INFLATION-ADJUSTED TAXATION AND INDEX-LINKED LOANS

BY

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The high rates of inflation now prevailing in industrialized western states have had serious repercussions on the tax systems. General or partial reforms have been introduced in several countries to take account of inflation in the determination of taxable income. Such measures have been taken in the Latin American countries and Israel. Iceland introduced a completely inflation-adjusted tax system in 1979. Partial reforms have been adopted in several countries. In some countries where general reforms have not taken place elaborate official studies have been made, such as the Hofstra Committee report[1] in the Netherlands and the Inflation Accounting Commission's report[2] in Finland. Such an official study, for which I have been given responsibility, has also been made in Sweden. This work was completed in 1982 and was published in three volumes with the title *Real beskattning*.[3] The committee is known under the name *Realbeskattningsutredningen* (the Inflation and Taxation Committee).

1. WHAT IS MEANT BY INFLATION-ADJUSTED TAXATION AND INDEX-LINKED BONDS

There has been a rather lively debate on the problems of inflation and taxation during the last few years. The problems were discussed at the 1977 Congress of the International Fiscal Association in Vienna, for which a general report was written by Professor Ruppe, Austria.[4] In 1982 the International Chamber of Commerce issued a statement on "determining taxable profits in an inflationary environment" urging governments to take rapid action to adapt business taxation to the persistently high level of taxation with which business is currently faced.[5]

In the international debate on taxation and inflation there are three different types of problems that are discussed, namely

1) the tax scales at progressive taxes,
2) the basis for the assessment of tax,
3) the time at which tax is payable.

[1] The Dutch title is "Inflatienneutrale belastingshessing" (The Hague 1978). A summary is published in English with the title "An inflation-adjusted tax system" (The Hague 1978).
[2] *Inflationsredovisningskommissionens betänkande. Kommittébetänkande* 1979: 22 (Helsinki 1980).
[3] *SOU* 1982: 1–3.
[4] *Cahiers de droit fiscal international,* vol. LXII(a).
[5] Document 180/208 Rev. 5. Adopted by the ICC Council on 9 June 1982.

Like the report of the Inflation and Taxation Committee, this paper will only deal with the second type of problems.

As is the case in most countries the present tax system of Sweden follows the principle of nominal value. This means that a monetary unit such as the Swedish Crown is always taken as equivalent to the same monetary unit irrespective of changes in its purchasing power over a period of time. According to the principle of real value the difference of its purchasing power has to be taken into account in order to reduce it to a common denominator, that is, the purchasing power of the Crown of the income year.

The failure to adapt income tax systems to inflation causes several serious problems in a country like Sweden. It causes an enormous involuntary redistribution of capital from savers to borrowers.

Under inflationary conditions the real value of all money claims expressed in nominal terms falls. The creditor suffers a real loss and the debtor enjoys a real gain. As inflation becomes permanent debtors will generally compensate creditors for these losses by high nominal interest rates. If income taxation is not adapted to inflation the entire nominal interest will be taxable income to the creditor and fully deductible to the debtor. This implies that the real interest after tax might be negative in spite of the fact that it has been positive before tax. If, for example, the nominal interest rate is 12 %, the inflation rate 10 % and the marginal income tax is 50 %, there will be a positive real interest of 2 % before tax. After tax, however, there will be a negative real interest of 4 %.

Another problem caused by the principle of nominal value for income taxation under inflationary conditions is the distortion it produces in the choice between different investment alternatives. If inflation is taken account of in the taxation of some assets but not of others, or if, for example, capital gains on some assets are taxed more favourably than others, serious distortions will take place. In Sweden it is more advantageous to own a house than to own shares. To save in a bank is the most disadvantageous method of all.

If the principle of nominal value is applied when determining taxable business profits in an inflationary environment, fictitious profits will be taxed. This is due to the fact that income and costs often occur in different years. If goods are bought at a unit cost of 100 one year and sold for 140 the next year the taxable profit will be 40 if the principle of nominal value is applied. If the value of money has decreased by 10 % in the meantime 10 of 40 is only a fictitious profit. The real profit is 30. If the fictitious profit of 10 is taxed the income tax will in reality become a tax on capital.

There is a close relation between the application of the principle of real value in income taxation and the creation of a market for index-linked bonds and other monetary assets. The nominal value of an index-linked bond is linked to some index that measures price changes. If increases in the nominal value of such monetary assets are taxed as interest a market for monetary assets will not easily develop. The investor will then be deprived by taxes of a part of the real value of the asset.

2. THE INCOME TAXATION OF HOUSEHOLDS

Of the tax problems that are caused by the principle of nominal value under inflationary conditions the most important are those related to the taxation of interest. These problems are especially serious in a country like Sweden, where all interest income in principle is taxable and all interest costs are deductible. Interest is deductible even if a loan is taken for personal consumption.

There are several possible solutions to these problems. A solution must take account of the fact, however, that tax rules for households cannot be allowed to become too complicated.

The most simple solution is certainly the one chosen by Iceland. All interest income is tax-free and all interest cost is (with some exceptions) non-deductible in the household sector of the economy. In the Icelandic view nominal interest tends to be equivalent to inflation.

It is of course, in principle also possible to let the creditor every year deduct the loss in real value due to inflation and tax the debtor correspondingly.

The Inflation and Taxation Committee regarded the first solution as too simplistic, as experience has shown that real interest can be rather high, while the second solution was felt to be too complicated. Instead it suggests that nominal interest should always be divided into two parts, inflation compensation and real interest. Inflation compensation should be tax-free and non-deductible and real interest taxable and deductible.

The committee emphasizes the importance of generality and exactness in making this division. If different interests are treated differently or creditors and debtors are taxed according to different principles, tax-payers could easily profit by avoidance devices. If, for example, only the inflation compensation on some particular loans, such as government bonds, were to be tax-free while the principle of nominal value was applied in other cases, high-income earners would certainly buy these bonds, financing the investment with borrowed money where the entire nominal interest would be tax-deductible.

The principle of generality and exactness in drawing the line between tax-free inflation compensation and taxable real interest will make it simple to tax index-linked loans of a particular kind. The committee calls these "loans at real value" (*reallån*). For such loans the index used in establishing their nominal value at a given time is the index that is used for tax purposes. The committee suggests that this index should be the general consumption price index. This means that the increase in nominal value due to the index link for such loans could be made tax-free, with only the interest being taxable. The principle of generality would still be upheld as exactly the same amount would be the tax-free inflation compensation part of the interest on an ordinary loan.

For other index-linked loans the principle of generality implies that interest and value guarantee should be added and regarded as nominal interest which means that the sum should be divided into a tax-free inflation compensation part and a taxable real interest part.

The Inflation and Taxation Committee also proposes that capital gains on monetary assets should be fully taxable.

It cannot be denied, however, that the division of interest into a tax-free inflation compensation part and a taxable real interest could be complicated. This is especially true if both capital and interest rates are often changed, as is typically the case with bank accounts held by households. However, the introduction of computers in modern banking has made this problem much easier to handle. Banks and other credit institutions could help their clients with these calculations.

Owner-occupied houses are in Sweden taxed according to principles that differ from the principles applied in several other countries. A house-owner is taxed on an imputed income. This imputed income is calculated as a percentage of the assessed value of the house. For most houses the percentage is 2 %. The only cost deduction permitted is for interest, which is fully deductible. When a house is sold the capital gain on the sale is taxed. In calculating the capital gain the cost of the property may be multiplied by a coefficient or index number to take account of the changes in the price level. The principle of real value is thus applied in the calculation of capital gains. It is also applied in the imputation of income on which the house-owner is taxed annually. As a house is regularly reassessed every five years the imputed income will increase with inflation.

For home-owners the rules for the taxation of interest suggested by the Inflation and Taxation Committee would result in great changes. Under the present rules, if a tax-payer bought a house for 200 000 Swedish Crowns 10 years ago, borrowing 150 000 and contributing 50 000 himself, and sells the house for 400 000 today when the value of the Swedish Crown has fallen to one half, he will not be taxed on a capital gain.[6] The real value of the house is the same. It is a fact, however, that he originally contributed 50 000 and after the sale has an equity of 250 000, which corresponds to 125 000 in the original value of the Swedish Crown. This untaxed gain is not—as it is sometimes

[6] In 1980 the indexation of cost for the first four years of ownership was disallowed. This limitation was introduced because of the profits made by indebted house-owners as a result of inflation.

thought—made on the rise in value of the house. Its real value is unchanged. It is entirely attributable to the gain he has made due to the drop in the real value of the debt. Every year he has been able to deduct the entire interest and thus deduct the compensation he has paid to the creditor for the reduction of the real value of the indebtness.

If the debt had been an index-linked "real" debt the original indebtness of 150 000 Swedish Crowns would have been 300 000 at the sale of the house. This would have left him with an equity of 100 000, an amount that would have been the exact equivalent of the original 50 000 according to the principle of real value. The same result would have been achieved if the debt had not been index-linked, but then the inflation compensation part of the interest would not have been deductible.

3. BUSINESS TAXATION

As previously indicated, the principle of nominal value is particularly harmful in the taxation of business profits during a period of inflation. Costs often occur several years prior to the realization of profits. If the change in the value of the monetary unit is not taken account of, fictitious profits will be taxed. Such taxation creates an erosion of the equity of the business enterprise and threatens the ability of the enterprise to maintain productive capacity and the employment level. The purpose of the introduction of the principle of real value in business taxation is to ensure that the business enterprise will be taxed *as if* inflation had not existed.

Traditionally, there exists in many countries a close relationship between accountancy rules and business taxation. In the last few years there has been much discussion about inflation accounting. The problem of business taxation in an inflationary environment would be easier to solve if the solution could be based on established principles of inflation accounting.

It is a fact, however, that although much valuable work has been done, no common position has emerged among accountants. Most systems of inflation accounting have, however, a traditional balance sheet as their starting point. Thus it seems possible to use the same method for tax purposes; that is to start with traditional accounting and make adjustments for inflation for tax purposes.

The simplest way of taking account of inflation would be to allow an inflation deduction calculated as the equity of the firm multiplied by the inflation rate of the year.

This solution, however, has certain disadvantages. If an income is not taxed until it is actually received, costs should not be deductible before that time. If inflation adjustment is made by a yearly deduction calculated as equity multiplied by the inflation rate the adjustment of historic cost would lead to a deduction before the cost is itself deductible. Thus it is necessary to find a method that in principle makes the inflation-adjusted cost deductible during the same year as the one in which the cost would be deductible according to ordinary tax rules.

This means that depreciation deductions should not be based on historic cost but on an inflation-adjusted cost. Such an adjustment could be made either by the indexation of historic cost or by choosing the replacement cost as the basis for depreciation. In the first case it is the real value of the equity that is preserved, in the second case it is the physical capacity of the particular firm. The Inflation and Taxation Committee strongly supports the indexation of historic cost as it does not consider it to be the purpose of the tax rules to allow for differences in the cost development of particular firms but rather for changes in the general price level.

For inventories the value of the opening inventories should also be recalculated using an official general price index. This gives the same result as if the cost of an item sold had been revalued at the moment of sale.

The Inflation and Taxation Committee suggests that inflation adjustment should be made by means of a deduction from nominal profits on the taxpayer's tax return. For practical reasons it is also proposed that the basis of such depreciable assets for which book depreciation is used should not be indexed. Instead a deduction should be given in the same way as for inventories, that is, for the opening book value multiplied by the inflation rate of the year. This proposal is of course incorrect from a theoretical point of view but could be defended by the argument that it differs only slightly from a correct method since assets are rapidly written off when book depreciation is used.

It is important that the inflation gains and losses on monetary assets and liabilities are not overlooked. An inflation adjustment that seeks only to eliminate the taxation of the fictitious profits is incomplete and could even imply an unfair tax advantage in some cases. There are several ways of taking account of the impact of inflation on monetary assets and liabilities. The Hofstra Committee in the Netherlands suggested that the deductions allowed to eliminate the taxation of fictitious profits should not be given for assets that were debt-financed. The idea of a gearing adjustment was taken up by the Inflation Accounting Commission in Finland. It suggested that a deduction to eliminate fictitious profits should be reduced by the ratio of debt to equity. In Iceland a surplus of liabilities over monetary and some other assets is multiplied by the inflation rate of the year and the result taken up as taxable income.

The Inflation and Taxation Committee has not, however, chosen any of these possible solutions. Instead the method suggested is the one proposed for households. Nominal interest should be divided into two parts. The inflation compensation part should be tax-free and non-deductible. Only the real interest should be taxable and deductible. By adhering to one consistent general principle for the taxation of interest the committee has avoided the problem of having to decide whether interest should be allocated to the household sector or the business sector.

4. EFFECTS OF THE INTRODUCTION OF AN INFLATION-ADJUSTED TAX SYSTEM

In many cases the transition from an income tax system based on the principle of nominal value to a system based on the principle of real value will under inflationary conditions be a dramatic step. The lower the inflation rate the easier it will be to take this step. On the other hand, the higher the rate of inflation the more necessary this step will be.

For business taxation, however, it is evident that the principle of real value generally will mean tax reductions. The advantage that fictitious profits will not be taxed is greater than the disadvantage that the inflationary gains on liabilities will be recognized.

For debtors in the household sector, however, the transition will imply a substantial reduction of the tax advantages in the system of nominal value. Of course, this is only the case in countries like Sweden, where all interest is fully deductible.

Swedish housing policy has been based on the philosophy that newly-produced homes should be sold to buyers who finance this investment almost entirely by raising loans. With the prevailing high nominal interest rates the costs of the indebtness would have been very high during the first years of the loan. In fact, the interest costs have only been supportable because they have been deductible and are thus passed on to tax-payers in general.

In a country where roughly half the population lives in rented apartments the tax concessions bestowed on the home-owners would not have been accepted if the same subventions had not been given to tenants. Such subventions have also been given to owners of apartment buildings in the form of direct interest subventions. Thus, a certain equilibrium has been established between home-owners and tenants. As inflation rates have increased, the cost of these subventions has increased enormously. As the Swedish national budget is running a big deficit it will not be possible for the government to continue to subsidize almost the entire housing sector.

If the present subvention policy proves impossible in the future because of lack of funds, and if inflation prevails, there will then be the problem of what will happen to home-owners and tenants in newly-bought houses if there is a transition from the principle of nominal value to one of real value. In older houses inflation will have reduced the real value of the debts.

It is in this context that the proposal of the Inflation and Taxation Committee for the large-scale introduction of index-linked "real" loans in the housing sector has to be seen. Such loans run at a low rate of interest, say 2–3 %. On the other hand, owing to the index-linking their real value is the same. In Swedish Crowns this means that interest on and amortizations of the loans in inflationary conditions will increase. For new loans, however, the costs will be easier to support than they are for nominal loans as interest rates will be much lower. The Inflation and Taxation Committee thinks it is possible to reduce direct and indirect housing subventions drastically without increasing the costs of newly-built houses at the time of the transition. However, in the long run costs will, of course, be higher.

5. INFLATION-ADJUSTED TAXATION, INDEX-LINKED LOANS AND INFLATION

Neither experience nor theoretical analysis has been able to provide us with a clear answer to the important question of whether inflation-adjusted taxation and index-linked loans stimulate inflation or help to check it.

If, however, an important part of the population of a country profits every year from the fact that taxation has not been adapted to inflation it is not unlikely that the introduction of inflation-adjusted taxation will make anti-inflationary measures more popular in the future.