International Indebtedness
Interest Rates and Inflation

1. According to World Bank statistics, at the end of 1978 the international indebtedness of developing countries had risen to nearly 350 billion dollars. It is safe to say that by now, in the middle of 1981, it may be over 500 billion dollars. The servicing of this debt must amount to something like 70 billion dollars a year. These few figures are enough to indicate the problem in all its gravity. But I am not concerned here with the figures, which are widely known. I wish to examine only certain theoretical aspects of the problem. To be more precise, I wish to explore the inter-relation between international indebtedness (but the analysis may also be applied to domestic indebtedness), interest rates and inflation, with the object of showing that high indebtedness is a by-product of interest rates higher than the gross return on capital employed, and inflation is one of the two alternatives to which this condition must necessarily lead, the other being a worldwide deflationary crisis of the 1929 type.

2. One of the things that puzzles me most is why, in economic analysis, the rate of interest is considered only as an instrument to regulate the amount of credit and never as a factor producing money flows. In fact, the interest rate applied to existing indebtedness produces a flow of money from the debtor to the creditor equal to the product of the existing indebtedness times the rate of interest, and this constitutes one of the most important economic phenomena in a capitalistic economy.

In order to relate our analysis specifically to the subject of international indebtedness, let us define:

D_n = average amount of the foreign indebtedness of a given country in the year n;

i_n = average rate of interest applied to the debt D_n.

Then the amount of interest, I, paid by the debtor country in the year n is:

$$(1) \qquad\qquad I_n = D_n \, i_n$$

During the same year n, however, the country, besides paying interest on the outstanding indebtedness, will repay some of the capital and presumably will also be borrowing new sums from abroad. Defining:

R_n = reimbursement of old debts effected during the year n;

C_n = new gross borrowing during the year n,

the difference $C_n - R_n$ is the net new borrowing, or the net indebtedness increase, in the year n. Calling this net new borrowing during the year n, B_n, and assuming, in order to simplify the analysis, that new borrowings and repayments of old debts are spread evenly through the year, we also have:

$$(2) \qquad\qquad D_n = D_{n-1} + B_n$$

By combining (1) and (2), we have the following set of equations describing the flow of interest payments from debtor to creditor in successive years:

$$I_0 = D_0 \, i_0$$
$$I_1 = (D_0 + B_1) \, i_1$$
$$I_2 = (D_0 + B_1 + B_2) \, i_2$$
$$\cdots\cdots$$
$$I_n = (D_0 + B_1 + B_2 + \dots B_n) \, i_n$$

3. Now let us ask ourselves the question: where do these money flows come from? From what source are they fed? They should come out of the income produced by the use of the borrowed sums. They should be part of the gross profit resulting from the investment of the borrowed capital, including any reinvested profits and any related losses.

Calling G_n the average amount of the cumulative investment in the year n, i.e. resulting from the employment, over the years, of the borrowed sums which constitute the indebtedness D_n plus any accu-

mulated reinvested profits or losses, and r_n the average gross rate of return on said investment (i.e. after deduction of all expenses, but before the payment of interest) the total gross return Y_n obtained from the investment in the year n will be:

$$(3) \qquad\qquad Y_n = G_n \, r_n$$

If we assume that all the borrowed sums and all the net profits are forthwith invested, the relationship between G_n valued at cost and D_n is the following:

$$(4) \qquad\qquad G_n = D_n + \sum_{n=0}^{n=n} P_n$$

where $P_n = Y_n - I_n$ is the net profit or, if negative, the net loss, obtained in the year n from the investments made from the borrowed sums.

For the debtor country to be able to pay interest on its indebtedness, we must obviously have:

$$P_n = Y_n - I_n \geqslant 0$$

and hence, taking into account (1), (3) and (4):

$$r_n \geqslant \frac{D_n}{D_n + \sum\limits_{n=0}^{n=n} P_n} \, i_n$$

As long as this condition is met, everything is all right. The debtor country can not only pay interest on its indebtedness, and repay the capital, but can also obtain a net profit which can be reinvested, together with the new net borrowings. But, if the gross return on investments made from borrowing is smaller than the required interest payments, then the debtor is in trouble, and so indeed is the creditor who sees his credit in jeopardy.[1]

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[1] It would seem, at first sight, that the problem would arise even if the gross return on investments is higher than interest payments, but the income is entirely consumed within the debtor country. And, conversely, that a gross return on investment lower than interest payments, constitutes no problem if the borrowing country reduces its internal consumption so as to be able to service the debt. But the two cases are really different. When the investment return is higher than interest payments, the debtor country, while increasing its indebtedness, at the same time grows richer, or potentially richer. And — always on the hypothesis that the return on investment is higher than the interest — whenever the debtor country decides to stop borrowing, it can do so and still be able to continue to pay interest on the old debt and repay the capital as it becomes due. But, when the gross return on investment is lower than interest payments, the reduction of internal consumption clearly cannot go beyond a certain limit: once this limit is reached, the debtor country either must default, or, in order to be able to service the old debt, it is *compelled* to go more and more heavily into debt.

4. That the interest payments to be made by the debtor may be larger than the return he obtains on the borrowed capital is not a merely theoretical proposition, but it is something which can actually be observed quite often in reality. When this happens, interest payments either cannot be made, or, if they are made, they are no longer paid entirely out of profits, but partly out of fresh indebtedness. In this case, then, only a part of the new net borrowing can be invested, since a part of it must be used to pay interests on old debts and even perhaps to repay capital. Calling *required borrowing* the sum which must be borrowed in order to enable the debtor to service the old debts, and indicating it as L_n, the part of the net new borrowing available for investment in the year n, indicated as $\overline{B}_n$, is:

$$\overline{B}_n = B_n - L_n$$

And it is obviously:

$$L_n = - P_n$$

and hence, generally:

$$\overline{B}_n = B_n + P_n$$

This equation tells us that, when the net profit, P_n, is positive, the yearly sum available for investment is equal to the net new borrowing plus the net profit. When the net profit is negative, i.e. there is a loss, the yearly sum available for investment is equal to the net new borrowing minus the loss. And the loss, once it has appeared, tends to increase rapidly, because, while interest has to be paid on the entire amount of net new borrowing, only a part of this can now be invested and yield a return. In mathematical terms, if i'_n is the rate of interest to be paid on the new net borrowing B_n, the gross rate of return, r'_n, which must be obtained on the new net investment $\overline{B}_n$, in order not to have an additional loss, must be:

$$r'_n \geqslant i'_n \, \frac{B_n}{\overline{B}_n}$$

This means that r'_n must be so much higher than i'_n the higher the ratio $\dfrac{B_n}{\overline{B}_n}$. Thus, unless the profitability of investment is quickly

restored to positive levels, indebtedness becomes a self-feeding process, which after a certain point cannot be reversed, but gains speed, like an avalanche, at a compound rate, since a large and growing part of the net new borrowing is practically nothing else but the capitalization of interest payments which otherwise could not have been made.

5. How far can this process go? In direct lending the process cannot go too far. For instance, when a country borrows through the bond market, default is easier because the banks have no direct interest in avoiding or concealing it. Furthermore, when a country is known to be financially weak, borrowing on the market will become increasingly difficult for it. But, when borrowing is effected through the international banking system, the process can go much further. Theoretically, it could go on indefinitely. In so far as the banks have the confidence of their depositors, they could go on indefinitely extending bogus credit to the debtor countries, so that these can appear to be honouring their interest payments. At the same time, the banks pay interest to their depositors by crediting their accounts. And the more the banking system is interconnected and integrated the longer this process can expand without complications, since no large need of actual cash is involved. Accounts may be shifting from bank to bank, but, for the international banking system considered as a whole, assets will always match liabilities: only, while bank assets are to an increasing extent only paper entries without any real backing, bank liabilities are, as long as the banking system is solvent, real spendable money. In practice, banking intermediation in medium and long-term borrowing creates money out of sham, non-existing assets.

6. Incidentally, this is true not only in international lending but in domestic lending as well. When the domestic banking system lends to deficit-ridden government bodies or bankrupt public industries, it likewise creates true spendable deposits against paper assets without any real backing. The domestic case is on the one hand worse than the international case, and on the other hand better. It is worse in that the principal deficit-ridden borrower is usually the government of the country, which the banking system must, in one way or another, treat with deference; on the other hand, it is better, because, in the domestic case, the process is restrained by the reserve requirements for bank deposits, a restraining factor which is lacking in international lending.

7. We have thus established that international indebtedness, as well as domestic government and corporate indebtedness, which are physiological features of the capitalistic system when the debt can be serviced out of returns, tend to degenerate, and then become self-feeding, when interests cannot be paid out of the return on the capital employed but are paid out of new borrowings. And we have also found that such a degeneration can be the farther extended, the greater the bank intermediation in medium and long term lending and the more fully the banking system is integrated.

Two corollaries follow:

a) the outcome of this process must be inflation. For, if the banking system creates spendable money assets through loans which are used to service older debts, it is clear that this buying power against which there are no real assets and there is no production of goods and services, must lead to higher prices;

b) while the banking system remains solvent, it cannot be hoped to overcome inflation through high interest rates, because high interest rates are the very factor which feeds higher indebtedness, and hence the creation, in the form of an increasing volume of bank liabilities, of purely monetary buying power.

These two corollaries seem to be borne out by experience. In the last ten years, monetary restrictions through high interest rates have been so abundantly applied throughout the world that, if they had worked as they were supposed to do, we should by now be dying of deflation. And yet inflation has never been more rampant, even while the economies stagnate. Temporary slow-downs of the pace, when the business cycle is particularly depressed, are followed by ever stronger revivals.

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