

## **Directions in Tax and Transfer Theory**

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## **I. Introduction**

As the theory of public finance evolves in response to new insights and empirical evidence, opportunities continually arise to modify national fiscal systems to reflect these new insights. The ultimate objective of such innovation is to improve the equity-efficiency trade-off by making more informed choices.

In this essay, I consider several areas in which theory and evidence have evolved in recent decades, in each case drawing implications for the design of tax and transfer theory. I start with a review of what one might call the “traditional accepted wisdom” as of, say, the late 1960s, recognizing of course that there have always been disputes within the profession and that my characterization oversimplifies the state of knowledge at the time. I then discuss how thinking, evidence and, in some cases, policy as well have developed in the years since.

## **II. The Traditional Setting for Tax and Transfer Policy**

### *A. The Broad-Based Income Tax*

In the 1960s, and indeed well into the 1970s, the standard objective of tax policy design, well represented, for example, in the work of Pechman (1987), was the achievement of a broad-based income tax. Consumption taxes existed, of course, notably in Europe in the form of the value added tax, but these arose as improvements that eliminated the cascading effects of turnover taxes, and as indirect taxes were not viewed as effective vehicles for progressive taxation.

Under the income tax, annual measurement was the common approach, even though it was understood that this had the effect of penalizing individuals whose income fluctuated from year to year, for which some sort of income averaging provision might be appropriate.<sup>1</sup>

By keeping the tax base as broad as possible, marginal tax rates could be prevented from rising. Low and uniform rates (which would also be implied by full inclusion of income in the tax base) would help to avoid unnecessary deadweight loss by limiting the distortions to earning income and among the sources of income. Moreover, the avoidance of base-narrowing provisions would directly limit tax expenditures, which were seen by many as often poorly-conceived and lacking the oversight given to direct expenditure programs (e.g., Surrey et al. 1973). Finally, a broad-based income tax would be relatively simple for taxpayers and relatively easy to administer, because it would reduce the importance of distinguishing among types of income and the scope of deductible expenses.

Within the income-tax framework a progressive income tax and a low-income transfer system could be combined to achieve a suitable degree of progressivity that balanced the objectives of economic efficiency and distributional equity. Quite high top marginal tax rates were acceptable as long as these rates did not apply to a large share of the population, and an important reform idea with respect to low-income transfers was the negative income tax, which would have replaced the existing range of low-income support programs with per capita or per family lump-sum transfers. As with the broad-based income tax itself, the negative income tax was viewed as a way of reducing the tax system's distortion of individual decisions, and it was supported by economists covering an impressive political range, including Milton Friedman (1962) and James Tobin (Tobin et al. 1967).

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<sup>1</sup> The United States, for example, implemented a system of 5-year income averaging in 1964.

A key issue relating to the income tax base was the choice of the unit of taxation. Some countries assessed tax on an individual basis, while others, notably the United States, had settled on the family as the unit of taxation, largely because of the legal standing of within-family transfers of assets and income that made individual income determination difficult. It was largely understood that the ability to split income afforded families an advantage over single individuals when facing a progressive tax systems with rates based on the individual, but many other implications of the choice of taxable unit remained to be considered, as did the nature of household decision making.

### *B. The Corporate Income Tax*

As of the late 1960s, it was still common for countries to impose classical systems of corporate income taxation, treating corporations as entities independent of their shareholders and imposing tax on corporate incomes. The distortions and incidence of such tax systems had already been described in the influential work of Harberger (1962, 1966), who characterized the corporate income tax as a surcharge on corporate capital that drove capital inefficiently out of the corporate sector and through this adjustment process imposed an extra tax burden on capital as a whole, not just on corporate capital. The further distortion of financial policy had already been identified by Modigliani and Miller (1958), who observed that the corporate interest deduction led to a violation of their invariance result with respect to corporate financial policy.

These apparently gratuitous distortions in the allocation of capital and the determination of financial structure prompted consideration of corporate tax reforms, notably through some form of “integration” of corporate and individual income taxes. While “pure” integration – treating corporations as pass-through entities and attributing their income directly to shareholders – proved too difficult to accomplish, different schemes of dividend relief had already begun to

arise, most notably through reduced corporate tax rates on distributed earnings adopted via a split-rate system or the basically equivalent imputation system of shareholder tax credits for corporate taxes paid. By relieving the “double taxation” of dividends and lowering the tax rates on equity income, these approaches attacked both distortions identified above, to the allocation of capital between corporate and non-corporate sectors and the choice between debt and equity finance.

While integration may have been an important tax reform objective, there was probably less intellectual support for reducing corporate tax rates. Indeed, at least one problem was seen in doing so, for if corporate tax rates were allowed to fall too far below top individual tax rates, then high-bracket individuals could lessen their tax burdens considerably by accumulating funds for extended periods within corporations.

### *C. Capital Gains and the Realization Principle*

The Haig-Simons definition of income as cash flows plus accretions to wealth has long been the accepted benchmark against which income tax bases were compared. In addition to the deviations from the Haig-Simons base due to exclusions from income and the provision of various tax deductions not related to the definition of income, however, a significant narrowing of the income-tax base occurred through observance of the “realization principle” that recognizes income as taxable only when it has been realized through some taxable event, such as the payment of wages or the sale of assets, rather than simply upon income accrual. Here, legal and economic perspectives were in conflict, and the problems of taxing income on accrual when such income might be illiquid and difficult to measure further contributed to prevalence of the realization principle in actual income tax systems and to the view that this deviation from the Haig-Simons base was qualitatively different from the others.

It was understood that taxing capital gains on realization lowered the effective tax rate on accrued gains by conferring a deferral advantage, and that this deferral advantage could also contribute to an undesirable distortion via a “lock-in” effect by encouraging individuals not to sell assets even when they would wish to do so in the absence of tax considerations (Holt and Shelton 1962). The primary policy approach to lessening the lock-in effect was a reduced tax rate on long-term capital gains, a policy that contributed to a further lowering of the effective tax rate on capital gains. The lower effective tax rate on capital gains was seen as the source for another distortion in the corporate sector, the decision between distributing and retaining earnings, but this distortion, too, could be lessened through the adoption of a dividend relief scheme.

#### *D. The Taxation of Cross-Border Income*

The world of the 1960s was very different than now with respect to international capital flows, with the Bretton Woods agreement and fixed exchange rates still in effect and capital controls much more common than they are today. Even so, the appropriate taxation of foreign-source income was an issue, with countries varying in their treatment of foreign-source earnings by convention and by treaty.

The most important perspective at the time, and one that is still influential today, was provided by Peggy Musgrave (1969), who discussed conditions under which different types of “neutrality” would be desirable. In particular, *capital export neutrality* – under which capital provided by a country would face the same overall rate of income tax regardless of the location of investment – would be desirable from the perspective of efficient world-wide capital allocation, and could be accomplished by having each country follow a system of world-wide taxation, taxing its outbound earnings at the same rate as its domestic earnings while providing a

tax credit for the income taxes imposed by foreign governments on the same earnings. *National neutrality*, achieved by providing a deduction for foreign taxes, would maximize the returns to an individual country, but would not lead to world-wide efficiency in the presence of foreign-source taxes.

Another potential norm was *capital import neutrality*, the condition achieved when the tax on returns to an investment in a given location would be independent of where the funds came from. Capital import neutrality could be achieved if each country followed the practice of territorial taxation, taxing at source the earnings generated within its borders but levying no additional tax on the foreign-source income of its residents. While the economic logic of capital import neutrality was perhaps less obvious than that of the other norms, there were conditions with respect to restrictions on government policy under which it, too, might be optimal, as also discussed in Horst (1980).

### *E. Second-Best Theory*

As of the late 1960s, the theory of optimal taxation was just being developed, but we already had at our disposal the important lessons of the theory of the second best (Lipsey and Lancaster 1956-57, Corlett and Hague 1953), which taught us that once one had moved away from a Pareto optimum, avoidance of distortion on any particular margin of activity was no longer necessarily optimal. This had implications not only for the design of commodity taxes in the presence of a labor-leisure distortion, but also for a range of other choices, such as the determination of the appropriate discount rate for public projects. Second-best theory left policy designers with the difficult task of determining whether any specific distortion worsened economic efficiency, and it seemed to undercut the strategy of piecemeal policy reform, under which one might seek to lessen distortions one set at a time.

### **III. Changes in Thinking, Evidence, and Policy**

In the past four decades, and in many cases in just the past few years, perspectives on the design of tax and transfer systems have changed considerably. Some changes reflect the evolution of economies. For example, the increased focus on taxes related to the control of externalities, notably taxes on greenhouse gas emissions, reflects increasing concern over the role of these emissions in the acceleration of global warming. Increased attention to the taxation of international capital flows is not surprising given the increased openness of world capital markets. But many changes in the focus of tax policy reflect the evolution of economic theory, the accumulation of empirical evidence, and perhaps also changes in the philosophy of economists and policy makers rather than significant changes in the economies themselves. The result has been a series of important shifts in prescriptions for good tax policy and in many instances changes in actual tax policies as well.

#### *A. The Choice of Tax Base: Income or Consumption?*

There is probably no larger shift in perspectives on tax policy than with respect to the choice of tax base for the economy's main system of progressive taxation. Arguments for an individual expenditure tax have existed for decades, of course, including the important contributions of Fisher (1939), and Kaldor (1955), who argued, respectively, that income taxes unfairly impose double taxation of saving and that consumption taxes can serve more effectively to impose tax burdens on accumulated wealth. Though these arguments were recognized, a serious move toward viewing the expenditure tax as a viable alternative did not begin until two important developments in the 1970s. The first of these developments was in economic theory, with the work of Atkinson and Stiglitz (1976) demonstrating, under certain conditions, the sufficiency of a progressive tax on labor income, and the application of this result to argue

against higher taxes on future consumption (Feldstein 1978). These results suggested that capital income taxation need not be a feature of the optimal progressive tax system, once one accepted the logic of considering individuals from a lifetime rather than annual perspective. Second, the reports of the Meade Committee in the United Kingdom (Institute for Fiscal Studies 1978) and the U.S. Treasury (1977) laid out how direct expenditure taxes might actually be implemented.

In the years since, there have been many additional contributions adding to both the theoretical support for progressive consumption taxes and the knowledge of how such taxes might be imposed. As to theoretical arguments, the work of Judd (1985) and Chamley (1986) showed that capital income taxes are undesirable in the long run under very general conditions regarding household preferences. Analysis of tax reforms, rather than static comparisons of different tax systems, highlighted an important efficiency and equity gain from consumption tax adoption, the taxation of consumption from existing wealth (Auerbach, Kotlikoff and Skinner 1983). Concerning implementation of a consumption tax, additional models that might be used have come to light, including the “flat tax” of Hall and Rabushka (1983) and a multi-rate version that Bradford (1986) called the “X tax,” both based on a subtraction-method value added tax but with labor income taxed at the individual level in order to facilitate a progressive rate structure. Moreover, evaluations of the X tax suggest that it can successfully replicate the distributional effects of the current income tax, at least for the United States, even among the top 2 percent of the lifetime-income distribution (Altig et al. 2001).

As the possibility of adopting a broad-based consumption tax has become more serious, however, the literature has also come to include contributions questioning the benefits of adoption in a number of ways. These include arguments that generous transition relief, as might be politically necessary to accomplish the shift, make the consumption tax far less attractive

(Auerbach 1996), that the distortions of capital income taxes may only relate to the risk-free rate and therefore may be small (Warren 1996), that market imperfections might make capital income taxation more attractive (Aiyagari 1995), that capital income might be an indicator of ability, even given labor income (Saez 2002a), and that taxing the returns to saving, by discouraging private saving, can help implement progressive labor income taxes by making it more painful for those with high-ability not to work (Golosov et al. 2003). Further, various recent results from the field of behavioral economics suggest that institutional factors may matter more than the tax base itself, and that a broad-based consumption tax need not promote saving more effectively than a series of specific tax-favored savings-promotion schemes.<sup>2</sup>

In summary, there are now serious qualifications as to the desirability of replacing the income tax with a broad-based consumption tax, and many arguments in favor of retaining capital income taxes in some form (Banks and Diamond 2008). But we still have moved a considerable distance from where we were several decades ago, when income taxes were the norm, provisions that moved us toward consumption taxation were treated as tax expenditures, and the question of whether capital income should be taxed *at all* was not commonly asked. One may still argue in favor of the uniform taxation of capital income and labor income because of the difficulty of distinguishing between the two, but otherwise there remains little logical support for the proposition that these two types of income should generally be taxed at the same rate. And, while no major country has yet to replace its income tax with a broad-based consumption tax, the distinctions between capital income taxation and labor income taxation have grown in some countries, notably with the adoption in some Nordic countries of the dual income tax system, under which labor income is taxed according to a progressive schedule but capital income is taxed under an alternative, flatter tax rate schedule (Sørensen 1998).

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<sup>2</sup> See the discussion in Auerbach (2008).

## *B. The Progressive Rate Structure*

For a tax system to be progressive, the average tax rate must rise with the tax base. Decades ago, however, progressive income taxes went far beyond this requirement, with statutory marginal tax rates in some instances exceeding 90 percent of taxable income. While a monotonically rising marginal tax rate schedule implies rising average tax rates, it is not a necessary condition for this to occur. The United States income tax structure between 1988 and 1990, for example, imposed successive marginal tax rates of 0, 15, 28, 33, and 28 percent to implement a system with (weakly) increasing average tax rates.

The logic of high marginal tax rates was simple: by imposing high rates but limiting these rates to those at the very top of the income distribution, it was possible to make the tax burden very progressive. It was understood, of course, that high marginal tax rates could impose serious economic distortions, but the distortions were taken to be an acceptable cost for achieving the associated degree of progressivity.

Major theoretical and empirical developments have brought about a marked change in this perspective. Perhaps the single most influential theoretical advance was Mirrlees' (1971) analysis of the optimal nonlinear income tax. Mirrlees showed that, for a bounded income distribution, the marginal tax rate should approach zero as income reaches its upper bound, and in simulations found that the optimal rate structure possessed a flatter marginal tax rate schedule than one typically found in tax systems of the time. This relative flatness of the rate structure was not an artifact of a weak taste for income redistribution, but rather came from a more careful consideration of the costs and benefits of high marginal tax rates near the top of the income distribution.

The intuition is that increasing a marginal tax rate at any particular income level raises revenue on all with higher incomes who are subject to the tax, but distorts only the behavior of those at that particular income level. Thus, raising marginal tax rates near the bottom is most efficient, but also snares many low-income taxpayers. But raising marginal tax rates near the top raises very little (if any) revenue relative to the distortion imposed, so that even if the cost to taxpayers of the revenue raised is given little (or no) weight in the computation of social welfare, it is not desirable to impose marginal tax rates that are too high. Under some conditions, therefore, marginal tax rates should be zero at the top and at the very bottom (Sadka 1976), with the trade-off between equity and efficiency pushing toward a non-monotonic marginal tax rate schedule with the highest marginal tax rates somewhere in the middle of the income distribution – like the U.S. rate schedule of the late 1980s.

The insights of Mirrlees' original analysis have been extended and refined in many ways. We know, for example, that for an unbounded distribution with a sufficiently thick upper tail, the marginal tax rate need not be decreasing or converge to zero near the top (Diamond 1998, Saez 2001). While every distribution is bounded, one may think of such a result as also applicable to the case where we are unsure where the highest income level will be. As to marginal tax rates near the bottom of the income distribution, once there are some individuals who are not employed, the standard Mirrlees framework called for positive marginal tax rates from the beginning that gradually clawed back the transfer payments received by those with no income, precisely as under the negative income tax approach promoted during the 1960s. However, with slight modification, in particular under the assumption that the choice of entering the labor force is a discrete decision whether or not to work at least a significant number of hours (as would be the case if there are fixed costs of working), then the optimal marginal tax rate at the bottom of

the income distribution may be negative for some range to encourage labor force participation (Saez 2002b). Although this last theoretical insight is recent, it conforms to the policy already in place in the United States and elsewhere of providing earned income tax credits to offset taxes that otherwise would be due from low-income workers.

Economic theory has moved away from the negative income tax in another dimension, as well, that of universality. Proponents of the negative income tax had argued that it would simplify systems of low-income support and help avoid some of the undesirable interactions of multiple programs that could in some instances lead to very high marginal tax rates. While these arguments still held force, others arose in favor of the maintenance of programs targeted toward more specific needs. These arguments are of two types. First of all, there may be some observable characteristics that are reasonably exogenous and strongly correlated with need, and that therefore can serve as “tags” for deserving individuals, toward whom resources can be directed in a way that limits negative incentive effects by excluding others from qualifying (Akerlof 1978). Second, like taxes and subsidies on commodities that might sometimes be desirable in the presence of an optimal income tax (if the Atkinson-Stiglitz conditions mentioned above are not satisfied), certain types of in-kind transfers can serve to help the truly needy at the expense of others by providing benefits that would be unattractive to those not really in need, such as relatively low quality housing, food or health care.

Another development since the work of Mirrlees has been the increased focus on the alternative sources of deadweight loss associated with labor income taxation. The optimal tax rates in the Mirrlees model depend primarily on four factors: the government’s revenue requirement, the distribution of abilities in the population, the social welfare function, and the responsiveness of labor supply to taxation, as measured by the compensated elasticity of labor

supply with respect to the after-tax wage rate. The lower the compensated labor supply elasticity at any given level of ability, the higher the optimal marginal tax rate. Hence, low labor supply elasticities permit higher marginal tax rates and greater redistribution. Given that compensated labor supply elasticities estimates are often very low, this suggests that a fair degree of redistribution may be optimal. However, as emphasized by Feldstein (1995), marginal tax rates affect taxable income in other ways as well, including shifts in income between taxable and tax-sheltered forms and modification of associated activities to generate additional tax deductions, and all of these other responses also generate deadweight loss. Under certain assumptions, the relevant elasticity for calculating the deadweight loss from marginal income tax rates is the taxable income elasticity, which from the evidence is likely considerably higher than the labor supply elasticity and therefore implies lower optimal tax rates.

### *C. The Family Unit*

During the last few decades, the treatment of the family unit for purposes of taxation has received more attention. First, we have accumulated evidence that the labor supply responses to changes in the after-tax wage rate are higher for secondary earners and those with relatively weak labor force attachment, such as teenagers and those nearing retirement, than they are for primary earners. In particular, the labor supply of married women, who because of child-bearing and other family responsibilities have tended historically to work less over the course of their lives than men, appears very sensitive (e.g., Rosen 1976, Eissa 1995). As a consequence, tax systems that differentiate between the two earners in a family should, for efficiency reasons, impose lower taxes on secondary earners (Boskin and Sheshinski 1983) and, when a nonlinear rate schedule is used, secondary worker earnings should actually face a lower tax rate among

higher-income households, a result reminiscent of the Mirrlees result for single-worker models (Kleven et al. 2006).

Yet, as a rule, progressive tax systems based on the family unit rather than on the individual can impose very high marginal tax rates on secondary earners, if one views the worker's labor supply decision as being taken from the perspective of the primary worker already being employed. Confronted with this conundrum, tax authorities have constructed methods of lessening the distortions that such high marginal tax rates impose, such as by providing a deduction for a portion of the secondary worker's earnings, a policy practiced in the United States between 1981 and 1986. But many problems remain to be resolved, notably in cases where income tests for low-income benefits are based on the family unit.

A second line of research has considered the nature of decision-making and resource allocation within the family. Under the standard assumptions that view the family as a single optimizing unit that allocates its available resources to maximize some family welfare function, statutory tax obligations and benefits accruing to one member have the same impact as those accruing to another. But empirical evidence suggests that this is not the case, for example that resources allocated to women will have different consequences for the family than those allocated to men (e.g., Duflo 2000). These results indicate that some sort of bargaining model may be relevant to predicting outcomes. Thus, systems that treat the family as a single unit may have different consequences for the family than those that treat the members as individual units, even if the resources available to the family after taxes and transfers are the same in the two situations.

#### *D. Stepping Back from Second-Best Theory*

It was always understood that the theory of second-best didn't necessarily imply that one would want distortions on every margin once a single margin was distorted, but we now have identified important cases in which some margins should remain free of distortions even when other distortions are present.

The first instance of this result is the production efficiency theorem of Diamond and Mirrlees (1971). Diamond and Mirrlees showed that there is a hierarchy of distortions, those within the production sector being worse than those between the production sector and the household sector. Under certain conditions regarding the flexibility of government policy, any objective that can be achieved using production distortions can also be achieved using distortions of household decisions; and while production distortions reduce the economy's effective productive capacity, distortions of household decisions do not. The Diamond-Mirrlees production efficiency theorem has several important implications. First, government should use private sector prices when performing cost-benefit analysis for its own projects. Second, as one can think of the two-way flow of goods and services with trading partners as being like a production process, an economy should use domestic prices for trade flows, i.e., there should be no trade distortions such as tariffs or export subsidies.

There are, of course, quite relevant cases in which the necessary conditions for the Diamond-Mirrlees theorem are violated. In the international context, for example, a large country that can affect its terms of trade through tariffs violates the assumption of constant returns to scale in production or full taxation of economic profits, and would not find its optimal tariff to be zero. And governments that confront political difficulty in imposing taxes directly might find advantageous the additional layer of obfuscation afforded by imposing taxes on

production. But the clarity and intuition of the theorem are valuable nonetheless, because they remind us that some distortions are intrinsically more damaging than others.

A second important case of distortion-avoidance is the Atkinson-Stiglitz (1976) result already alluded to above in the discussion of consumption taxation. While the general rule of optimal taxation suggested that complementarity with respect to leisure would govern whether taxes on different commodities should be equal, Atkinson and Stiglitz showed that a weaker condition was required once the government had nonlinear taxation at its disposal. In particular, separate commodity taxation would be called for only if individuals of different abilities evidenced systematically different preferences for commodities even when at the same level of income.<sup>3</sup> The intuition is that, since the optimal income tax problem involves self-selection constraints, where the government seeks to prevent individuals of one ability level from masquerading as individuals of another ability level, government can gain additional leverage using commodity taxes only if the first ability group would behave differently from the second group when earning the income the government wishes to provide to the second group.

While there might be cases of such differences in preferences – for example with respect to intertemporal consumption decisions, as discussed above – we often lack sufficient information about preferences to be confident about such interventions. Thus, the arguments for distorting choices among commodities, either for efficiency or equity reasons, are weaker than were previously supposed. As with the Diamond-Mirrlees theorem, there is a hierarchy under which direct taxation of individuals is more attractive than indirect taxation of commodities. Unfortunately, this lesson has yet to be learned by policy makers who maintain rate variations to

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<sup>3</sup> As shown in an extension by Saez (2002a), with heterogeneity of tastes one would require that the average tastes for commodities differ across ability classes.

make indirect taxes like the VAT more progressive rather than seeking to accomplish distributional objectives through direct taxation.

An extension of this result suggests that, under the same restriction on preferences, we should also not distort the margin between private and public goods or the Pigouvian formula for imposing taxes on externalities (Kaplow 1996).

### *E. Rethinking the Realization Principle*

In the past few decades, it has become much more evident that reliance on the realization principle can seriously undermine a tax system. The realization-based capital gains tax does more than induce a lock-in effect that distorts portfolio choice. It also introduces an opportunity for taxpayers to engage in tax arbitrage transactions, generating losses and interest deductions that can be used immediately to reduce income while tax on gains is deferred indefinitely (Stiglitz 1983). With increasing flexibility of financial transactions, the distortions resulting from application of the realization principle have become potentially worse, for this flexibility provides taxpayers with more opportunities to take advantage of the tax system's timing inconsistencies.

The responses to this problem of tax arbitrage have taken two forms. One approach has been to focus rather narrowly on specific types of offending transactions and to eliminate the tax benefit from engaging in these transactions. For example, the United States limits the use of realized capital losses beyond \$3000 in excess of realized capital gains; it adopted rules against commodity straddles (used to generate losses through offsetting contracts) in the early 1980s and against "shorting against the box" (engaging in short sales to hedge unrealized positions) in the late 1990s. This approach "works" in the sense of cutting off specific transactions, but it has two problems. First, it applies only to specified transactions and may miss other, effectively similar

ones. Second, it introduces additional distortions, for example by discouraging risk-taking in the case of the limit on capital losses.

The second approach to limiting tax arbitrage based on timing has been to attack the problem at its root by moving to accrual taxation. This was the approach the United States adopted in the early 1980s in imputing interest over time on original issue discount (OID) obligations. This approach works well, but it is difficult to apply in cases where the accruing income is not observable. The unobservability is, after all, once of the defenses that has been offered for the realization principle in the past. We now understand, though, that it is possible to wait until realization occurs in order to determine the appropriate level of tax while still providing investors with the proper timing incentives by imposing an additional charge that offsets the benefits of deferral, even in cases where the pattern of income accrual cannot be determined *ex post* (Auerbach 1991, Auerbach and Bradford 2004). But this approach has not yet gained wide acceptance, and one attempt at its partial implementation was not politically successful (Alworth et al. 2003).

#### *F. Corporate-Sector Distortions*

The Harberger analysis that dominated thinking in public finance for many years remains relevant as a basis for thinking about the issues of corporate taxation, but several modifications and extensions have proved relevant as the years have gone by. Beginning with Stiglitz (1973), there has been a reconsideration of the extent to which corporate taxation imposes an additional tax wedge on activities within the corporate sector. Stiglitz argued that as marginal investment could be financed with debt, the double-taxation of corporate source income was confined to the capitalized value of intellectual property. Stiglitz also argued that the effective tax rate on equity investment would be only the capital gains tax rate because earnings could be retained.

A subsequent contribution by Miller (1977) suggested that the corporate tax burden on investment would vanish even without complete borrowing at the margin as the result of progressive taxation and the sorting of investors into debt and equity clienteles based on their tax rate on ordinary income. Miller's argument hinged on the assumption that returns to equity were favorably taxed at the individual level, as would generally be the case for capital gains. With equity being taxed favorably, individuals in high enough tax brackets would face a lower net burden on corporate source income received as returns to equity than those received as returns to debt, even with the corporate level tax on equity returns.

While both Stiglitz and Miller viewed the dividend tax as avoidable, dividends are generally not avoided, suggesting perhaps a higher tax wedge facing returns to equity than either of them had assumed. But another development, sometimes referred to as the "new view" of equity taxation, suggested that through capitalization the returns to equity would not face the extra tax on dividends even if dividends were paid, so that the low marginal equity tax burden could be assumed even in the presence of dividends (Auerbach 1979). While Miller suggested that in equilibrium the debt-equity decision might no longer be driven by taxes, the new view indicated that the corporate retention decision would, through capitalization, no longer be influenced by taxes, either.

All of these models involve restrictive assumptions that are not fully satisfied. Under the Miller model, for example, debt and equity must be perfect substitutes from a non-tax perspective; for the new view to hold there must be a limit on the substitutability of dividends and share redemptions. But these theories cast new light on how distortionary the corporate tax is, suggesting that each of the distortions mentioned above – to the investment decision, the debt-equity decision, and the dividend payout decision – might be lower than had been supposed. An

important implication is that tax measures aimed at alleviating the double taxation of equity income through dividend relief may be rather inefficient themselves, producing economic windfalls while doing relatively little to lessen economic distortions. Therefore, attention might be more productively focused on a narrower set of distortions that remain, such as the incorporation decision or the raising of new equity capital.

It is noteworthy, although perhaps merely coincidental, that many European countries have stepped back from their traditional integration schemes in recent years. While the immediate impetus seems to have been policies promulgated by the European Court of Justice (Graetz and Warren 2006), which required countries to extend the scope of such dividend relief beyond what had been intended, the willingness of countries to abandon these systems may have been increased by a perception that the economic costs to doing so were not large. On the other hand, there should be some concern about maintaining a tax system that treats equity and debt differently, given that financial innovation has made the distinction between the two harder to characterize. Thus, there is an appeal to reforms that treat debt and equity more equally, particularly in a way that avoids some of the windfalls associated with traditional integration schemes.

Finally, just as we have modified our views of the distortions of the corporation tax, our perspective on incidence has changed as well. While the overall burden to be shifted from corporate capital to all capital may be smaller than previously thought, for the reasons just discussed, there is also increased evidence that the portion that is shifted may not stop with all capital, but will continue until it has fallen on other factors of production that are less mobile internationally. This is the theoretical prediction for a small open economy with perfect capital mobility (e.g., Bradford 1978), although the theory for richer models of large economies with

more realistic modeling of the mobility of commodities and capital is more complicated, suggesting possible outcomes ranging from capital still bearing a large share of the tax (Gravelle and Smetters 2001) to most of the tax being shifted to labor (Harberger 2008). While empirical analysis is relatively limited on this question, there is certainly some support for a strong shift away from capital (e.g., Hassett and Mathur 2006). It should matter, of course, what the structure of the corporate tax is, a question that brings us back to the different approaches to the taxation of foreign-source income.

### *G. Taxing Foreign-Source Income*

The logic relating capital export neutrality, and hence worldwide, residence-based taxation, to economic efficiency makes sense if it relates to the allocation of funds emanating from the country in question. If a country's corporations could be viewed as conduits for its national saving, then the logic would extend to the design of corporate income taxes. Perhaps this was a reasonable assumption several decades ago, but it is less so now for two reasons. First, corporations can be funded from abroad, and international portfolio finance has increased in importance over time.<sup>4</sup> Second, corporate residence is not immutable. Corporations, like capital, are internationally mobile, so the residence decision, itself, is subject to distortion by taxation. Therefore, while applying residence-based taxation at the level of the individual investor may still be consistent with the logic underlying capital export neutrality, this is far less clear for corporate level taxation, leaving aside the many ways in which actual tax systems deviate from the worldwide norm of full taxation of income as it accrues with a full credit for foreign income taxes. In the extreme, if corporations compete worldwide for capital, then corporate residence loses its meaning.

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<sup>4</sup> See, for example, the statistics presented in Auerbach et al. (2008).

Once one moves away from the notion of corporate residence as a fundamental concept, then there are no simple norms that tell us what a system of international taxation should look like, although there has been some attempt to substitute a new norm, *capital ownership neutrality*, to apply in the context of truly international corporations (Desai and Hines 2003), similar to capital import neutrality but relating to ownership rather than to the marginal investment decision.

There are several margins at which the corporate tax distorts behavior, and one needs to judge any given tax system in terms of its performance at these margins. The evaluation depends not only on the tax structure itself, but also on the economic environment, including the tax systems of other countries, and the strength of various behavioral responses. For example, while residence-based taxation may distort the location of corporations, source-based taxation gives companies greater opportunities to shift profits to low-tax jurisdictions. While source-based taxation increases the incentive to invest abroad, the impact on domestic investment depends on the extent to which domestic and foreign operations are substitutes or complements. How large are the rents associated with residence that might be taxed under a residence-based tax system, and how mobile are these rents?

These issues are currently the subject of considerable discussion, which has included some consideration of new alternatives for the tax treatment of international capital flows, such as the destination-based corporate tax (Auerbach et al. 2008). It is too early to say what the right system is, but the policy responses of recent years, including movements in the direction of territorial taxation by the United Kingdom and Japan, suggest that the traditional residence-based approach is not a sustainable outcome in a world of international tax systems competition.

#### **IV. Conclusions**

This has been a selective survey of the changes in theory, evidence and tax and transfer policy over the past several decades. There are few general lessons to draw from this evolution, other than that public finance remains a field of fertile research and that, at least at times, policy responds to changes in theory and evidence. Perhaps the best illustration of this last point is the general decline we have seen in top marginal income tax rates. We may have improved our ability to overcome the challenges posed by the theory of second best, but in many other cases our advances have left us with a less clear picture than we thought we had.

For example, while the logic underpinning the income tax has been largely destroyed, the logic favoring a consumption tax is far less simple. If the taxation of international capital flows entails more than ensuring an efficient allocation of capital, then there is no simple answer as to what our tax system should look like. The taxation of the family should be informed by the manner in which families allocate resources, but this manner is not yet certain. The realization principle is no longer a viable approach to taxation, but full accrual taxation is not yet feasible and alternatives to it face political resistance. And the corporate tax is not necessarily a tax on capital, but where it falls is still in dispute.

In summary, our state of knowledge has certainly advanced over the past few decades, as has our ability to contribute to informed policy making. But this contribution requires a subtle touch, for the lessons are often not simple or easily explained.

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