Inflation, Indexation and Interest Income Taxation[*]

I. Introduction

In the face of the persistent, universal, and so far intractable high rate of inflation that is affecting most countries, and of the realization that such an inflation may have significant and often damaging effects on the tax systems, steps are being taken, or have already been taken, to make these tax systems, and particularly the personal income tax, inflation proof. The countries that have introduced corrective mechanisms in their personal income tax structure are many and include Chile, Brazil, Uruguay, and Argentina in Latin America; Canada in North America; Israel in Asia; and Iceland, Luxembourg, Denmark, the Netherlands, France, and several Swiss cantons in Europe.

In an inflationary situation the growth in the money incomes for most taxpayers may not necessarily reflect any growth in real income and in fact, as it is now the case in the United States, may even be associated with falls in pretax real incomes. However, because of the fact that the income tax structures of most countries are stipulated in relation to levels of income that are expressed in nominal terms (exemptions, brackets, etc.), the income tax does not discriminate between real and inflationary increases. Thus, as long as current income increases, the average tax rate for most taxpayers will grow regardless of whether the increase is due to real growth or just to inflation. Some taxpayers who had, heretofore, been exempted because their incomes were low in relation to the number of exemp-

tions and deductions to which they were entitled, will now become taxable; and some who were already being taxed will find themselves subjected to higher average (and often also marginal) tax rates. In time, if the inflationary pressure continues, and if the government does not react to correct this situation, through successful policies or through a modification of the nominal tax structure, the increase in money incomes may cause increases in tax revenues that, in addition to being inequitably distributed among the taxpayers, are not desirable either from an economic (i.e., from a "fiscal drag") or even from a political (i.e., from the "proper size of the public sector") point of view.

The types of adjustments that have been suggested are several but the one that is receiving most attention and approval in recent writing is of the type introduced in the Canadian Budget Speech in February 1973 which became effective in 1974.[1] This proposal would introduce price escalators into the income tax structure so that, over a period of time, the progressive income tax rates, even in the absence of any discretionary changes, would apply to incomes that are constant in real terms rather than to incomes that are constant in nominal terms as it is now the case in most countries. Under present conditions the nominal incomes to which these rates would apply would increase to reflect inflationary changes. Such an adjustment would extend to the various exemptions and deductions which the law expresses in fixed monetary values as, for example, the personal exemption. The taxable income bracket limits and the exemptions and fixed deductions woud be increased at a rate reflecting the increase in the cost of living. The proponents of this scheme maintain that such a correction would eliminate the effects of purely inflationary changes on both the size and the distribution of the personal income tax burden.

Such a price-indexed income tax structure may or may not be desirable from the point of view of equity, stability and efficiency of the economy.[2] However, unless it is accompanied by other adjust-

[1] A somewhat similar proposal was advanced by the author of this paper in " A Proposal for a Dynamically Self-Adjusting Personal Income Tax ", *Public Finance*, Vol. IV (1966) and by MILTON FRIEDMAN in *Newsweek*, March 3, 1969 and in several more recent publications including an article in *Fortune* magazine in July 1974. Some Latin American countries have followed variations of such procedures for many years.

[2] There are several problems, in addition to those discussed in this paper, that this scheme would have to solve. These relate to the choice of the appropriate price index and

ments, it will certainly not take care of some inequities and ineffi-
ciencies that are likely to arise in connection with particular types
of incomes and particularly in connection with capital gains and
interest incomes. The basic policy issue raised in this paper is that
the Canadian solution does very little to solve the problems related
to the taxation of these incomes in an inflationary situation.

The particular problems associated with the taxation of capital
gains in an inflationary situation have been discussed in considerable
details in several recent studies.[3] However, as far as the taxation of
interest income is concerned, no such discussion seems to be available
at this time although several authors have sensed that there is
something wrong in connection with this.[4] Brinner and Munnell,
on the other hand, specifically state that " it is not just as necessary
to adjust wages, *interest*, and dividends for inflation " as it is to adjust
for the effect of inflation on capital gains.[5] As it will be shown in
the following section, contrary to their view, the taxation of interest
income does create special problems in an inflationary situation.

This paper has two specific objectives, one theoretical and the
other practical. As to the latter, the paper examines the taxation of
interest income in an inflationary situation and makes some recom-
mendations aimed at reducing, if not eliminating, inequities that
arise. As to the former, it generalizes the theoretical conclusions of
Fisher's theory by introducing explicitly income taxation among the
variables that affect the Fisherian conclusion. Section II concerns
mainly the policy aspects while Section III deals mainly with the
above-mentioned theoretical aspect. A short section draws some
conclusions.

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its reliability, to the differential lags among different types of incomes, to changes in income
distribution associated with inflation, etc.

3 See ROGER BRINNER, " Inflation, Deferral and the Neutral Taxation of Capital
Gains ", *National Tax Journal*, December 1973; ROGER BRINNER and ALICIA MUNNELL,
" Taxation of Capital Gains: Inflation and Other Problems ", *New England Economic
Review*, September-October 1974; and MILTON FRIEDMAN, " Using Escalators to Help Fight
Inflation ", *Fortune*, July 1974.

4 For casual references to the problem discussed in this paper see in particular P. BAFFI,
" Savings in Italy Today ", pp. 137-138, and F. A. LUTZ, " Inflation and the Rate of
Interest ", p. 116 both in this *Review*, June 1974; EDWARD M. BERNSTEIN, " Indexing
Money Payments in a Large and Prolonged Inflation ", and HERBERT GIERSCH, " Index
Clauses and the Fight Against Inflation ", both in American Enterprise Institute, *Essays on
Inflation and Indexation* (Washington, D.C.: A.E.I.), pp. 15 and 82; R. I. G. ALLEN and
D. SAVAGE, " Inflation and the Personal Income Tax ", *National Institute Economic Review*,
No. 70, November 1974.

5 BRINNER and MUNNELL, *op. cit.*, p. 7 (italics added).

II. Inflation, Interest Taxation and Indexation in the Fisherian Model

To set the problem in the proper context, let us first consider a
situation in which prices are expected to remain stable and where
these expectations are fully realized. Let us assume also that an
individual can lend his savings at a rate of interest of 5 per cent
which will be called the real rate. To simplify the presentation we
shall avoid, at least for the time being, the complications that would
be introduced by considerations of term structures of the interest
rate; we shall, thus, refer to one particular rate of interest. We shall
also assume that the marginal income tax rate for this particular
individual is 50 per cent.

Given these assumptions, if an individual lends $1,000 and after
one year receives $50 of interest income — in addition to the return
of his principal —, this income will be taxed at the marginal tax
rate of 50 per cent. Consequently, after paying the tax, he will be
left with $25 or with a net-of-tax real rate of interest on his financial
investment of 2.5 per cent. In this case, when there is actual and
expected price stability, the tax on interest income will never reduce
that income to a negative figure unless the income tax has marginal
rates of more than 100 per cent.

In this connection, the only issues that may arise are related
(a) to the age-old controversy of whether, with the taxation of interest
income, there is double taxation of saving,[6] or (b) whether the tax
on interest income will lead to some readjustment in the portfolio
of the asset holder by inducing him to substitute assets with nontax-
able returns, such as money,[7] for those with taxable returns such as
bonds,[8] or (c) finally, whether his propensity to save is affected by
the tax-induced reduction in the rate of return on savings.[9]

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6 Many outstanding economists of the past, including Mill, Marshall, Pigou,
Einaudi, etc., have sustained the thesis of the " double taxation of saving." The prevailing
modern view does not support that thesis. See RICHARD GOODE, *The Individual Income Tax*
(Washington, D.C., Brookings, 1964), pp. 25-28 for a concise summary of the arguments.

7 Of course the return to money — defined here as cash plus demand deposits —
in this context is in kind, and namely the *utility* derived from holding it.

8 See, for an empirical backing of this thesis, VITO TANZI, " Demand for Money,
Interest Rates and Income Taxation ", in this *Review*, December 1974.

9 The literature on this point is considerable. Inter alia, see especially COLIN WRIGHT,
" Saving and the Rate of Interest ", in A. C. Harberger and M. J. Bailey, eds., *The Taxation
of Income from Capital* (Washington, D.C., Brookings, 1969).

Let us now introduce price changes. To simplify the presentation, we assume for the moment that the rate of inflation is fully anticipated and stable; in other words, the future price level is known. In this situation the *monetary* rate of interest will be somewhat higher than the *real* rate and, ignoring the income tax and following Fisher's contributions, it can be expected to approximate the sum of the real rate of interest and the anticipated price change.[10] More generally, if r is the rate of interest when no price change is expected, a is the anticipated rate of inflation, and r^m is the monetary rate of interest, then

[1] $$1 + r^m = (1 + a)(1 + r)$$

therefore

[2] $$r^m = a + r + ar$$

The last term, ar, can generally be ignored unless the rate of inflation is large.[11] In the numerical example, we shall ignore it and will assume that $r^m = a + r$ even when the compounding is not continuous.

The acceptance of the Fisherian solution, concerning the rate of interest in an inflationary situation, is not essential to the basic argument of this paper; however, it does make the presentation of such an argument much easier. Consequently, we shall proceed within the framework of Fisher's analysis but will come back later to a brief discussion of that very analysis.

Let us now assume that the anticipated rate of inflation, a, is 10 per cent per year. Then the monetary rate of interest would rise to $r^m = 15$ per cent. In this particular situation, and in the absence of any income tax on interest income, the individual who had lent $1,000 would receive $1,150 after one yer. In the absence of taxes, this individual would not be any better off or worse off than he would have been had he received back $1,050 when there was no inflation. This is so since $100 out of the $150 of interest income

10 This is a solution generally attributed to Irving Fisher. See J. Hirshleifer, *Investment, Interest and Capital* (Englewood Cliffs: Prentice Hall, 1970), especially Chapter 5. For Fisher's seminal contribution see Irving Fisher, *The Rate of Interest* (New York: The Macmillan Company, 1907), pp. 270-280; see also his later work, *The Theory of Interest* (The Macmillan Company, 1930). A good discussion of this can also be found in M. J. Bailey, *National Income and the Price Level* (McGraw-Hill, 1962).
11 This term depends on the compounding period. It disappears if one assumes continuous compounding in which case the formula $r^m = a + r$ will be exact.

just compensates him for the loss caused by inflation on his original financial capital of $1,000.[12]

But let us now bring the tax on income in the picture. Assuming the marginal tax rate to be still 50 per cent, the individual will pay $75 in taxes.[13] A 10 per cent increase in the price level has led to a 200 per cent increase in taxable income and at least to a comparable percentage increase in tax liability. But this means that he has received a negative real interest rate of 2.5 per cent since the net-of-tax return is not enough to compensate him for the erosion in the real value of his financial capital. The higher is the rate of inflation, and the higher is the marginal tax rate at which the income of the individual is levied, the more pronounced is the real loss that the creditor is likely to experience. The tax on interest income in fact becomes more than that since it comes to be a tax on the capital itself. More formally, let A represent the amount of the loan in the base year. Then, in the absence of inflation the tax, t, would be levied on $A(1 + r) - A$ or

[3] $$[A(1 + r) - A]t = (Ar)t$$

When inflation is present the tax would be:

[4] $$[A(1 + r + a) - A]t = (Ar)t + (Aa)t$$

Since Aa is not a genuine income but only an adjustment for inflation which is necessary to maintain constant the real value of the loan, it follows from equation [4] that the tax on interest income, in an inflationary situation, consists of a tax on real income — (Ar)t in the above equation — plus a tax on the capital itself — (Aa)t. It is obvious that such a situation requires a kind of correction not provided by the general adjustment advocated for the whole income of a taxpayer as the one introduced in Canada. That general adjustment will still be associated with a very inequitable treatment of interest income as it would be with capital gains income.

One solution would be to exempt all interest income from the income tax; this, however, would amount to overcompensation and

12 This is true since we are ignoring the term ar in equation [2] above. Strictly speaking, the real value of $50 has fallen so that he is somewhat worse off.
13 In fact this rate may be higher if inflation, by increasing the overall nominal income of the taxpayer pushes him into a higher income bracket, provided that the structure of the income tax has not been corrected.

very few economists or policymakers would support it. Another, and theoretically more attractive one, would proceed along the path of indexation of interest. In this solution the correction would have the objective of exempting Aa from income taxation so that (Aa)t in equation [4] would become zero.

One can think of an indexed loan as one in which the monetary rate of interest r^m is made up of two components: real rate, r, which is the one that would prevail in the absence of inflation (actual or anticipated), and a monetary correction, a, to compensate for inflation. Generally, a is not known *ex ante* so that the correction can be calculated *ex post*. In other words, we can think of an indexed loan in terms of equation [2] above. Now if Aa is exempted from the tax, equation [4] becomes identical to equation [3]. Thus the real tax payment on interest income would no longer be affected by the rate of inflation.[14]

Some countries, including the United States, allow a deduction for interest payments made by borrowers. The main justification for this particular treatment of interest costs is that these are often costs of carrying out business activities and that, as such, they should be deductible. This justification is valid when money is borrowed in connection with a business activity but it is not valid for borrowing done for consumption loans of various types. In any case this tax treatment of interest payments greatly increases the advantage that debtors receive from inflation. This advantage depends not only on the rate of inflation but also on the debtor's marginal tax rate.

In the Fisherian situation, a *new* borrower who agrees to pay the inflation-adjusted rate of interest receives no benefit from inflation if his marginal income tax rate is zero but receives increasingly important benefits as his marginal tax rate rises.[15] Thus, given a

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14 A solution along these lines has been reported to be used in Colombia since 1972. See, for a reference to this, ALBERT GOLTZ and DESMOND LACHMAN, "Monetary Correction and Columbia's Saving and Loan System", *Finance and Development*, Vol. 11, No. 3, September 1974. An alternative way of reaching the same result is to stipulate that the borrower will pay periodically a given interest on the loan and, at maturity, would return an amount which has been adjusted for any price change over the period of the loan. Thus the principal would remain constant in real terms. In this way, only the periodic interest payment would be taxed. Brazil is reported to follow a similar procedure, see ALEXANDER KAFKA, " Indexing for Inflation in Brazil ", in *Essays on Inflation and Indexation*, *op. cit.*, pp. 90-91.

15 Obviously one who had borrowed at the lower rate of interest prevailing before inflation got on the way would gain even more.

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stable rate of inflation of 10 per cent, the individual who borrowed $1,000 at a market rate of interest of 15 per cent would pay a *real* rate of interest of 5 per cent if his marginal tax rate were zero, but he would pay a real rate of interest of zero if his marginal tax rate were 33.3 per cent, and a negative rate of 2.5 if his marginal tax rate were 50 per cent. Since wealthier individuals pay higher marginal tax rates, the equity implications of such treatment are rather obvious. A borrower's position will become more attractive with an increase in the rate of inflation and in the marginal tax rate.[16]

The solution to this problem is similar to that suggested for the lender. Looking at equation [4] above, it has been suggested that Aa — i.e., the increase in the nominal value of the asset necessary to maintain unchanged its real value — ought to be exempted from income taxation so that the only income on which the lender would pay a tax would be Ar.[17] Similarly, the borrower would be allowed a deduction only for Ar and not for Aa since the latter is actually a repayment of capital.

III. Additional Considerations and a Digression on Fisher's Theory

The preceding discussion was based on a strict acceptance of the Fisherian theory. In this section we shall subject that very analysis to closer scrutiny and shall introduce an increasing degree of realism to see if some amendments to the conclusions reached above are in order. For the time being it will still be assumed that the rate of inflation is fully anticipated and shall still refer to one particular rate of interest.

A theoretical discussion of Fisher's theory would be out of place in the present paper but it may be worthy of mention that, apart from the criticism to it implicit in the Keynesian liquidity preference approach to the determination of the rate of interest, it has been

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16 The advantage that the borrower will get depends also on what he does with the funds borrowed. If the individual uses the funds for consumption purposes, the conclusion reached above is completely valid. If he buys an asset that appreciates over time and if he will only pay a tax on the current income that he derives from the investment, he will still gain. But if he buys an asset with a nonadjustable base and with a completely taxed income (say a bond), then he may not receive any advantage.

17 In a country with a global income tax and with a system of correction for the income tax similar to the Canadian one, Ar would become part of the global income of the lender and would be taxed with the adjusted nominal tax structure. This would in part eliminate the effect of inflation on Ar itself. See footnote 11 above.

faulted with respect to its conclusion that inflation, even if fully anticipated, will not change the *real* rate of interest. Mundell has argued that, in such a situation, the real rate of interest will fall and, consequently, the money rate will increase by less than the rate of inflation. This conclusion is based on the theoretical proposition that inflation will reduce the real value of money balances thus causing a fall in total real private wealth. Such a fall is supposed to stimulate more saving and lead to the decline in the real rate of interest.[18]

Even if valid, Mundell's amendment to Fisher does not affect the previously suggested solution about the proper way of treating interest income in an inflationary situation. It would still be necessary to compensate the lender for the erosion in the real value of his financial investment. This could be done *ex post* by exempting from taxation the part of interest income which would compensate the lender for inflation. However, the introduction of income taxes raises some more fundamental questions about the validity of the Fisherian solution when, as it is normally the case, the whole of interest income is taxed in an inflationary solution. It is hard to accept the idea that individuals would not react, either as savers or as financial investors, when, due to the tax, the real return on their financial investments falls below zero. Thus, in such a situation the effect of inflation on the real rate of interest may be more significant than suggested by Mundell.

The reactions of the economic agents may be several: as savers they may decrease, or increase, their savings.[19] As financial investors, they are likely to reduce the savings that they make available to others; instead they may use these savings for the direct accumulation of real assets (such as real estate, works of art, durable goods, jewels, etc.) as it has been reported in many countries under severe inflationary pressures. Or, they may bypass the financial intermediaries and invest directly in equities. This is the process of disintermediation which has also been reported to be taking place in some

18 This argument was first advanced in ROBERT A. MUNDELL, "Inflation and Real Interest", *Journal of Political Economy*, 71, June 1963. It was restated in Chapter 2 of MUNDELL's *Monetary Theory* (Pacific Palisades: Goodyear Publishing Company, Inc., 1971).
19 Economic theory is unable to provide an answer to what they would do in such a situation. However, the hunch among many observers has been that the effect on the propensity to save would be negative.

countries at this time.[20] Or they may export their savings thus creating or aggravating balance of payments difficulties.

The problem here is that the Fisherian solution is stipulated on the assumption that the adjustment in the monetary rate of interest which compensates the lenders for the inflationary change will leave unchanged the real rate of interest so that the monetary rate that was obtained in equation [2] above is still an equilibrium one. Apart from Mundell's criticism, this solution may have been valid for the United States at the time when Fisher wrote his famous book — 1907 — but it is unlikely to be still valid now (at least not in the form outlined above) that an income tax is in existence.[21] In such case the adjustment in the rate that would re-establish equilibrium must not only take into account the rate of inflation but also the impact of the income tax and its interrelation with inflation. Thus one way of putting the question is: if an income tax is levied without adjustment on the whole of interest income, what increase in the monetary rate of interest will be needed to maintain constant the after-tax real rate for an individual in the face of inflationary changes and of income taxes levied on total *current* income?

If we assume that a financial investor would require full compensation so that his real, after tax situation, does not change, then the *required* rate, r*, will be:

$$[5] \qquad r^* = r + \frac{a}{1-t}$$

where t is the marginal tax rate on his monetary income, and r and a have the same meanings as above. The table below provides some estimates for a few assumed rates of inflation, that is for alternative values of a, and for a constant pretax real rate of interest of 5 per cent, and a constant marginal rate of tax of 50 per cent.

Thus to the extent that no correction in the income tax law is made, the uncorrected Fisherian monetary rate of interest (r^m) will be somewhat less than needed to compensate the investor.[22] If this

20 See MILTON FRIEDMAN, "Monetary Correction" in American Enterprise Institute, *Essays on Inflation and Indexation* (Washington, D.C., 1974), p. 41. This process is facilitated by the existence of legal ceilings on the rates of interest that some of these intermediaries are allowed to pay.
21 The individual income tax was introduced in the United States in 1913.
22 Only the required rate shown in the fourth column will leave the lender with a constant net-of-tax real rate of interest.

MONETARY RATES OF INTEREST REQUIRED TO KEEP CONSTANT THE NET-OF-TAX REAL RATE FOR A TAXPAYER WITH A 50 PER CENT MARGINAL TAX RATE

(In percentages)

Inflation a	Real Rate of Interest r	Fisher's Monetary Rate $rm = a + r$	Required Rate r^*	Effective Rate on Real interest Income [1] z
0	5	5	5	50
5	5	10	15	100
10	5	15	25	150
15	5	20	35	200
20	5	25	45	250
30	5	35	65	350

[1] This is the effective tax rate which results when Fisher's Monetary Rate is established and the whole interest income is taxed at 50 per cent.

rate comes to prevail, it is likely that the saver will be induced to adjust his propensity to save, or the financial investor may adjust his portfolio away from assets with a fixed monetary valuation. However, it is very likely that the lenders may try to adjust their position by requesting from the borrowers rates that are higher than the Fisherian market rate. Thus we might experience a process not too dissimilar from the one described by Lundberg in connection with the effect of income taxes on wages.[23] Following Lundberg's argument it can be maintained that in the attempt to preserve their real rate of returns, the savers may contribute to inflation by increasing interest costs. The degree to which this will happen depends on many factors among which one must put the reaction of the consumer price index to a rise in the rate of interest.[24] Since various savers

23 See ERIK LUNDBERG, *Instability and Economic Growth* (New Haven: Yale University Press, 1968), pp. 199-201. Original statement is in ERIK LUNDBERG, *Business Cycles and Economic Policy*, London, 1957 (the Swedish edition appeared in 1953). Lundberg's argument about wages is that wage earners may try to maintain constant their real disposable income during an inflationary situation. Thus, when faced with progressive income taxes, they may require wage increases that exceed the rate of inflation, thus contributing to a cost-push — or tax-push — inflation. Several recent studies have provided empirical backing to Lundberg's original theoretical proposition.

24 In the United States mortgage interest accounted for 3.75 per cent and 3.70 per cent of the consumer price index in December 1971 and December 1972, respectively. Data from U.S. Department of Labor, Bureau of Labor Statistics. A recent quantitative

have different marginal tax rates, it is not easy to see the extent of the *potential* change in the rate of interest above the level indicated by the Fisherian solution. In practice and in the absence of corrections, institutional limitations would prevent the establishment of such a rate and would thus lead to the excessive taxation of interest incomes.

Up to this point we have dealt with a theoretical situation in which: (a) economic operators fully and correctly anticipated the rate of inflation; (b) that rate was assumed to be stable; and, (c) there were no institutionally imposed ceilings on the upward movements in the nominal rates of interest. If these assumptions did hold, it is likely that at some stage the nominal rate of interest would approach the Fisherian rate, provided that either there are no income taxes on interest income or that indexation makes possible the exemption of the monetary correction from taxation as suggested in Section II. In this situation the introduction of monetary corrections and their integration with the proper tax treatment of interest income would be simplest.

In reality, however, none of these assumptions may hold. In the situation that has characterized the industrialized countries in the most recent years, the acceleration of the inflationary process has meant that the economic operators have generally underestimated the future increases. This factor, together with the existence of low ceilings imposed in times of price stability, has constrained the increase in the nominal rates of interest at levels somewhat below what one would have expected from the theory outlined above. The result has been that real rates have fluctuated more than nominal rates and that real rates even abstracting from taxes have at times become negative.[25] Of course, if instead of considering gross-of-tax real rates one considered net-of-tax real rates, the fall in these in the industrialized countries would appear even more pronounced. In this situation lenders are likely to suffer even more than resulted from the discussion in Section II; and, by the same token, borrowers are even more advantaged. Such a situation, if it should persist

study has concluded that the impact of changes in interest rates on price changes in the United States in recent years has been relatively small. However, during the period covered by the study — 1955 to 1969 — the change in the rate of interest was quite small. Higher increases could have had more significant effects. See STEVEN A. SEELING, " Rising Interest Rates and Cost-Push Inflation ", *The Journal of Finance*, Vol. XXIX, September 1974, No. 4.

25 The supporting empirical evidence can be found in the interesting paper by F. A. LUTZ, " Inflation and the Rate of Interest ", in this *Review*, June 1974.

beyond a short period, would certainly have significant negative influences both on the efficiency of the capital market and on the equity of the tax system.

It should also be mentioned here that an unstable rate of inflation is likely to have a greater impact on the term structure of interest than a stable one. If expectations lag behind actual price changes, the rates on long-term loans are likely to change less than those on short-term so that the buyers of the first type of financial asset will suffer more than those of the second type. Thus corrections may be more important for the former.

IV. Conclusions

In this paper it has been shown that the issue of indexation of financial assets is closely related to the issue of the taxation of interest income and that, if a system of indexation of loans should come into existence, it should contemplate, for the lender, exempting from the income tax the monetary correction. At the same time in countries where interest payments are deductible expenses, the borrowers should not be allowed a deduction for the monetary correction.[26]

Short of fully indexed loans it would be possible to modify the income tax so as to exempt from the tax the part of the interest income that is equal to the increase in prices as measured by some appropriate index. A similar adjustment could be made for the borrower. As pointed out at the end of the previous section, the real rate of interest may at times become negative. In this case, the lender would be allowed a complete deduction for all the interest payment that he receives — even though this would not compensate him fully — while the borrower would not be allowed any deduction. These modifications to the income tax laws could be limited to those loans which extended over a specified period of time, say a year. By excluding short-term loans, many administrative complications would be avoided.

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26 The whole discussion has been related to inflation. It should be obvious that in the now unlikely eventuality that prices should start falling, much of the analysis and conclusions could be applied, *mutatis mutandis.*

Washington

Vito Tanzi