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Commentary on Brewer, Saez, and Shephard, 'Optimal Household Labor Income Tax and Transfer Programs: An Application to the UK'

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Prepared for the Report of a Commission on Reforming the Tax System for the 21st Century, Chaired by Sir James Mirrlees

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The Institute for Fiscal Studies

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

The Nuffield Foundation

Full Report to be published by
Oxford University Press

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Commentary on Brewer, Saez, and Shephard, "Optimal Household Labor Income Tax and Transfer Programs: An Application to the UK" (August 10, 2007 version)

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January 22, 2008

The optimal income tax model developed by Mirrlees (1971) and refined and extended in the economics research literature since that time is a great intellectual achievement and also one with enormous practical usefulness. Although economists, and some policy-makers, were quite cognizant prior to 1971 of the tradeoff between redistribution through the tax system and work incentives, the formulation proposed by Mirrlees and later extended by many others provides a formal means by which that tradeoff can be assessed. More important, it is capable of quantification, thereby providing a basis for substantive policy recommendations by economists based on the numerical specification of the tradeoffs involved. The model is also quite capable of extension, both by relaxing its various assumptions and positing alternative channels through which taxation can affect incentives (human capital, tax evasion, etc.).

The heart of the model is its emphasis on the incentive effects of taxation, and this is, arguably, the main contribution of economists to tax policy. Many policy-makers focus more heavily on other issues concerning the choice of tax policy: revenues raised, distributional effects, and administrative efficiency and practicability, for example. Economists tend to describe the estimates of tax reforms made by such tax experts as "before-behavioral-response" estimates. Economists, on the other hand, emphasize the "after-behavioral-response" effects--those which occur after taking into account the fact that individuals and households may change their behavior, especially their levels of work effort, in response to a change in the tax system. Thus the optimal tax model rightly focuses on the issue that economists have a comparative

advantage in studying.

At the same time, it should be emphasized that the optimal tax model is mostly a shell, or framework, which cannot deliver policy recommendations for tax reforms without some assumption on societal, or governmental, preferences for who should be the winners and losers as a result of a reform, and what, more generally, the optimal distribution of income (or, more precisely, well-being) should be. The model can only make recommendations conditional on an assumption of such societal preferences, and therefore economists require input from policy-makers on those preferences prior to making concrete recommendations. But given such input, the model is the best vehicle for assessing the magnitude of behavioral responses and the implications of those responses for the distribution of well-being.

The Brewer et al. paper (henceforth BSS) is an excellent exposition of the optimal tax model, described in simple intuitive terms and in as transparent a way as possible. The essay also notes the important extension of the model (Diamond and Saez) to consider the case of optimal taxation when individuals in the population choose between working and not working (i.e., the extensive margin) and show that this leads to much lower marginal tax rates (MTRs) at the bottom of the income distribution. BSS also show some MTRs and average rate rates (ATRs, which they call the participation tax rate) in the existing UK income tax system, the results suggesting very high MTRs and ATRs at the bottom of the distribution. Although the BSS essay pays some attention to top earners--even providing a crude calculation of their behavioral response elasticities to changes in income tax rates--the focus of the paper is mostly on the bottom of the distribution. Finally, they are courageous enough to actually propose a tax reform with a fair amount of specificity detailing MTRs and ATRs for different groups and at different

points in the income distribution. Following their previous work in the essay, the main feature of the reform is that they propose that tax rates at the bottom be reduced. However, they also, admirably, attempt to address several practical and administrative issues with their proposed reform.

In my Commentary, I will focus on the proposed tax reform in BSS. I will (1) compare the reform to the classic negative income tax model; (2) address the issue of what societal preferences are and how that affects the design of tax reform; and (3) discuss some alternative motivations for tax reform that have been suggested elsewhere by economists.

The BSS Reform and the Negative Income Tax

Ignoring many of the details of the BSS reform proposal, it is basically a proposal for a negative income tax (NIT). An NIT was first discussed by Friedman (1962) and Tobin (1966), who were concerned, as BSS are, with high MTRs in the then-existing transfer programs in the U.S. The fear of significant work disincentives from those high MTRs predated the development of the optimal income tax model, it should be noted, and was based on a simple perception of the nature of work disincentives when MTRs are very high.

On a simple prima facie basis, and even without the optimal tax machinery employed in the paper, a reduction in MTRs at the bottom in the UK would certainly seem warranted. From a U.S. perspective, the UK and many other European countries have long been characterized, roughly speaking, by social welfare systems with a high G and high t--where G (the "guarantee") is roughly the amount of income that nonworking families are given and t (the MTR) is the rate

at which benefits are withdrawn as income rises. In the UK, when the many different transfer systems are added together, especially the relatively generous housing benefit, G is quite high. But, as BSS emphasize, so is t. Both the high G and the high t tend to discourage work. In the U.S. and some other countries, on the other hand, transfer systems are more characterized by low G and low t, which each have their own effects in encouraging work.

Traditionally, the problem with lowering the MTR in systems with a high G is that it extends subsidies higher up into the income distribution. In a simple NIT, the breakeven point--the highest income where benefits are still paid--equals G/t. Therefore, a given reduction in t has a greater effect on the breakeven point in a system with a high G than one with a low G because the relationship is multiplicative. This has three effects. One is that program costs rise more in systems with a high G, which means that more revenue must be raised from some other source to finance the reduction in the MTR. A second is that there will be work disincentives generated higher up in the income distribution, often where the distribution of workers is quite dense, because the MTR on the groups made newly eligible for subsidies rises rather than falls. A third is that the number of families receiving a subsidy necessarily rises and, again, if the population density in the relevant region where eligibility is newly established is high, this raises the number of families who are on benefit. In the conventional optimal tax model, this third effect is irrelevant because the number of families on benefit is immaterial apart from its effects on their work effort and income. But it could matter if some voters care about the fraction of the population that is on benefit per se.

The high cost of reducing the MTR as called for in an NIT is presumably the reason that BSS do not implement the negative MTR (i.e., an earnings subsidy) that their optimal tax

calculations suggest would be preferred very high up into the earnings distribution (they do not propose lowering G except for a few groups for a few types of benefits). Nevertheless, BSS propose significant reductions in the MTR at the bottom (i.e, those with no other income) for many groups (their Figures 8A-8F). For lone mothers, the MTR is reduced from around 70 percent to less than 10 percent for low ranges of earnings, although this is primarily because of a moderately generous exemption level BSS provide for in their plan (i.e., before the real NIT kicks in). The ATR for this group (which they call the PTR) is, however, negative at the bottom, so an earnings subsidy is achieved for a range of low earnings. The MTR for couples with children and no other income is reduced from the 50-70 percent range down to the 20-30 percent range, another major reduction, with, again, an earnings subsidy (negative ATR) at the very bottom.

The cost of these reduction is borne by increasing MTRs in the middle range of incomes in the BSS proposal. BSS explicitly propose not financing the NIT by increasing the MTR on the highest income groups but instead hasten the withdrawal rate of benefits in some programs for some demographic groups, which primarily affects those in the middle or lower-middle of the distribution. Among couples with children, the largest pre-response income reductions occur in the 6^{th} and 7^{th} deciles of income (Table 3b) and, for the overall population, the largest percentage reductions occur in the 7^{th} decile. The only group where significant reductions occur at the top is for lone parents, where, presumably, the highest decile of income is in the middle or lower part of the overall distribution.

This method of financing reinforces the work-decreasing effects inherent in the NIT mentioned previously, which arise because the MTR reduction at the bottom increases MTRs for

those made newly eligible for benefits. This occurs even when the NIT is not revenue neutral; when it is made revenue neutral, as BSS properly make it, MTRs must be increased above and beyond this, and their increase in the middle range of earnings is where the NIT-inducing MTRs were also rising. For both lone parents and couples with children and no other income, the rise in the MTR begins at about 400£ of weekly earnings, for example, and ends at around 800£. For some other groups, like single individuals without children, MTRs rise at lower levels of earnings, between 100£ and 200£.

It is worth emphasizing that distributional considerations necessarily play a major role in the decisions of where to place the decreases and increases in the MTR. By definition, any revenue-neutral policy will have to increase MTRs for some groups and ranges and decrease MTRs for other groups or ranges. In the US, estimates and simulations of a (non-revenue-neutral) NIT show that, for many groups--husbands and wives, for example--average labor supply is essentially unchanged by an NIT because the increases in work effort arising from MTR reductions at the bottom are mostly cancelled out by work effort reductions higher up. Indeed, for wives, simulations of these types of programs (including the phase-out region of earnings subsidies) often show work effort reductions because more women face higher MTRs than lower MTRs (Hotz and Scholz, 2003). This would presumably occur in the BSS plan because MTRs for the second earner in married couple households with children rise beyond about 100£ of weekly earnings. For lone mothers in the US, the effect of an NIT depends on how responsive such families are to MTR changes, but for some responsiveness assumptions, there again appears to be no change in average labor supply arising from the NIT (Moffitt,1992). Some empirical studies of actual MTR reductions in US welfare programs for lone mothers

likewise show no effects on average labor supply (Levy, 1979).

This does not mean that an NIT is not optimal because average labor supply is not the factor determining rates in optimal tax models. Increases in income at the bottom are more highly valued than decreases higher up, and work effort increases at the bottom could conceivably be more highly valued than work effort reductions higher up (more generally, it is the marginal increase in well-being that drives the optimal tax model, not labor supply per se). However, the argument has had force in the U.S. President Ronald Reagan, an otherwise forceful advocate for reduction in MTRs in the income tax, actually increased MTRs in US welfare programs back to 100 percent after taking office in the early 1980s, arguing that he did not want to do reduce work incentives for families higher up in the income distribution and did not want to subsidize them. Making sense of this kind of policy change may require thinking about different societal preferences than those embodied in the usual optimal tax model.

Making judgements about the effects of different ranges of MTR increases and decreases may also be assisted by the magnitudes of the work effort effects involved. Traditionally, for example, the research literature on the work effort of prime-age males has suggested that such men have rather low response elasticities to tax rates and returns to work in general. This is consistent with evidence suggesting that the US earned income tax credit has had very modest, if any, effect on the work effort of married men. Lone mothers, on the other hand, are usually considered to be much more responsive to changes in the reward to work and hence these work-effort-distributional considerations could be much more important.

A related issue is how important the work incentive effects of tax reforms are, in general, relative to their distributional impact ignoring any behavioral response. An NIT is often

proposed because society wishes to provide additional income support to those somewhat higher up in the income distribution, who work at least a modest number of hours. Most earnings subsidies like the WFTC are also partly designed to provide support to a perceived needy group (low-wage workers). For the WFTC, about 76 percent of expenditures on married couples go to families who have at least one worker in the absence of the WFTC; that is, those who have positive work effort to begin with (personal communication from M. Brewer). A lower percentage, but still over half (55 percent) of WFTC expenditures go to lone mothers who would have worked in the absence of the program. The same would surely be true of the IFS program proposed by BSS.

This simply reinforces the fundamental importance of redistributional preferences in driving tax reform proposals. Therefore the basic question of who society, and voters, want to help cannot be avoided. Do they want to put more funds into those who are able to work significant numbers of hours or to those slightly lower in the income distribution?

Some economists have suggested that modifications in the standard optimal tax model could have different implications for where in the income distribution society prefers to put its money. For example, Boadway et al. (2002) and Cuff (2000) have demonstrated that if workers differ in their work effort intensities (in their terms, individuals are heterogeneous in their preferences for leisure), society may not wish to subsidize those at the very bottom because they are disproportionately composed of individuals who are not working or who are working very little voluntarily. Their well-being (utility) is relatively high and hence government subsidies to them would be unwarranted. This leads to a positive preference to concentrate government subsidies to those slightly higher up in the distribution (see also Choné and Laroque, 2007). This

is contrary to the standard assumption that society would always prefer to concentrate funds on those at the very bottom. Alternatively, Beaudry and Blackborby (2004) show that if one introduces a value for "non-market" work--e.g., the value of raising children--whose value differs across families, then, once again, those at the bottom of the distribution may be those who are voluntarily pursuing other preferred activities and hence are not particularly low in well-being. This also can lead to a preference to provide subsidies slightly higher up in the income distribution. None of this is inconsistent with the actual NIT reform proposed by BSS, but instead could be thought of as an alternative rationale. However, these other considerations could suggest a different pattern of MTRs (not to mention G's) than the specific ones they propose.

Other Features of the BSS Reform Program

Two other features of the BSS reform program are worth noting because they suggest alternative approaches to the problem. One is that BSS propose a monthly accounting system and integration with PAYE. The economic rationale for a monthly, rather than annual, accounting system is that low-income individuals and households have a difficult time smoothing fluctuations in income. I find it interesting, however, that in the US the major work-incentive transfer program, the Earned Income Tax Credit, operates mostly on an annual accounting frame--almost all households receive a lump-sum tax refund in April of each year--and the recipient households are, by most available evidence, quite happy with that arrangement. The reason is that households use the lump-sum refund to pay off debt and to purchase consumer

durables. Although they could equally do so if the subsidy had been received monthly during the previous year, that would have required them to make conscious savings decisions. The annual accounting frame thereby provides a forced savings mechanism which households seemingly prefer. Such a result is consistent with much of the "behavioral economics" literature that has developed in the last several years.

A second is that BSS propose to fold six existing programs--the child tax credit, the working tax credit, income support, child benefit, housing benefit, and council tax benefit--into their new, integrated program. This would rationalize the MTR schedule and achieve savings in administrative cost. Once again, this is quite reminiscent of the proposal for an NIT by Milton Friedman, who also wished it to replace all existing transfer programs. While integration of different transfer programs is a long-time ideal of academic economists, it has not fared well in the US (Moffitt, 2003) and my perception is that most other European countries likewise have not made many attempts at integration. My view is that most governments see different programs as serving different needy groups and as providing different types of in-kind subsidies. For these reasons, they prefer a variety of different programs. This does not mean that one should not address the cumulative impact of multiple programs on the total MTR, only that one has to recognize that integration may actually not be desirable to some.

Other Models of Optimal Taxation at the Bottom

It may be useful to note two alternative models of optimal taxation that would generate somewhat different proposed reforms than that recommended by BSS.

One is the proposal by Akerlof (1978) for categorical programs--that is, programs that provide different tax schedules to different groups as a function of some observable characteristic like marital status or family composition. Akerlof noted that the optimal tax model of Mirrlees and its many extensions assume that the government observes household income but does not observe hours of work and hourly wage rates separately. If the government could observe the wage rate, it could base redistribution on that alone and achieve a superior result. However, if the government does observe a variable which is correlated with the unobserved wage rate, it might be able to do better by separating the population into those groups and offering them different schedules. Single mothers who have been out of the labor force are likely to have low wage rates and might deserve a greater lump sum payment for not working, for example; and prime-age males with a great deal of work experience might have high wages and might be deserving of very little government support. Categorical systems of this type have the disadvantage of giving individuals an incentive to change their category, but adding that to the model just turns it into a conventional benefit-cost calculation which would suggest categorization up to the point where the marginal social benefit equals the marginal social cost in terms of distortions in decisions of what group to belong in.

In practice, the BSS proposal is not inconsistent with this notion because different schedules are proposed for different family types, although not for the reasons posited by Akerlof. However, the Akerlof model goes a long way toward explaining why so many countries do, in fact, make distinctions between different groups that do not seem to be solely based on differences in income distribution and work-effort responsiveness. The force of the Akerlof model is to work against non-categorical programs like the NIT which make as few

distinctions between family types as possible to be able to get as close as possible to the universal ideal.

A second strand of research on optimal income taxation drops the "welfarist" assumption of the standard model, which assumes that society only cares about how individuals perceive their own well-being and wishes to redistribute to households if that redistribution makes individuals feel better off, even if it means reducing hours of work or quitting work altogether. An example of a non-welfarist assumption is the model of Besley and Coate (1992), who assume that society wishes to raise the incomes of the poor, preferably to reach some minimum income target, even if it means a loss of leisure that might be valued more by the individual than by the society. Another example is the model proposed by Moffitt (2006), who suggests that society might care about work per se quite independently of well-being as perceived by the individual. If society values work per se, it may also wish to subsidize work to a greater degree than individuals prefer. Both of these "paternalistic" assumptions on societal preferences--paternalistic because society has its own views of what is best for recipient families and does not wish to be a passive observer of the preferences of the poor for work and nonwork--lead to greater emphases on work than would ordinarily be the case.

In addition, these views on societal preferences often lead to programs with minimum hours restrictions (both the Besley-Coate and Moffitt models lead to this). Programs with minimum hours restrictions are not infrequently observed in different countries, including the UK with its 16-hour requirement in the Working Tax Credit. BSS proposing dropping that requirement, which presumably follows because the conventional optimal tax model does not generate such requirements as optimal (or at least not without considerable difficulty).

However, such hours restrictions could be socially optimal if society has different preferences than those assumed by BSS.

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