 percent of GDP in 1981 to a surplus of 4.9 percent in 1987. An even greater surplus (7 percent of GDP) is expected for 1988, an adjustment of 15 percent of GDP. Accordingly, the current account switched from a deficit of 6.5 percent of GDP in 1981 to a surplus of 2.7 percent in 1987.

Substantial advances have been achieved in other areas as well. Thus, inflation, as measured by the consumer price index, decreased from an annualized rate of 424 percent in December 1987 to under 10 percent in September 1988. The economy has gone through an unprecedented process of import liberalization, whereby most quantitative restrictions have been eliminated and the average tariff has been reduced to only 6.5 percent. Exports have been diversified: while in 1982 oil accounted for nearly 80 percent of merchandise exports, as of June 1988 the share of non-oil exports in the total reached 68 percent. Moreover, the number of public enterprises has been more than halved, from 1,155 at the end of 1982 to 449 by mid-1988.

Economic adjustment in Mexico has coexisted with a huge net transfer of resources abroad, equivalent to more than 6 percent of GDP over the period 1982–87. Partly due to this situation, the measures adopted have emphasized the contraction of domestic expenditure (which necessarily exceeds the transfer itself) and in particular of investment. Over the past six years public investment fell from 10.2 percent of GDP in 1982 to 5.5 percent in 1987.

In this context, annual GDP growth in Mexico, which had averaged close to 7 percent in the 1960s and 1970s, decreased to -0.2 percent in the period 1982–87. In the 10-year period from 1977 to 1987, real average wages in the manufacturing sector dropped by some 30 percent in real terms and minimum wages by nearly 50 percent. The real levels of per capita imports and investment in Mexico in 1987 were as low as those prevailing in the seventies, while real per capita consumption decreased to the levels of a decade ago. These are all major adjustments greater than seemed possible six years ago.

Nevertheless, the efforts carried out have not been enough to restore creditworthiness. Negotiations with foreign creditors have allowed an extension of maturities and a decrease in margins over base rates. Partly as a result of this, the debt service ratio diminished from 62 percent in 1982 to 42 percent in 1987. But, during the same period, the ratio of external debt to exports rose from 310 percent to 340 percent, while the size of the debt in relation to GDP increased from 51 percent to 74 percent despite no net use of foreign credit.

Although adjustment and structural change have taken place, the prospects for resuming adequate and sustained rates of economic growth are uncertain. In particular, it is doubtful that the net transfer of

resources implicit in the present levels of debt service will allow the financing of a needed expansion of investment.

Exploring the viability of combining adequate rates of growth with full debt service payments is not an easy endeavor. However, the comparison of the investment requirements for resuming growth with the availability of domestic and external resources for this purpose provides some useful insights.

Mexico's labor force will grow at a rate of about 3.2 percent a year during the next five to six years. With an income elasticity of the demand for labor of around 0.6, the minimum GDP growth required to absorb the yearly increase in the labor force would be slightly over 5 percent. Assuming that the structural changes mentioned above will increase considerably the efficiency of investment compared to the historical standards of the last decade, the economy will need an investment/GDP ratio of at least 19.5 percent to sustain a 5 percent GDP growth rate. It must be noted that during the 1960s and 1970s the investment share of GDP amounted to an average of 23.6 percent.

Currently, despite the fall in real per capita incomes, domestic savings stand at around 16 percent of GDP. This leaves little leeway for a rapid mobilization of internal resources. Consequently, to finance an I/GDP ratio of 19.5 percent, external savings would have to amount to some 3.5 percent of GDP if economic growth is to attain an annual rate of 5 percent.

Under optimistic assumptions for the behavior of domestic and external variables, Mexico would require five to six billion dollars in new financing from the commercial banks to meet external debt service and balance the external accounts in this scenario, in addition to all other financing from direct foreign investment and multilateral and bilateral sources. This figure evidently does not mesh with the lending plans of commercial banks. It would be farfetched to think that Mexico could raise the above-mentioned amount year after year in the voluntary credit markets.

Consequently, despite enormous adjustment efforts and the structural change undergone, Mexico's medium-term prospects remain poor. Unless debt service can be reduced, with limited new financing forthcoming the debt burden will translate into low investment levels, low growth, rising unemployment and speculative capital movements for the coming years.

Obviously, the situation is even more somber in most other heavily indebted countries. Under such circumstances, the limitations of the present debt strategy seem evident and the need for debt relief acquires crucial importance. Creditor governments and international organizations must support market-oriented debt reduction schemes linked to programs of economic reform in debtor nations, if the debt problem is to be overcome.

We must all understand that this problem goes beyond the economic and financial areas. Without tangible benefits, the persistence of adjustment efforts in debtor countries faces mounting political resistance. Debtor country governments may be tempted or compelled to turn to populist policies in response to the population's frustration with lower living standards, unemployment and stagnation. In that event, the adverse implications of the debt crisis for debtors, creditors and in general for the world economy will be substantially accentuated.

Discussion

J. David Richardson*

Norman Fieleke presents an attractive summary of the macroeconomic adjustment experience of the "Baker 15" countries since 1982. It is especially attractive in the cross-country comparisons that highlight several important generalizations. (1) The first two years' adjustment by these 15 countries accounted for nearly all of their increases in net exports. In only a few cases do we see further success beyond that of the first two years. (2) Those countries with the fastest rates of GNP growth among the 15 were no more successful at increasing net exports than others. (3) Nor were countries that early swallowed the bitter pill of abnormally deep recession any more successful. (4) Investment spending bore the heaviest downward adjustment among the Baker 15, consumption spending the lightest, with government spending in between.

I will focus my comments on the macroeconomic adjustment questions that occupy the greatest part of Fieleke's paper. I was surprised and instructed by several of his conclusions, but felt the author could have instructed me even more. For example, the perspective of the traditional transfer problem appears relevant here. The most recent World Bank *World Development Report* reveals that middle-income debtor countries transferred nearly 100 billion real dollars' worth of capital back to creditor countries between 1982 and 1987. In 1982, sizable inward transfers to the Baker 15 did not merely dry up, they were reversed. The transfer perspective helps, then, to explain why the macroeconomic impetus was recessionary in debtor countries, and why however much income might decline, aggregate purchasing power—the

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standard of living—had to decline *more* in order to transform trade-deficit transferees into trade-surplus transferors. Since real depreciation of its currency is an expected (albeit not necessary) part of the adjustment of a transferor, the decline of the Baker 15's terms of trade between 1982 and 1987 is not simply more bad luck, but an essentially endogenous adjustment mechanism.¹ It too reduces aggregate purchasing power.

Moreover, I have always been surprised that commentators underplay the very sizable real capital loss that debtor countries bore at the beginning of the 1980s, a balance-sheet loss of real national wealth that independently compressed purchasing power and precipitated the 1982 crisis and ensuing adjustment. The source of the real capital loss is simple and familiar: capital formation that appeared profitable at the *expected* real interest rates of the early 1980s turned out to be quite unprofitable at the *realized* real interest rates. The realized real interest rate over the period 1981–82 was fully 10 percentage points higher than the expected real interest rate, if we use the inflation forecast of the January 1981 *Economic Report of the President* to calculate “expected,” and the actual inflation rate to calculate “realized”: 23 percent inflation expected over the two-year span versus 13 percent actual.

The real capital loss and transfer perspective help explain both the dramatic improvement in the trade balance of the Baker 15 and the equally dramatic decline in their standards of living and terms of trade. But they do not explain the peculiar mix of trade-balance improvement; much more import compression occurred than had been expected, and much less export expansion (zero in value terms, as the paper shows).

I believe that the growth of protectionism in creditor countries is the key to this puzzle. Not that the Baker 15 were unfairly singled out to bear the protectionist burden—table 1 suggests that export growth rates of many developing countries, including Asian exporters, dropped nearly 10 percentage points below the 1970–87 trend in the sub-period from 1982 to 1987. For the fastest growing exporters, however, this meant a decline from extraordinary to high export growth (20 percent per year to 10 percent); for the Baker 15 it meant the extinction of high export growth (12 percent to 2). Table 2 tries to document further that the Baker 15 were victimized by indiscriminate protectionism in the face of their commendable but less-than-stellar export growth to start with, and not by any vendetta of protectionism against them alone. Unfair trade orders and initiatives increased in the United States more than threefold between 1983 and 1987 against *both* the Baker 15 and the fastest-growing developing-country exporters.

¹ This is one reason why I don't find very revealing the author's counterfactual simulations at fixed terms of trade toward the end of the first part of his paper.

Table 1
Average Annual Change in f.o.b. Exports, Selected Debtor and Developing Countries
Percent

	(1) 1970-87	(2) 1982-87	(3) Percentage Point Difference (2)-(1)
Nine Problem Debtors from "Baker 15"^a			
Mexico	17.2	-3	-17.5
Ecuador	14.9	-1.0	-15.9
Brazil	14.2	5.4	-8.8
Yugoslavia	11.9	2.1	-9.8
Colombia	11.5	8.7	-2.8
Nigeria	10.7	-10.5	-21.2
Morocco	10.6	5.5	-5.1
Philippines	10.4	2.5	-7.9
Uruguay	10.1	3.1	-7.0
Unweighted Average	12.4	1.7	-10.7
Comparison Group of Nine Fastest-Growing Developing-Country Exporters^b			
Korea	26.8	16.7	-10.1
Taiwan	23.5	19.2	-4.3
Hong Kong	19.0	18.2	-8
Singapore	18.7	6.7	-12.0
Turkey	18.3	12.1	-6.2
China	18.2	12.6	-5.6
Thailand	17.9	10.9	-7.0
Indonesia	17.2	-5.8	-23.0
Tunisia	15.6	1.5	-14.1
Unweighted Average	19.5	10.2	-9.3

^a Only these nine "Baker 15" countries were tabulated in the source below.

^b The nine developing countries with fastest growing exports from 1970 to 1987, as tabulated in the source below.

Source: General Agreement on Tariffs and Trade, *International Trade 1987/88*, Table 13.

The author might also have expanded on the foreboding dynamics of the incidence of decreased living standards. The Baker 15 are collectively eating their seed corn, as shown by the particularly large declines in investment and in government spending (at least some of which is for maintenance and expansion of productive infrastructure). Spending on education and on structural adaptation (retooling, retraining, and the like) might show the same depressing decline if such data could be distilled from the more familiar aggregates. This is takeoff in reverse, a crash in a no-growth (negative in per capita terms) valley in which aggregate poverty leads to underinvestment which leads to the

Table 2
Unfair Trade Initiatives in the United States, 1983 and 1987

	Anti-Dumping Cases at End of Year ^a	Countervailing Duty Cases at End of Year ^b	Section 301 Cases during Year ^c
Nine Problem Debtors from "Baker 15" ^d			
1983	6	4	2
1987	23	15	4
Comparison Group of Nine Fastest-Growing Developing-Country Exporters ^d			
1983	0	8	4
1987	10	34	0

^a Anti-dumping orders and findings in effect as of December 31, 1983 or 1987, without regard to effective date of original action.

^b Countervailing duty orders and findings in effect as of December 31, 1983 or 1987, without regard to effective date of original action.

^c Section 301 petitions filed during 1983 or 1987.

^d Same nine countries as in table 1.

Source: U.S. International Trade Commission, *Operation of the Trade Agreements Program, 35th Report, 1983* (June 1984), pp. 350-51, 358-59, 367-72, and *39th Report, 1987* (July 1988), pp. 5-8 and 5-9, B-27 and B-28, and B-31 and B-32.

perpetuation of aggregate poverty, and so on—the damning dynamics of the “underclass” writ large.

The heavy decline in government spending and in elements of investment, such as construction and imports of capital goods, is due in part to natural movements in relative prices in the adjustment process. Tradables prices almost certainly must rise relative to nontradables, because output must be squeezed out of government and other nontradables sectors and into exports and import substitutes. I find it insightful to remember that the most natural adjustment process for the Baker 15 establishes a new price hierarchy. It leaves nontradables prices, including most wages and salaries, lower than normal and lower than tradables prices within the Baker 15. But tradables prices within the Baker 15 must end up lower than world tradables prices in order to generate the needed improvement in the trade balance. The first and last elements in the hierarchy joined together show once again why standards of living (the command of Baker 15 incomes over the world's goods) must fall if capital is being transferred back to creditor countries, and must certainly fall relative to the heady days of inward transfer.

As a final point I would like to commend the author for his regression approach to the experience of the Baker 15. For purposes of generalizing and making comparisons across countries, a regression is a useful tool, more akin to a multi-dimensional cross-tabulation than a

causal analysis. It allows estimates of correlations between pairs of variables (for example, rates of GNP growth and improvement in the trade balance) conditional on the correlations between other variables that have interest and influence. The author gives us the beginnings of a very nice potential longitudinal study of the Baker 15—to be supplemented, I would suggest, by a sample of more successful debtors (Colombia, Indonesia, Korea, Thailand, Turkey?) to alleviate sampling biases. Fifteen to 20 countries tracked over roughly 20 years is a reasonably rich panel of data from which to begin drawing quantitative inferences and generalizations. I hope the author proceeds to do so, and I will look forward to the result.