Inflation and personal income tax

Inflation threatens to become a permanent fact in many economies. One result is that distortions arise in personal income tax systems. The author considers the desirability of schemes for automatically adjusting taxation to inflation.

Amalio Humberto Petrei

The combination of a progressive personal income tax with inflation can produce both increased revenue for government and significant changes in the distribution of the tax burden among individuals. As money income rises, even if real income is unchanged, taxpayers are moved upward in the tax schedule and are thus subject to higher tax rates. In addition, persons who previously were not taxed because their incomes were below the limits fixed by law may become liable to taxation. Other tax deductions and exemptions—for example, family allowances—that are defined in nominal fixed amounts will also become less important in relation to money income, and taxpayers with the same initial real incomes may end up paying very different amounts in income tax. If government took no action and inflation proceeded at high rates, a substantial number of people would eventually become subject to the highest marginal rate of income tax. This kind of interaction between inflation and progressivity affects not only the distribution of income and the level of tax revenue but also the usefulness of the tax as a stabilization device and even the allocation of resources.

Adjustment techniques

Many countries have taken action to correct the increased tax burden resulting from inflation. The most common method adopted to offset undesired rises in effective tax rates has been to adjust, from time to time, some or most of the principal tax items defined in money terms—exemptions, deductions, and the limits of income brackets. A few countries have gone further and have introduced legal provisions that ensure more or less automatic adjustment of these items in response to price level changes. The following discussion concentrates on schemes containing such rules for adjustment.

In Argentina, Brazil, Canada, Chile, Iceland, and the Netherlands, schemes involve yearly adjustments, based on changes in price indices, of some or all of three categories of basic items fixed in money terms. Argentina, in fact, adjusts exemptions and deductions but not income bracket limits. A second type of adjustment scheme— involving changes in tax rates according to a particular index—is used in Denmark (which also changes personal exemptions and income bracket limits), and legislation for such a scheme exists in Sweden and in 23 of the 25 Swiss cantons.

The type and degree of coverage by the adjustment schemes may be governed by different criteria. In general, the idea behind the inflation adjustment schemes is to continue taxing each level of income at approximately the same rates as in the base year. The schemes assume that tax rates prevailing in the initial year reflect a socially desirable income tax burden. If this is the case, i.e., that the society (or its legislators) regards the tax schedule as reflecting the desired preference about tax burden distribution, then the introduction of a comprehensive adjustment mechanism appears justifiable in equity terms.

Several studies have shown that, without such a scheme, the combination of inflation and progressivity particularly hurts people in the lower income level and people with a large number of dependents.

There is, however, a choice between the two adjustment systems already described. Both are equally simple, but tax rate adjustment has the drawback that it involves a continuous lowering of marginal tax rates for people in the highest income brackets. If tax rates are adjusted downward in proportion to price increases, the most likely result will be a decrease in the average tax rate for all taxpayers and a consequent reduction in the progressivity of the tax schedule.

On balance, the system based on periodic adjustments of the limits of income tax brackets and of other items fixed in money terms appears superior. In such a case, all items, including the income bracket limits, must be indexed in order to preserve the distribution of the tax burden roughly unchanged over time. A
system of adjusting exemptions and deductions only (as in Argentina) pays more attention to people in lower income brackets. The assumption then is that further changes in the distribution of the income tax burden are being sought through inflation.

The choice of the index, the degree of discretion allowed in the correction factor, and the range of items covered give rise to different problems in the application of the adjustment schemes.

**Country experience**

Between 1961 and 1965, Brazil operated a system by which tax items were defined in terms of legal minimum wages, which were adjusted each year by the Government, generally in line with the change in the price level. The experience showed that by linking the adjustment scheme to some other economic variable, the structure of the tax system may become linked to policy measures that conflict with the goal of the adjustment scheme. For example, the state may wish to change the level of minimum wages in pursuit of other long-run structural changes or short-run stabilization policies. But changes in the minimum wage will also affect the structure of the income tax in ways that may be considered undesirable.

The same result could also occur in Chile, where exemptions for several income categories and bracket boundaries for the progressive tax schedule are defined in terms of basic wages (sueldos vitales). Although those basic wages are at present determined in accordance with changes in the price level, the Government may, in future, prefer to adopt a different approach, which could affect the whole structure of the income tax.

In Iceland, the Government each year issues an index that is used in adjusting income tax brackets and exemptions. Since the index is intended to include some allowance for increases in prices as well as in real income, the system seems to permit the establishment of a sort of incomes policy designed to give people a share of the benefits of growth. The idea seems attractive, although, again, trying to achieve two policy ends at the same time by using only one policy instrument could create problems of policy design.

The variant followed by the Netherlands has also been a mixed package. In 1971 the Dutch introduced a system by which most of the relevant items were to be adjusted yearly by an inflation correction factor computed according to changes in the consumer price index. The system became effective in January 1972, but it was later suspended in the 1974 budget when other measures were introduced to give people in lower income brackets relief from the increase in taxes caused by inflation. A characteristic of the system is that the correction factor resulting from index computations can be adjusted downward, although it cannot be lower than 80 per cent of the value originally estimated (indeed, during the two years that the system was effective, the tax authorities took advantage of the full downward adjustment and implemented only 80 per cent of the correction factor). On the one hand, a full adjustment scheme is provided, but, on the other hand, the possibility of using the adjustment to increase revenue or to keep the system more flexible is contemplated. It should be added that the flexibility is asymmetrical in the sense that the adjustment of the correction factor can be made downward, but not upward. In other words, while an increase in real tax rates is possible, a reduction in real tax rates cannot be accomplished directly by means of the adjustment procedure.

The choice of index may also be important. Ideally, the best approach would probably be to use several indices, each reflecting the increase in prices of the bundle of goods purchased by a particular category of taxpayers with, say, a given average real income. Clearly, this is extremely difficult if not impossible in practice in most countries (although indices for different income groups have been calculated in the United States and Japan). An alternative is to use the index that reflects the changes in prices of goods acquired by the largest number of taxpayers—usually the consumer price index or the cost of living index. This procedure means, of course, that those income groups whose expenditures are not well measured by changes in the consumer price index will be affected differently by inflation—even with an adjustment scheme—than those (for example, urban industrial workers) whose purchases correspond more closely to the "market basket" measured by the index.

One point of difference in inflation adjustment schemes relates to the treatment of the influence of indirect taxes on the price index adopted. In the Netherlands' system a correction is made for changes in the cost of living as a result of indirect tax changes. The case for this correction is that if the Government wants to raise (or lower) taxes for stabilization purposes, there is no reason to offset the increase (or decrease) in tax collection by a countermeasure. On the other hand, a reason for ignoring indirect tax changes is that taxpayers will be affected in exactly the same way whether an increase in prices comes from a rise in taxes or from any other source. Therefore, given the distributional considerations on which inflation adjustments are based in the first place, it appears more appropriate not to make allowances for price changes resulting from indirect tax changes. A better way of handling the problem of conflicting goals—such as equity and stabilization—may be to allow the correction factor to depart within certain limits from that resulting from strict application of the chosen index. In this way, the desired relative distribution of the burden can be maintained while the total income tax yield is adjusted to economic conditions.

**Equity issues**

Probably the main consideration favoring the adoption of an inflation adjustment mechanism is equity. As noted earlier, the introduction of such a system seems justifiable if the initial distribution of the tax burden is regarded as one corresponding to the preferences of society, but its desirability is less clear if the society considers that the distribution should be altered.

Progressivity in the income tax law coupled with inflation can modify the distribution of the tax burden. But it seems doubtful that the combination of inflation and progressivity will produce the precise change required to fit the preferences of society. If the distribution of the tax burden is to be changed, it seems preferable to make a specific alteration to the tax schedule to reflect the desired change in tax liabilities for different levels of income, rather than to allow inflation to produce somewhat unpredictable results. Once the desired change is achieved, the adoption of an automatic inflation adjustment scheme will allow that particular distribution to be maintained.

Inflation also has different effects on taxes levied on income from different sources. While labor income is subject to personal income taxation where progressivity and exemptions fixed in money terms play an important role, business income is frequently taxed separately at proportional (i.e., nonprogressive) rates. The level of taxation of business income, however, is also affected by inflation,
since some items are not automatically adjusted: typical cases are depreciation charges based on the historical value of assets and some methods of inventory valuation. In addition, capital gains taxation normally makes little or no allowance for inflation.

These differences pose the question of whether it is fair to compensate some groups in society for inflation but not others. However, as one moves upward in the income schedule, an increasing proportion of total income usually consists of income from capital and from capital gains. The basically proportional taxation of business income and the favorable treatment of capital gains found in most countries thus tend to mitigate the increase in tax rates that people in the higher brackets would otherwise face when inflation moves them upward in the tax schedule.

Similarly, the existence in most industrial countries of an income tax withholding system for wages and salaries involves discrimination against income from labor. Since withholding at source does not allow any time lag between receiving income and tax payments, labor income is likely to be subjected to higher real tax rates than property income in periods of inflation. At such times, taxpayers pay less tax in real terms the longer they are able to delay payments. Since those in the lower and middle income brackets typically receive more of their income in the form of labor income, an inflation adjustment mechanism will generally be relatively more beneficial to income from labor and thus to persons in the lower and middle income brackets. This line of argument may suggest that the adjustment perhaps ought to be applied to labor income only—for example, by indexing only exemptions and deductions.

How taxation of business income is designed also has clear connections with the general question of adjustments for inflation. Some countries, in particular those with a long history of inflation, have enacted legislation that includes such measures as changes in the limits of deductible allowances and periodic revaluation of assets or indexing of depreciation charges. A related issue concerns the tax treatment of capital gains. Most authorities on public finance claim that the appropriate definition of income should be consumption plus changes in net wealth. If this concept of income were adopted, it would be reasonable to include capital gains in an adjustment system, although such a scheme would be hindered by problems over the kind of assets to be covered, the type of index to be adopted, and over distinguishing between capital gains that do, and those that do not, originate from inflation. Furthermore, the fact that most countries already provide some sort of favorable tax treatment to capital gains somewhat weakens the argument for an adjustment scheme.

The income tax consequences of inflation represent only a minor part of its total effect on the distribution of income and wealth. As a result, inflation adjustment schemes for personal income tax, no matter how well designed, can at best eliminate only some of the undesirable distributional effects of inflation. Other measures must be adopted to help those who are unable to protect their relative incomes when inflation occurs.

**Economic stabilization**

A traditional argument is that income tax plays an important role as a stabilization instrument. If aggregate income is rising, government taxes away increasing proportions of real income, which then has a dampening effect on the expansion of the economy by lowering total demand and, it is hoped, reducing inflationary pressures. The contrary also holds when aggregate income is falling: the reduction in the overall tax burden should stimulate demand and reduce deflationary pressures.

The change in the stabilization properties of the system resulting from the introduction of an inflation scheme can be examined in relation to two alternative situations: (1) where no adjustments for inflation are made; and (2) where tax rates are changed from time to time to offset some of the effects of inflation.

Assuming that both income and prices move in the same direction, it is likely that the adoption of an inflation adjustment scheme (as compared with the no adjustment case) will tend to reduce but not to eliminate the stabilization properties of a progressive income tax structure. As real income grows, individuals will still continue to enter higher income brackets and become subject to higher rates; and tax collections will still increase at a rate greater than the rate of growth of income. If there is a recession, the converse will hold.

If an inflation adjustment scheme is compared with a system of changes introduced from time to time, no definite conclusions as to the relative performance of the two systems can be reached. With a system of ad hoc discretionary changes, the timing of the adjustments becomes crucial. If the reduction is made in the downswing of the cycle—for example, to adjust for previously accumulated distortions from inflation—then such a procedure will normally tend to be stabilizing. If it is made in the upswing of the cycle, it tends to be destabilizing.

This discussion assumes that price and activity levels move together. In fact, recent years have frequently seen price inflation accompanied by declining activity. The behavior of unadjusted income tax receipts in such a situation would then seem to be the reverse of what is required on stabilization grounds, since they might be rising sharply in response to price increases at a time when the level of real activity in the economy is falling. Hence, given a combination of inflation and declining real activity, the adoption of an automatic adjustment

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scheme should normally tend to increase, rather than to decrease, the stabilizing power of the tax system with respect to changes in real income.

If the aim is to maintain the built-in stabilizing power of the income tax at the highest possible level, the use of a variable correction factor appears desirable. A method similar to the Dutch system could perhaps be used, but modified so that the correction factor could be adjusted upward as well as downward in accordance with economic conditions. An alternative might be to rely on surtaxes or tax rebates computed in proportion to adjusted income tax payments and fixed according to the cyclical situation. Either of these approaches would permit the tax system to yield the desired macroeconomic effects without distorting the intended distribution of the tax burden. The combination of an adjustment scheme and one of the devices mentioned above would thus enable policymakers to use different instruments for different goals.

Tax revenue

The adoption of an adjustment system would mean the abandonment of an extremely convenient method of increasing tax revenue. When the limits of tax brackets, exemptions, and the like are fixed in money terms, an increase in nominal incomes will lead to a rise in real tax revenues without any great resistance from the taxpayers (at least during periods of mild inflation). And the degree to which citizens are willing to pay a tax is a proper consideration in the formulation of any tax policy. If, however, a government adopts an inflation adjustment scheme, income tax collections will usually be reduced and alternative means of financing have to be sought. These alternatives may entail greater taxpayer resistance than that associated with the method provided by inflation and progressivity. The results may be a slower rate of expansion of the government sector than would take place with the more painless extra revenues arising from inflation. Furthermore, there is no guarantee that the net distributional outcome of adjusting income tax to inflation and of drawing on new revenue sources will be more progressive than the unadjusted tax system. They may equally well be more regressive.

Continuing inflation

The main arguments for the adoption of an inflation adjustment system rest on equity considerations. On these grounds, once a desirable distribution of the tax burden has been achieved, it can be maintained by introducing a system of automatic adjustment. Its introduction may in some circumstances impair the stabilizing power of the tax system, but its use can be combined with other measures so as to preserve the income tax as a useful tool for stabilization purposes.

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The economic characteristics discussed above are obviously not a comprehensive list for analyzing problems of income distribution in underdeveloped countries. They serve only to translate the general concern about low-income groups—the lowest 40 per cent—into a concern about specific groups with defined socio-economic characteristics. But this is only the first stage of the analysis of distributional problems. These characteristics together with the characteristics of the rest of the economy interact to determine the distribution of income between groups. The scope for government intervention is then determined by the extent to which we can affect these interactions through policy. (Subsequent chapters in Redistribu- tion with Growth are addressed to these questions.)
The change in attitudes has also been the result of increased knowledge about the characteristics of foreign investors. In particular, host countries have come to realize that monopoly and oligopoly characterize multinational firms. Consequently, they have attempted to devise policies that would improve their bargaining position vis-à-vis foreign firms. To this end, groups of countries, such as those in the Andean Common Market (Bolivia, Chile, Colombia, Ecuador, Peru, and Venezuela), have come together to formulate policy and present a united front rather than compete with each other for foreign investment.

The policies of the Andean Group, which are representative of the new directions being taken by many developing countries, include limitations on the amount that can be paid as royalties by local firms (including foreign subsidiaries) for foreign technology. The purpose of this restriction is to eliminate competition by local firms for foreign technology, and thus reduce the price paid. The restriction is also designed to prevent foreign firms from using royalties to extract excess profits from the host country.

**Fading out**

A more controversial policy of the Andean Group is the so-called “fade-out.” The fade-out regulations require that foreign firms wishing to take advantage of the common market divest themselves of 51 per cent of the subsidiary’s equity over a 15-year period. Thus, foreign investments must either be, or become, joint ventures.

**Simple property tax**

The most rewarding path to follow if an agricultural land tax is to contribute much to development is to concentrate on establishing a solidly based simple property tax with meaningful rates, rather than attempting to achieve primarily nonfiscal purposes through graduated rates of tax, special taxes on idle lands, and similar devices. The most essential requirement for any effective land tax system is a land registry, preferably centralized; in addition, all land taxes except the simplest land area tax also require a clearly established and effective valuation procedure.

It is hard enough to satisfy these conditions in most developing countries but
the task of levying effective land taxes has often been made unnecessarily difficult by the attempt to achieve, through the land tax, such nonfiscal purposes as bringing idle lands into production and breaking up large landed estates. In practice, the effective rates of tax have been so low that few, if any, of these nonfiscal objectives have actually been realized. Indeed, one may even suggest that the undue complexity of tax form associated with these attempts tends to be associated with a light tax burden, since the effort needed to clarify the nonessentials diverts attention from the central question of tax level.

Concentration of effort

The best approach to land taxation for most poor countries is thus to focus directly on the objective of revenue, not on various refinements intended to improve the allocation of resources within the agricultural sector or the private distribution of incomes in rural areas. These other objectives are valid but less important than achieving an effective land tax in the circumstances of most, though not all, developing countries. Attempts to achieve them are likely to confuse the main issue and to make its attainment substantially more difficult. In addition, the use of scarce administrative resources in subtle schemes of this sort is wasteful, with perhaps a partial exception in some instances for special assessments or betterment levies.

For any degree of effective land taxation, there must be some critical minimum of political support and administrative capability. Given these, the tax should be designed to produce the required revenue in a roughly acceptable ("equitable") fashion and with as few disincentive effects as possible. The design might include such features as linking tax revenue to local expenditures—which will help create support for the tax itself—and index adjustment of the tax base, which will enable it to maintain its place in an expanding economy. When the development of society and its institutions permit, more advanced fiscal instruments such as income and wealth taxes may be applied to some extent in agriculture. Until that time, however, there seems no reason to detract from the limited, but useful, potential of land taxes by trying to convert them into a tool that can do all things for all men.