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POLICY WATCH
Three Challenges for Public Finance

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Pierre Pestieau surveys the views of the public-finance profession about its recent past and future directions. The many enthusiastic and positive responses he received brightened up his own prior pessimism about the field, although he remains concerned that the profession is distracted by elegant theoretical exercises that are too restictive to be instructive for important policy questions. As an example of an overlooked question he cites the public-policy implications of economic openness.

I am definitely in the camp of optimists about the future of public finance. Moreover, I believe that public-finance economists are thinking carefully about many of the key policy issues of the day—witness the large group of newly minted Ph.Ds doing fascinating and immediately relevant work in health economics. It is also notable that the issues raised by openness are attracting more and more attention in the public-finance profession.

Because I am optimistic, I will focus not on the past but rather on the future directions of public finance. I will identify three areas of research that I believe are important challenges for the profession. Because of my own limited perspective, these challenges relate exclusively to the taxation wing of public finance and are oriented toward a North American perspective. Two of the challenges I discuss were ranked in the Pestieau survey as being among the most important future directions, so that my emphasis is not entirely idiosyncratic. One challenge is precisely the topic he singled out—the fiscal implications of openness.

The three key challenges that I see confronting tax economists in the 1990s are

1. To learn as much as possible from the significant shifts in tax policy since 1980,
2. To reconstruct the normative principles of tax policy in the context of a rapidly integrating world economy, and
3. To reconcile the theories with the realities of the administration and enforcement of tax systems.

In what follows, I discuss each of these three challenges in turn and then conclude by commenting on the connections among these challenges.

1. Learning from the 1980s

Empirically minded tax economists finally had their dream come true in the 1980s. Before that time, they often groused about the difficulty of investigating the effect of changes in the tax structure when the tax structure never changed. In the United States, the federal corporate income tax rate applying to all but very small firms had been between 46 and

52.8 percent since 1951; the top personal tax rate had been 70 percent since 1971. The ratio of personal and corporate income tax collections to GDP stayed within a tight range.

This complaint is no longer widely heard in the United States. The corporation income tax rate was reduced from 46 percent in 1986 to 34 percent by 1988. Depreciation allowances were greatly accelerated in 1981, only to be decelerated again in 1986. The investment tax credit, a near-permanent feature of the tax landscape since 1962, was abolished in 1986 and has not yet reappeared. Long-term capital gains, preferentially taxed since the Revenue Act of 1921, were taxed as ordinary income as of 1986. The top personal tax rate plummeted in two mighty steps, from 70 to 50 percent in 1981, and then to 28 percent in 1986. The ratio of GDP of federal personal and corporate income tax revenues also fell sharply from 11.97 percent in 1981 to 10.39 percent in 1983 and 10.15 percent in 1984, a larger drop than in any comparable period in recent history. Nor was significant tax change a feature only of the United States. In the 1980s many countries embarked on income tax rate flattening and base broadening.

We need to make the most of this host of changes and carefully examine the evidence from this period, not only from the United States but also from the many other countries that underwent significant tax changes. All of the important empirical issues ought to be reexamined in the new light of this evidence, including the effect of taxes on labor supply, saving, nonresidential and residential investment, portfolio composition, capital gains realizations, and charitable contributions. Based on these findings, our views of the short- and medium-term incidence of taxes should be reexamined.

The Tax Reform Act of 1986, and many of the tax reforms of other countries, were justified in part by the efficiency gains of leveling the playing field. To counteract the unrelenting political pressure to return a high rate, narrow-base tax system, it would be valuable to construct some convincing quantitative evidence of the efficiency gain of tax reform. Of course, the area of Harberger triangles is difficult to measure—and changes in area are even more difficult to measure. Nevertheless, if we are ever to get quantitative measures of efficiency, this is the place to look.

Not only are these important questions to answer, but there are new data sources that are well suited for the analysis. I have in mind the longitudinal panel of individual tax returns, maintained by the Ernst & Young/University of Michigan Tax Research Database. It contains over two hundred items per tax return for over 250,000 taxpayer-years from 1979 to 1990.

Because the data span both major tax changes of the 1980s, it provides researchers with a sample featuring changes in personal tax rates that are independent of changes in income, thus allowing one to separately identify price and income effects. Moreover, comparing a taxpayer's behavior in 1990 to the same taxpayer's behavior in 1985 allows researchers to avoid the statistical bias that can arise in the presence of unobservable individual-specific influences on behavior; that is, my own behavior before a tax change may be the best possible control for assessing the tax effects on my behavior of a tax experiment. Panel data is also especially helpful in distinguishing between the transitory and permanent effects of a given tax change and in separately identifying the behavioral response to permanent tax changes, temporary tax changes, and anticipated future tax changes. For these questions the tax changes of the 1980s may actually have been too frequent, because there are only a few years for which the tax law is not either changing or widely anticipated to be changing in the near future.

My own tentative reading of the evidence from the 1980s analyzed so far suggests that there is a hierarchy of behavioral responses to taxation. At the top of the hierarchy—the most clearly responsive to tax incentives—is the timing of economic transactions. The pattern of capital gains realizations before and after the 1986 act is the best example of this phenomenon, because realizations in 1986 were double the amount in adjacent years, and realizations in December of 1986 were *seven times* higher than in adjacent Decembers. There are many other examples, including foreign direct investment into the United States, which in the fourth quarter of 1986 was more than double the rate of adjacent quarters, as investors raced to beat the expiration of tax rules favoring mergers and acquisitions, and donations of appreciated assets, which showed a large increase in 1986, followed by declines in 1987 and 1988, in response to the inclusion of otherwise untaxed appreciations in the alternative minimum tax base beginning in 1987. In these and other instances, the opportunity to realize temporarily available tax savings obviously dominated the cost of accelerating transactions.

In the second tier of the hierarchy are financial and accounting responses. There is substantial evidence of the reshuffling of individual's portfolios and repackaging of firms' financial claims in response to both the 1981 and 1986 tax acts. For example, after the Tax Reform Act of 1986 individuals were quick to change the form of much of their debt away from newly nondeductible personal loans into still-deductible mortgage debt.

On the bottom of the hierarchy, where the least response is evident, are the real decisons of individuals and firms. The responsiveness of labor supply, saving, and investment have all been lower than a reading of the empirical literature circa 1980 might have led one to expect. This may reflect a downward bias to estimates of behavioral response based on time series or panel data, if people are slow to react to a new environment, or if people believe tax changes that apply to the long-term consequences of current decisions are temporary. Hopefully, time, and further careful analysis, will tell.

2. Coming to terms with the global economy

Thanks to the political forces that be, there have been striking changes in tax policy over the last fifteen years. Thanks largely to technological advances, national economies have become much more integrated into a seamless global economy. Openness has three important implications for tax policy:

1. Factors, goods, and other potential bases for taxation can flee a country in response to taxation or be attracted to a country by relatively light taxation.
2. The interjurisdictional division of revenues is not a matter of indifference. Each country must therefore "compete" with other countries for revenues.
3. It is more difficult to collect revenue from tax bases outside the country.

In view of these facts, the normative theory of tax policy must be recast. Stated simply, the conundrum is as follows: a small open economy may not *want* to impose any distortionary taxes on mobile factors, especially capital imports, but it may not be *able* to impose taxes on capital exports. The first statement follows directly from optimal income tax theory; the second is a fact of life.

One solution to the conundrum is for small countries to simply abandon any attempt to tax capital income. This can be accomplished by adopting consumption-type value-added taxes instead of income taxes. It probably cannot be easily accomplished by taxing labor (but not capital) income, due to the opportunities for converting labor compensation into what is apparently capital income. The VAT solution is not helpful to a country that wishes to levy progressive taxes on a broad measure of ability to pay. Is this unwise, or even practically impossible, in the absence of multilateral cooperation on taxation? This critical question, and the range of normative tax questions, need to be addressed anew.

Hand in hand with the growth of global economic integration has come the increasing importance of multinational enterprises (MNEs). The rules and regulations governing the taxation of MNEs are exceedingly complex but can no longer be ignored. To cite but one example, the cost of capital, even of *domestically located* capital, for MNEs depends on the Byzantine rules governing the allocation of interest expense to foreign-source income. This is one case of many where the tax impact on purely domestic activity cannot be ascertained without reference to the international provisions of a tax system.

Several carefully done recent studies of the cost of capital have concluded that cross-border foreign direct investment is taxed more heavily than domestic investment. All of these studies, though, ignore completely the opportunities that MNEs have to shift income from high-tax to low-tax jurisdictions, through transfer pricing and financial policy. The extent of such shifting is limited by the statutes, regulations, and enforcement regime in place in the high-tax countries, so that substantial tax revenue is still collected. Nevertheless, substantial income shifting has by now been well documented.

Income shifting raises several difficult challenges. First, how does one go about measuring the "income shifting adjusted" cost of capital? Such a measure would reflect the fact that Ireland and Puerto Rico (for U.S. MNEs only) are attractive places to invest largely because once a manufacturing affiliate is in operation there, MNEs can shift income into these low-statutory-rate jurisdictions. In the presence of income shifting, a standard Hall-Jorgenson, King-Fullerton relationship between the statutory rate and tax base on one hand and the marginal effective tax rate on the other hand does not hold because a low statutory rate is a magnet for taxable income in a way that a generous tax base is not.

Thus in international tax there are challenges for both theorists and empiricists. There are also challenges for visionaries. The crazy quilt of overlapping and inconsistent tax systems strongly suggests that there may be considerable efficiencies to be gained from some kind of multilateral tax harmonization, efficiencies stemming from both a more economic allocation of capital and labor and also from less resources devoted to revenue defense, revenue attraction and the complexities of the laws in place.

Why is there a GATT, the General Agreement on Trade and Tariffs, but not a GATTT, with the third T standing for Taxes? Taxes can have as powerful (and inimical) an effect on the allocation of resources as tariffs and other commercial policies, but no multilateral agreement analogous to the GATT exists. Instead there is a network of bilateral tax treaties that vaguely approximate, but do not come near to achieving, free trade in capital. A challenge for a continually integrating global economy is to establish a framework for taxation that does not interfere with the benefits that openness can produce. This task requires

a visionary because past experience, including that with the Ruding Committee of the European Commision, suggests that it is difficult to persuade countries to give up sovereignty over their tax system.

3. Help in the trenches

The third challenge to academics is to provide more guidance to those people in the trenches who are administering and enforcing tax systems. As Milka Casanegra of the International Monetary Fund has noted, often in developing countries tax administration *is* tax policy. As I will argue below, it is also very important, if not identical, to tax policy in developed countries.

Choices among alternative tax policies must confront the fact that some taxes can be administered more easily than others. With some exceptions, standard optimal tax theory has dealt with the issue of administration and enforcement by making extreme assumptions about what kinds of taxes are available to the policy maker. For example, on paper an ability tax dominates an income tax because it causes no distortion in behavior. The study of optimal income taxation is appropriate only after ability taxes are ruled out, usually by appealing to the difficulties of measuring ability.

Extreme assumptions about the feasibility of tax instruments are analytically convenient but incorrect. Ability can be measured, although with some expense and error. On the other hand, income cannot be measured perfectly, and the degree of accuracy in income measurement depends on the resources expended toward this goal.

Extreme assumptions about the feasibility of tax instruments may also preclude consideration of fundamental changes in policy. For example, a common assumption made in optimal taxation models of developing countries is that income and consumption arising in the agricultural sector are not taxable, although marketable surplus is taxable. Much interesting analysis proceeds from this assumption, but none asks at what point it makes sense for a country to attempt to tax agricultural income even assuming that it will have only limited success in doing so. There is strong evidence that countries with low literacy rates tend to rely on highly distorting but (relatively) easily collectable import and export taxes, and shy away from efficient (on paper) but administratively difficult land taxes. Under what conditions should an imperfect land tax be tried? The answers to these questions depend on the resource cost of administering the new tax instrument relative to its effectiveness, or degree of success. This latter notion has several dimensions, including the true revenue yield and the extent and nature of the mistakes that are made in administration.

Similar choices arise in the tax systems of developed countries. Allowing taxpayers to take a "standard deduction" certainly reduces administrative and compliance costs but also reduces the horizontal equity of the tax system. Exempting from taxation the rental value of owner-occupied dwellings, taxing capital gains at realization, and allowing generic depreciation schedules, to name but a few tax features, implicitly reflect tradeoffs between administrative and compliance costs and other objectives of the tax system. An important task for optimal tax theory is to formalize, in order to clarify, these tradeoffs.

The collection of taxes is greatly facilitated when it is based on easily observable transactions. This has important implications for the implementation of an income tax because

some income flows are not reflected in any transaction. The attempt to use transaction-based measures to measure income flows causes its own difficult problems, about which otpimal taxation theory is virtually silent. For example, an intertemporal version of the theory can, for a given utility function, prescribe the optimal tax rate on present and future consumption, and thus the optimal tax rate on capital income. But a tax imposed on, for example, capital gain realizations is not a tax on second-period consumption but rather on the activity of adjusting one's portfolio or one way of drawing down one's assets for consumption. The apparent high responsiveness of capital gains realizations to taxation reflects the availability of highly substitutable financial strategies and is not related to any characteristic of utility functions such as the elasticity of intertemporal substitution.

The difficulty of measuring capital income flows leads inevitably to a situation in which the effective rate of tax on capital income varies widely depending on the form and intermediation process for holding wealth. Unfortunately, economic distortions and unintended distributional consequences arise whenever a tax system differentiates both on the basis of the financial arrangements for holding wealth and on the recipient of the income flow from that wealth, as it does under a progressive tax system. What tends to occur is high-tax-rate individuals using relatively lightly taxed instruments for holding wealth and low-tax-rate individuals using relatively highly taxed instruments. In the extreme case, individuals simultaneously hold a long position in a lightly taxed asset and a short position in an identical (or similar) asset that is highly taxed. The net result of these phenomena, generally referred to as *tax arbitrage*, is that the government may collect little or no revenue from its attempt to tax capital income progressively, although in the process it may cause significant economic inefficiency. The Tax Reform Act of 1986, by flattening the schedule of marginal tax rates and reducing the differentials in taxation of capital income, undoubtedly has mitigated this problem somewhat.

The problems that stem from the difficulty of measuring income have led some to advocate the scrapping of income taxation in favor of a consumption-based tax. (Of course, the change from an income tax to a consumption tax might also be supported on optimal taxation grounds, depending on the nature of utility functions.) The problem of tax arbitrage suggests that the rate of tax on capital income is not as important as its uniformity with respect to the financial structure, intermediation process, and the identity of the wealth owner. A move toward either a truly comprehensive income tax, which taxes capital income uniformly at a positive rate, or a move toward a consumption tax, which taxes capital income uniformly at a zero rate, may be an improvement. Which is preferable depends on which system is more likely to be able to sustain uniformity, which is critically related to how easily the base can be measured. From this perspective the winner of the great debate over the relative merits of the consumption versus the income tax rests on an issue of measurability and thus requires a shift in focus away from the structure of utility functions and production functions to the technology of tax collections.

This shift in focus is challenging as well as exciting because it requires a rethinking of both theoretical and empirical research. The normative theory must come to terms with such issues as the choice of tax instruments, the optimal design of enforcement policy, the tax treatment of financial strategies (as opposed to goods or income flows), and more generally, must develop a descriptive and normative framework in which to evaluate the issue of tax arbitrage.

To make the theory of optimal tax systems operational, empirical work must proceed on the technology of collecting taxes. This effort includes estimating the collection cost of alternative tax systems. It is important that the inputs to this process be related to a multidimensional measure of output. More resources devoted to tax collection may certainly increase revenue and can also reduce the horizontal and vertical inequities that accompany tax evasion.

4. Conclusions

There is one common thread that runs through all three of these challenges. It is a plea to look beyond the standard model of taxation in which it is assumed that the taxed goods directly enter into individuals' utility functions or firms' production functions. At a very basic level this assumption is incorrect because what is taxed is what the taxpayer reports or the tax agency observes, not what the taxpayer consumes or the firm uses and produces. Thus we must analyze tax *systems* in which the compliance and enforcement elements are explicit.

This focus is especially important for international taxation issues because of the difficulty of taxing nonresidents' income and the foreign-source income of domestic residents. It is inevitable that tax systems are designed with these practical difficulties in mind, and, in order to participate fully in the policy debates, economists ought to think carefully about these issues.

The distinction may also hold the key to making sense of the empirical evidence about the impact of the U.S. tax changes of the 1980s. There are many avenues of response to tax rate changes other than changing one's consumption bundle or input mix; we need to think hard about whether these responses preclude or merely accompany the "real" responses that are of ultimate interest.

If public finance is to decline in the 1990s, it will not be because of a lack of intellectually exciting challenges that confront us. There are many such challenges, and I am confident that they will attract the attention of both newly minted and well circulated economists.