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HORIZONTAL EQUITY:
NEW MEASURES, UNCLEAR PRINCIPLES

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Horizontal Equity:
New Measures, Unclear Principles

Louis Kaplow[*]

Abstract

Alan Auerbach and Kevin Hassett offer a new measure of horizontal equity (HE) that is designed to overcome deficiencies in prior indexes. There is, however, a fundamental problem that their effort shares with their predecessors attempts: the underlying rationale for pursuing HE at the expense of individuals well-being is never stated. Moreover, as discussed here, it appears that no plausible rationale can be given because the essence of HE involves giving weight to morally arbitrary factors. Indeed, pursuing HE may even conflict with the Pareto principle. On reflection, it seems that the appeal of HE is specious: HE does not possess intrinsic value, but rather is a rough proxy concept that may signal various ways in which unequal treatment of individuals can lead to a loss in social welfare. Unfortunately, HE indexes are not very useful even with regard to HE s proxy role.

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1. Introduction

Alan Auerbach and Kevin Hassett (1999, 2000) (AH) offer a new, sophisticated measure of horizontal equity (HE) that is designed to overcome the shortcomings of prior measures.[1] One cannot, however, assess their new index without first answering an essential, prior question: *why is it that we care about HE*? After all, whether an index is a good one depends on its relationship to what it is supposed to measure. Like almost all of the prior literature that develops HE indexes, however, AH do not really address this issue.

There is, in addition, a more serious problem with the tendency to take the importance of HE for granted. If the AH approach to policy assessment is followed, society will be advised to adopt policies that sacrifice individuals well-being on account of their favorable effect on HE. But such a result is surely undesirable if, as it turns out, HE should not in itself be endowed with independent normative significance.

My argument here is that AH indeed, the whole literature that attempts to measure HE has jumped the gun in a fundamental sense.[2] When one carefully examines the concept of HE and what its pursuit entails, one discovers there is no normative basis for deeming it to be important and, in fact, it conflicts with the basic foundations of welfare economics. That is, HE stands in opposition to the advancement of human welfare. Indeed, consistent pursuit of HE can conflict with the Pareto principle. To give weight to HE entails making policy judgments

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[1]Musgrave (1990), like AH, attempts to derive an HE index that is closely related to the conventional social welfare function. In Kaplow (1992), I criticized Musgrave s measure not only because it applied only to precise equals but also because it was not grounded in and was inconsistent with each of the normative principles (including social welfare maximization) that Musgrave identified in the first portion of his article.

[2]Many of the arguments discussed here derive from ideas that were originally advanced in Kaplow (1989). Also, Kaplow (1995) discusses in detail the point that the pursuit of HE clashes with the values underlying welfare economics and, in particular, the Pareto principle.

dependent on information (in the case of AH s index, pre-tax income levels) that has no bearing on any individual s actual well-being. And, when one considers the factors that implicitly are given independent weight (such as individuals genes and luck), it turns out that they are arbitrary from just about any plausible moral perspective.

Why is it, then, that the notion of HE has such intuitive appeal? The answer, in significant part, seems to be that the notion of HE a concern for equal treatment of equals serves as a proxy device that enables us to identify factors that are potentially relevant to welfare. Notably, unequal treatment of equals may indicate mistakes in welfare maximization (for if individuals truly are equal, the optimal treatment for each will typically be the same), income inequality (which would already be captured by an ordinary social welfare function), imposition of risk, reasons for envy by those treated less well than their peers, or evidence of abuse of power (such as invidious discrimination or government officials targeting of their enemies).

Clearly, contemplating the unequal treatment of equals brings to mind myriad instances in which something is amiss. Yet each of the problems just identified involves a reduction in welfare, as that notion is conventionally understood. Thus, HE s role in alerting us to these problems does not provide any basis for deeming HE to be an independent normative principle, to be pursued at the expense of individuals well-being.

Finally, with regard to employing the notion of HE as a proxy device, the tax policy literature s use of HE is, unfortunately, not very helpful. Some of the identified problems especially invidious discrimination and abuse of power have little or nothing to do with the defects of the tax code that are being studied, even though they have everything to do with why the concern for equal treatment is felt to be important. Moreover, the sort of HE index developed by AH (and by others) simply does not relate very directly, if at all, to any of the potential problems that may be caused by unequal treatment. That is, even though identifying instances of apparent unequal treatment of equals may aid the analyst in diagnosing various defects in the tax system, AH s aggregate measure, along with its focus on deviations from individuals positions in the pre-tax distribution of income, provides little indication of whether any such defects exist or of how to go about remedying them.

2. An Illustration: On the Moral Arbitrariness of HE

Because the implications of sophisticated HE indexes like AH s are difficult to understand in complex settings, I begin by examining the most basic sort of example for assessing HE: there are only two income levels before tax and two after tax, and two individuals at each initial income level (to allow for the possibility of unequal treatment of equals). More precisely, the scenario is as follows.

Time 0: Nature creates four people: two of type H (for high income-earning ability) and two of type L (low ability). The two H s are identical to each other in all morally relevant respects, and likewise for the two L s. All individuals have the same utility functions, and all work the same amount of time.[3] The only difference is that, in the pre-tax world (or whatever other world serves as the benchmark), the two H s earn more income than the two L s. That is, the H s have good ability luck and the L s have bad ability luck.

Time 1: A tax system is enacted to finance a public good. It is supposed to raise the same amount of revenue from each of the two H s and from each of the two L s.[4] It turns out,

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[3]To obtain this result, one can simply take labor as exogenous (as in AH), or instead suppose that individuals utility functions are such that income and substitution effects are offsetting.

[4]It does not matter whether it is a lump-sum tax, a tax proportional to income, or any other tax.

however, that due to human limitations, there is some bungling in the administration of the tax, so that not everyone in fact pays the proper amount of the tax. This bungling produces the following results:

> One of the H s ends up exactly where H s should end up. This person will be designated HH.
>
> One of the H s is mistakenly overtaxed, and ends up exactly where the L s are supposed to end up. Call this person HL. (Which H ends up in which position is determined by nature at time 1.)
>
> One of the L s ends up exactly where L s should end up: LL.
>
> One of the L s is mistakenly undertaxed, so much so that he ends up exactly where the H s should: LH.[5] (Again, which L ends up in which position is determined by nature at time 1.)

Here, there is unequal treatment both between the H s and between the L s. Individuals HH and LH have good administrative luck, while HL and LL have bad administrative luck.

How HE influences the assessment of social welfare: Under a standard social welfare function, which is concerned only with where individuals end up, the extent of HE is no matter for concern. What matters is that we have two individuals who end up as H s should end up and two who end up as L s should end up. The actual utility profiles are precisely the same as they would be if tax administration were perfect. Because the welfare function weights all individuals equally, which individuals end up in which positions is of no consequence.

In contrast, by any measure of HE, including the AH measure, there is a gross violation of HE, so welfare is deemed to be lower on this account.[6] This is to say that there is some

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[5]One can suppose that the tax due by the H s is sufficiently large (or that the difference between the incomes of the H s and L s is sufficiently small) that this is possible. Alternatively, one could allow for negative taxes (transfers) in the overall system.

[6]For indexes that express a concern for rank reversals in the income distribution, there is also a violation of HE in this illustration.

(strictly positive) amount of resources that society should be willing to sacrifice in order to eliminate the administrative error from the tax system. If this were done, as long as the cost were less than the implicit social reservation price, we would deem welfare to be higher. Alternatively, if society could simply choose between two systems, one with the above characteristics and one that resulted in HH, HH, LL, LL (at the same administrative cost), society would be deemed to be strictly better off if it adopted the latter.

Implication: What this example clearly demonstrates is that the essence of HE lies in a willingness to sacrifice social welfare   that is, to reduce individuals well-being   in order to ensure that some types of luck   here, ability luck   have more influence than other types of luck   here, administrative luck   on which individuals end up with higher welfare.[7] In the light of this fact, it is hard to imagine what plausible philosophical theory would warrant giving weight to HE. And any normative theory that might justify HE surely would conflict in the most basic way with the ethical foundations of welfare economics.

Variation: To further illustrate this problem with HE, reconsider the preceding illustration. There, I said that nature first determined (at time 0) individuals ability luck, that this sort of luck was morally significant (it was ability luck, after all, that determined where individuals were supposed to end up in the final income distribution), and that nature only later (at time 1) determined who had administrative luck.

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[7]The particular approach of AH is to compare individuals to those with similar pre-tax incomes. Thus, the focus in the preceding illustration was on earnings ability, a primary determinant of one s relative position in the pre-tax income distribution. Most other writers have instead examined the effect of tax reforms rather than tax systems, with the benchmark being the after-tax income distribution that exists prior to the tax reform in question. Similarly, one could refer to any benchmark for the distribution of income (such as one determined by some caste system or by lot)   or for the distribution of wealth, consumption, or whatever. *The common point is that any approach to HE must privilege some distribution that will not exist once the system under examination is in place.* In particular, the posited distribution will count   in some manner that depends on the particular measure   to an extent that depends on how much the actual resulting distribution of income (the only one under which individuals will actually live once a policy is chosen) deviates from the benchmark distribution.

Now suppose that we change the assumptions slightly, so that the order is reversed. That is, assume instead that nature first determines administrative luck, that it is this sort of luck that is morally significant, and that only later does nature (arbitrarily) determine who has ability luck.[8]

How does this recharacterization change our analysis? Under conventional welfare economics, of course, none of this is relevant. This is because, as noted, individuals are viewed anonymously; it does not matter who in particular ends up in each position, but only the levels of welfare that individuals are able to achieve. Accordingly, the order in which nature bestows traits is not per se of independent normative significance.

But under the AH-modified welfare function (and others in the literature), everything reverses. The reason is simple. HE requires the equal treatment of equals. Here, it is the administrative luck attribute that exists first and is thereby deemed to be the proper determinant of individuals positions in the final income distribution. That is, the (previously) latter attribute now determines who are the equals who should be treated equally, not the former. As a result, what previously was viewed as error in tax administration now must be understood as a correction to the now-viewed-as-inequitable pre-tax distribution of income. (In terms of the original notation, the change in assumptions means that the second letter, not the first, is morally privileged. In the pre-tax world, HL, who should be treated as an L, was treated as an H, and LH, who should be treated as an H, was treated as an L. It is the tax system s administrative scheme that gives everyone a welfare level indicated by their second letter, making all equitable.)

[8]This recharacterization can be described in many ways, depending on when nature determines the underlying characteristics, when we observe them, and so forth. Also, one could hold all of this constant and have different technologies. (For example, the original H type might be the administratively lucky type rather than the high-ability type, and the trait that previously led to administrative luck might instead lead to higher productivity.)

Incurring costs to eliminate this error not only would be wasteful, but would actually reduce welfare even exclusive of these costs.

Comments: Simply changing assumptions about the order in which nature s luck is manifested (perhaps invisibly) in individuals or about which aspects of such luck (the timing of their origin? of their first manifestation?) are deemed morally significant fundamentally changes what violates HE. Indeed, the direction of the effect is reversed. But given the essential nature of HE, noted above, this should not be surprising. After all, the HE view consists of a normative stance that some of nature s random moves (ability in the initial example) are to be endowed with normative significance, whereas subsequent random moves (administrative luck) or earlier random moves that are observed subsequently *or simply are listed subsequently by the analyst* are to be treated as normatively irrelevant, mere noise that interferes with the proper moral order.[9]

Should any of these traits be endowed with moral significance? Which ones? And why? A basic feature of the welfare economic tradition is that such traits have no intrinsic moral significance. Moreover, the philosophical basis for many views favorable to any redistribution of income such as Harsanyi s (1953) derivation of utilitarianism and Rawls s (1971) argument for maximin, both of which appeal to an original position are grounded in the moral conviction that such background traits (and, in particular, traits affecting income-earning ability, which are primarily responsible for the pre-tax distribution of income) are morally irrelevant.[10] That, after all, is why efforts at enhanced equality in the distribution of income are viewed

[9]Of course, in many instances, we do not even know which traits came first, and we may suppose that often they arise simultaneously (as would be true of genetic traits).

[10]Libertarian views, which are opposed to redistribution, are more consistent with favoring some such notion of HE, but they are also opposed to redistributive taxation in the first place. See Kaplow (1989).

positively rather than seen as an evil.[11]

To continue to pursue HE, therefore, it seems that two steps are necessary. First, a proponent must identify particular traits (genetic ones?) and offer moral arguments indicating why they should have normative significance. Second, analysts would need to determine the actual distribution of the relevant traits in society and use this information in constructing a measure of HE. (That is, one cannot simply choose the pre-tax income distribution, as in AH, or the pre-reform income distribution, as in much prior literature on HE; instead, one would need to know how close each individual was to everyone else with regard to the identified, morally relevant set of traits.)[12]

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[11]Another way to put the point is to observe that the AH approach gives special normative weight to the pre-tax distribution of income whereas the very purpose of the tax system, both as a whole and with respect to many particulars, is to alter that distribution. Thus, our tax system is explicitly redistributive, and many detailed provisions are designed to favor certain individuals over others. To privilege the pre-tax distribution over the after-tax distribution is thus, in general, not merely unwarranted but literally backwards. (Much of the prior literature instead privileges the pre-reform distribution instead of the pre-tax distribution, but, of course, the purpose of a reform is precisely to make changes from what previously existed. See Kaplow (1989).)

[12]To reinforce the point that these demands are inherent in the nature of HE, it is worth elaborating further on the concept. The notion that equals should be treated equally presupposes that there exist individuals who are equals, who must, in turn, be treated equally. That is, there are predefined groups, the members of each group are more or less equal to each other in some morally relevant sense, and this is all understood to exist before application of the relevant treatment (in the present context, the tax system, which determines individuals actual levels of well-being).

Another defining feature of HE is that the relevant groups must to some extent be insular. In contrast, if one were to define a single relevant group, the entire population (deeming all humans to be equals), HE would vanish as an independent concept. After all, if we were concerned about the treatment of each individual with respect to all others, and each of these relationships were to be viewed equally, we would be left with a conventional social welfare function, which treats everyone equally and places weight on equality of income (whether on account of the declining marginal utility of income or because the welfare function is itself concave in utilities). (The ordinary concern for overall equality is sometimes referred to under the rubric of vertical equity, from which HE is sharply distinguished. In Kaplow (1989), however, I suggest that there may be some confusion about this because the standard examples used in the literature to motivate concern for HE often involve the sort of inequality that would already be registered by an ordinary welfare function, which gives weight to inequality per se.)

Thus, in considering the circumstances of individuals, the comparison with all others is *not* viewed equally under HE. Rather, how individuals are treated relative to those others deemed sufficiently comparable in some respect(s) is asserted to be of different moral importance from how the individuals are treated relative to those not deemed comparable. (The measure proposed by AH allows for the reference groups to be defined continuously in the sense that everyone can be in everyone else s group, with those having more nearly equal pre-tax incomes being weighted more heavily. But the point here is not to challenge the precise weighting or whether the reference group has a definite boundary, but rather to question the basis of giving different normative weight to comparisons with different individuals in the first place.)

3. Why Any Notion of HE Is Indefensible: Conflict with the Pareto Principle

In the literature, there has never really been an explicit, affirmative attempt to justify HE as an independent normative principle.[13] And, as the foregoing discussion suggests, pursuing HE seems, at its core, to entail giving weight to morally arbitrary factors, at the expense of social welfare. This latter point, it turns out, can be put more sharply: *giving any weight to HE is ruled out if one adheres to two rather basic ideas, logical consistency and the Pareto principle.*[14] Thus, although AH appeal directly to the utilitarian tradition and to economists conventional social welfare function and offer a measure of HE that has a mathematical form suggestive of such roots, it is in fact the case that their HE index any HE index is in fundamental conflict with the basic premises of the entire approach that they draw on for support.

Example for first demonstration of Pareto conflict: One way to demonstrate that HE conflicts with the Pareto principle is to examine a case involving uncertainty, paralleling the approach of Harsanyi (1955, 1977) who used this method to show (roughly) that logical consistency plus the Pareto implied that an individualistic social welfare function had to be utilitarian. To do this, consider an extremely simple example in which everyone is initially equal. The reader may interpret this example equivalently as involving any number of groups of individuals at different income levels, with everyone in each group identical to each other.

The tax regime at issue has the following characteristics: it raises the mean income (of

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[13]Musgrave (1990) is the only paper that comes close. As I explain in Kaplow (1992), however, he merely shows that HE is *consistent* with various philosophical theories in a simple, first-best world. (This is related to the point, noted in section 4, that when a particular treatment is optimal, under some criterion, for individual 1, and individual 2 is identical to 1, the same treatment will, in simple cases, likewise be optimal for 2.) Musgrave does not explain why any of the identified normative theories would call for giving independent weight to HE, to be pursued at the expense of what the theory deems to be important.

[14]See Kaplow (1995), Kaplow and Shavell (1999).

each group) but also involves some variance. That is, the tax regime entails some randomization, so that some individuals (in each group) will end up with incomes above the mean (for the group) and others will end up with incomes lower than the mean, and perhaps lower than their initial income level.

Obviously, this tax regime will involve some loss in HE. Let *I* be the per capita income-equivalent measure of the resulting inequity under whatever measure of HE is deemed to be appropriate. Now, suppose that individuals risk aversion is such that the increase in the mean income minus the risk premium associated with the randomization is strictly positive, but less than *I*.[15] What implications follow?

Under the Pareto principle, the tax regime would be deemed desirable, for everyone prefers that it be adopted.[16] Moreover, under any conventional social welfare function (which will give no weight to HE), this regime will be favored as well. But, under the AH approach or any other that gives HE positive weight this regime would be deemed undesirable because the reduction in HE outweighs the gain in welfare. That is, a welfare function that gives weight to HE and is applied in a logically consistent manner to evaluate all possible tax regimes will, in some instances, favor regimes that are Pareto dominated.

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[15]Taking a given measure of HE, one can construct such an example by choosing individuals utility functions with sufficiently small risk aversion that their welfare rises as a result of implementing the tax (or tax reform) but with sufficiently large risk aversion that, when one subtracts *I*, the aggregate welfare function (which incorporates HE) falls. (Assuming that the measures are continuous, which AH emphasize as a prerequisite of any plausible HE measure, this will generally be possible.)

[16]One strategy to avoid the problem raised by the example in the text would be to apply the AH welfare function not to the ex post distribution of income but rather to the ex ante expected utilities. (That is, one would modify the AH approach by looking ex ante rather than ex post and substituting utility for income.) Taking this view to its logical conclusion, however, implies that one should consider expected utility behind a veil of ignorance. As Vickrey (1945) suggests and Harsanyi (1953, 1977) proves, however, such an approach also implies a utilitarian welfare function, in which HE receives no weight. (One might also note that there is a sort of time consistency problem with the ex ante approach when HE is given weight. Ex ante, as just observed, the posited tax is favored. Once it is implemented, however, and the uncertainty is resolved, it would be optimal applying the HE-type welfare function to repeal the tax, for the existing situation is evaluated as inferior to that which would exist without the tax.)

Comments: That giving weight to HE may involve a conflict with the Pareto principle reinforces the point that the prior literature s failure to give an affirmative justification for HE is not merely a gap waiting to be filled. Rather, the notion that HE should be given independent normative weight in assessing policy is fundamentally flawed.

It is worth elaborating on this result in two ways. First, consider the logical status of the example. If one believes that moral principles need to be logically consistent, then this fundamental failure of HE in the preceding sort of example is decisive. (The fact that, in a population of hundreds of millions of people, actual violations of the Pareto principle will not occur is of no moment.)

Nor should it matter that the demonstration involved introducing uncertainty. Again, if one s principles are to be consistent, they should not lead one astray in any potentially relevant context. Nor is it acceptable to adopt one set of principles (adhering to HE) when there is no uncertainty but to shift to an inconsistent set of principles (rejecting HE) when there is some threshold amount of uncertainty. In any event, introducing uncertainty is entirely realistic. Uncertainty is pervasive in tax administration and enforcement and in predicting the effects of tax reforms. Any system for evaluating tax policy must be able to address such cases.

Second, this example should be considered in the broader context of previous writing on welfare economics. As already noted, Harsanyi (1955) first proved almost a half-century ago that adherence to the Pareto principle combined with basic notions of rationality implies that an individualistic social welfare function is utilitarian.[17] In the light of this demonstration, it seems

[17]More precisely, his assumptions were (1) individuals follow the rationality postulates in choosing among alternatives (that is, he assumed what is required to derive an expected utility function for individual behavior), (2) the rationality postulates apply to social choices as well, and (3) the Pareto principle is respected. (Actually, these assumptions only imply that welfare must be a weighted sum of individuals utility. If one further assumes that individuals should be weighted equally, then the welfare function must be utilitarian.) See Harsanyi (1955, 1977). This

incumbent on those who advocate conflicting approaches to admit that they reject either the Pareto principle or one (or more) of the basic rationality postulates and to give some good reasons for their position. This point seems particularly apropos with respect to AH, who seek to draw support from the conventional welfare economic approach.[18]

AH briefly acknowledge the Pareto conflict in the current versions of their papers, but they question the extension of the principle to cases involving uncertainty, wherein reference is made to ex ante expected utilities.[19] In the present context, however, in which everyone is fully informed and has the same (correct) probability estimates, it is unclear why the ex ante perspective is not decisive. Why is it acceptable to make everyone worse off prospectively when it is unacceptable to do so in a world of certainty? Would AH, for example, favor widespread governmental restrictions on the ability of fully informed individuals to engage in risky activities ranging from driving to hiking to entrepreneurship that in fact raised those individuals

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derivation of utilitarianism seems to be less well known than Harsanyi (1953), his earlier, and much simpler, demonstration that rational individuals behind a veil of ignorance would adopt a utilitarian decision rule. See also Vickrey (1945).

[18]Economists do not often invoke this branch of the welfare economics literature, perhaps because of the general belief that, in the modern academy, utilitarianism (and welfarism and consequentialism more generally) are not in vogue. Although this is the case, it is not (in my view) because of the merits of the critical arguments. Critiques of Harsanyi (himself a philosopher, who has regularly published impressive papers defending utilitarianism in philosophical journals) are limited. Responses to some of the original utilitarians powerful arguments, such as Mill s (1863), often ignore his excellent analysis, which already answers many of the contemporary objections. In addition, modern utilitarians, such as Hare (1981), have offered elaborate rebuttals to many of the familiar points, which often consist of provocative examples rather than analytical claims. See generally Kaplow and Shavell (2000), which criticizes many of the arguments of philosophers and legal academics against welfarism (and more generally against consequentialism).

[19]Specifically, AH refer to the extension of the Pareto principle to apply to ex ante expected utilities. However, one might have thought that it is not really an extension of the Pareto principle to state that the principle is relevant to assessing government policies on health care, unemployment insurance, social security annuities, occupational health and safety, contract law, and all other matters in which some uncertainty may be involved. Also, they state that the Pareto principle when applied to settings involving uncertainty requires . . . that social welfare cannot be averse to ex post inequalities in the distribution of income, which obviously is incorrect (most obviously because of declining marginal utility of income). Presumably, they are referring to demonstrations such as Harsanyi s (1955, 1977) that the Pareto principle, when combined with other assumptions, can be shown to have certain implications for the social welfare function. But this merely states that, if one is logically consistent and adheres to the Pareto principle, one cannot favor policies that trump individuals unanimous preferences.

expected utilities? Although others have likewise questioned demonstrations that employ uncertainty, it is simply unclear why adding this realistic feature to the analysis should render the Pareto principle inoperative.

Explanation of second demonstration of Pareto conflict: As it turns out, however, it is possible to demonstrate that most HE indexes, including that proposed by AH, violate the Pareto principle *even in a world of certainty*. Any welfare function that meets very minimal requirements (notably, continuity, which AH s does) and depends on information other than individuals utilities (which AH s does) can be shown to violate the Pareto principle. Kaplow and Shavell (1999).[20]

A brief sketch of the argument is as follows. Initially, because the HE-modified welfare function depends on information other than individuals utilities (in particular, it depends on income differences between individuals that are derived using income levels in a reference distribution of some sort), it is possible that there exist two regimes, X and X , such that individuals utility profiles are the same in the two regimes but the welfare evaluation differs.[21] Suppose, for example, that X is deemed to be strictly socially preferred to X . Now, construct regime X from regime X by giving everyone a very small amount more of some good (in the AH construct, one can slightly raise everyone s income). By continuity, we can make this increase small enough so that X, which was originally strictly socially preferred to X , will

[20]AH repeatedly emphasize the importance of continuity and the fact that their proposed evaluation function and corresponding measure of HE are continuous. With regard to non-utility information, their assessment depends on a factor that is a function of individuals pre-tax incomes (which, as noted above, are not incomes that anyone ever can consume and thus obviously are neither utility information nor variables that perfectly correlate with utilities).

[21]For the AH method of assessment, one can suppose, for example, that everyone s after-tax income is the same in X and in X , but that there is significant HE violation only in X (because pre-tax incomes are more scrambled relative to after-tax incomes in that regime).

continue to be strictly socially preferred to X . But, by construction, everyone in X has greater utility than in X. Hence, the HE-modified welfare function violates the Pareto principle.

Comment: On reflection, the foregoing result should not be that surprising. If a proposed method of policy evaluation gives weight to something that is not itself a component of individuals utilities, then it follows that one is willing to sacrifice individuals well-being to at least some extent. (For example, an evaluator who follow AH s prescriptions would strictly prefer one regime over another because of differences in HE even in cases in which every individual is precisely as well off in both regimes. By continuity, the evaluator would still strictly prefer the regime with better HE even when the other regime is somewhat better in terms of individuals levels of well-being.) Now, if one simply constructs cases in which this sacrifice in individuals well-being happens to be shared, say, pro rata among all individuals, there will necessarily be a violation of the Pareto principle. It should be apparent, moreover, that this basic argument holds regardless of the presence of uncertainty, possible differences between ex ante expected utility and ex post realizations of utility, and the like.

4. Reconciling the Appeal of HE with Its Unacceptability as an Independent Normative Principle

Throughout this comment, I have argued that there has not been offered, and there cannot really exist, any defensible justification for HE as an independent normative principle, to be given weight in making social policy decisions, at the expense of individuals well-being. Yet one may wonder how this can be. After all, doesn t everyone agree that it is important to treat equals equally?

The explanation for this apparent paradox, I believe, lies in the fact that unequal treatment is often something that we care about, but not necessarily in the contexts in which HE measures are applied. Moreover, we do not care about unequal treatment for reasons independent of individuals well-being, not do we care about unequal treatment in ways that are identified by the indexes of HE that have been proposed in the literature.

With regard to the first point, unequal treatment at the hands of government brings to mind such phenomena as racial discrimination, religious persecution, prosecution of political enemies, government officials who act as if they are above the law, and so forth. When one examines the actual sources of unequal treatment under the existing and various proposed tax systems, however, these generally are not what one finds.[22]

To elaborate on the latter two points, it is useful to consider the various ways in which unequal treatment may serve as a proxy indicator that helps to identify potential problems in the tax system. There are, as will be seen, many ways that unequal treatment indicates shortcomings, which further helps to explain why we are inclined to think that HE is important. In each instance, however, it is the case that violations of HE merely indicate losses in welfare (as conventionally understood) rather than some other phenomenon that is normatively significant in its own right. Moreover, it appears that, for the most part, summary measures of differences in individuals positions in the pre- versus post-tax distributions of income (and other HE indexes in the literature) simply are not very probative of the nature of various problems that may be indicated by the presence of unequal treatment. Following a discussion of these points, I will illustrate the arguments by examining some particular sources of unequal treatment in the tax system that are registered by AH s index.

Unequal treatment as a proxy for conventional welfare losses: First, as a matter of

[22]To be sure, corruption in tax administration that may give rise to unequal treatment is widespread in some economies. But this is not the sort of unequal treatment that the literature on HE, including AH, addresses.

ordinary welfare maximization, unequal treatment of equals typically will be undesirable.[23] If it maximizes welfare to treat individual 1 in manner *X* and not *Y*, then, if individual 2 is in every relevant respect identical to individual 1, it usually will be optimal to treat individual 2 in manner *X* and not *Y*.[24] Hence, if we observe individuals 1 and 2 being treated differently, there is a prima facie reason to believe that a mistake is being made. Thus, if 1 should be allowed some business expense deduction to measure his true net income more accurately and 2 is in the identical situation, 2 typically should be allowed the deduction for the same reason.

Three observations about this case should be noted. (1) Whether individuals 1 and 2 are equal in relevant respects may have nothing to do with whether their pre-tax incomes are equal. (For example, whether two individuals medical expense deductions should be equal may depend primarily on whether both individuals were equally sick.) (2) The argument for equal treatment of individuals involves a failure to maximize welfare, not the difference in treatment per se.[25] That is, treating individual 2 incorrectly would involve a mistake even if individual 1 (who is treated correctly) did not exist. (3) Finally, unequal treatment may not result in inequity of any kind, such as when unequal treatment causes market responses, with the result that only inefficiency remains (as discussed below).

Second, unequal treatment of equals may raise inequality, conventionally measured. Typically, unequal treatment adds noise to the income distribution, raising the variance and

[23]There are exceptions, such as when there are nonconvexities, but our intuition about the general problem presumably reflects the typical case.

[24]This point can usually be extended, by continuity, to individuals who are similar rather than identical, paralleling AH s extension of the notion of HE from identical to similar individuals.

[25]Thus, under a conventional welfare function, mismeasuring a taxpayer s income (say, by overestimating the income of some poor people) will result in the imposition of a tax that will tend to reduce welfare relative to what would otherwise be optimal; no independent measure of HE is appropriate. See Kaplow (1996b).

thus, ceteris paribus, lowering welfare as conventionally measured. For example, if one observes that a reform does not change the average tax burden of each decile in the income distribution, one might be misled because, if the variance in each decile rises, there will be greater resulting inequality. See Atkinson (1980). Hence, it is useful to analyze disaggregated data (such as that employed by AH in their applications), but the end remains measuring social welfare. Thus, an unmodified welfare function, not one like AH s that places weight on HE, provides the correct basis for policy assessment.

Third, and related, provisions that add noise to the system may involve exposing individuals to risk, which tends to reduce welfare (again, as conventionally measured). And, in fact, uncertainty does exist in the process of tax assessment and enforcement, even though it usually is not as extreme as in the illustration in section 2.

Fourth, individuals might be upset by what they view to be arbitrary, unequal treatment. For example, when individuals learn that others are able to avoid their taxes, they may become envious. Of course, whether this is true is an empirical question, depending on individuals actual tastes about such matters and whether they are aware of the unequal treatment. With regard to the latter, it is worth noting that the sort of HE violation that can be uncovered only by applying a sophisticated HE index to detailed data sets is unlikely to be an important actual source of envy. (Indeed, most individuals probably do not know their neighbors taxes, nor whether those who benefit from various tax provisions do or do not have nearly the same pre-tax income.) In any case, if individuals prefer to be treated equally, this taste would count in a proper measure of social welfare, just as would any other taste, because the taste would be reflected in individuals utility functions.[26] There is no independent normative principle involved.

Furthermore, it is not obvious whether any envious preferences that may exist in this context are limited to or even focused on unequal treatment of individuals with equal (or similar) pre-tax incomes. Working class individuals, for example, may be more upset by the unique access of the rich to myriad tax loopholes than by the tax avoidance of their own class. And we might suppose that they would be more, not less, upset if they knew that every rich person took advantage of such loopholes rather than only some of them, the opposite of the HE problem (which would exist only if there were unequal treatment among the rich). It also seems plausible that the most likely sources of upset from unequal treatment would arise from particular provisions that were understood to involve improper discrimination (such as taxes that differed by race or religion).[27] In all, it does not seem that aggregate HE measures of the AH type would be very good at identifying what actually makes taxpayers upset.

Additional possibilities could be noted. Consider, for example, the earlier discussion of concerns about the abuse of power. It is also the case that, in making political judgments, decisionmakers will wish to know who gains, who loses, and when individuals are treated unequally, as this will allow a better assessment of the legislative vote count, who may be depended upon to make campaign contributions, and how one s constituents are likely to react.[28]

[26] AH at one point make comments suggestive of individuals having tastes pertaining to unequal treatment, but their observation is used to motivate a welfare function that does not depend only on individuals utilities rather than a modification to individuals utility functions.

[27] Another instance where some taxpayers may be upset involves the marriage penalty (and other rules regarding how family units are treated differently). See the discussion below.

[28] This final set of concerns is more relevant to the problem of predicting government behavior (political economy) than that of evaluating the effects of policy (welfare economics). In any case, the relevance of HE indexes is dubious in this context as well. There may be natural groupings of individuals, such as farmers, retirees, and so on. But

In summary, a number of conclusions are apparent. First, there are many reasons why observed instances of unequal treatment may suggest relevant concerns. This helps to explain why we instinctively feel that HE is important. Second, we know that equal treatment is important in other contexts and, indeed, in the post-civil-rights-movement era in which we live, we have internalized the notion that equality is important in its own right. This further explains our automatic inclination to be concerned about unequal treatment. Third, and most importantly, none of this implies that HE is an independent normative principle. Rather, in each instance, we can identify rather precisely how concerns about unequal treatment dissolve into matters of social welfare, as conventionally measured. Fourth, the HE indexes presented in the literature including AH s new measure seem largely unrelated to the identified bases for concern about unequal treatment.

Sources of unequal treatment that are captured by HE indexes: One point of the preceding discussion was that most of the problems that may exist when there is unequal treatment of equals are not well diagnosed by an index of HE. I now consider some of what is captured by HE indexes.

One major source of potential unequal treatment involves the tax treatment of different family configurations. In such instances, there is often genuine disagreement about who should be deemed to be equal to whom in the first place. As AH make clear in their discussion of this subject, one first must resolve these disputes before one knows how to measure any loss in HE in the tax system. The HE index proposed by AH cannot help to identify or resolve such

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each group s lobbyist is presumably concerned about the treatment of his group versus everyone else, not about the degree of equality of treatment within the various groups.

problems.[29]

A similar situation exists with respect to many tax deductions, such as the medical expense deduction (also addressed by AH). Allowing this deduction will reduce the measure of HE if the pre-tax reference distribution is taken to be, say, adjusted gross income, but will increase HE if the reference distribution is defined as pre-tax income minus medical expenses. As AH suggest, we will have identified real rather than spurious reductions in HE only when we have first identified a provision that we believe incorrectly measures the ideal tax base. But if this is the case, we will have already reached our policy . If it should turn out that we need some measure of the extent of an existing problem (perhaps how much we mismeasure ability to pay by using an incorrect provision for medical expenses), the measure should be derived from the same principles that motivate our tax regime and guide us in identifying the ideal tax base that is, the principles that tell us what is incorrect about the provision. There is no need for a generic measure with an aesthetically appealing functional form but with no apparent connection to the principles at hand.[30] This concern seems seem applicable to many tax provisions.

Another important characteristic of HE indexes is that much of the inequity that they do measure is spurious. One of the main instances in which an index like AH s will register reductions of HE is when pre-tax prices (including wages and rates of return on investments) are

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[29]I would note further that the usual manner of talking about these sorts of problems is itself deficient in a manner akin to the problems with justifying HE as an independent normative principle. After all, what is meant by asserting that one or another definition of the family unit is better ? Presumably, what should matter is not the resolution of semantic debates but rather the outcome of actual policies and, in particular, their effects on individuals well-being. Thus, the question of what is the right way to conceive of the family unit for tax purposes is usefully restated as the question of which tax rules regarding families best promote social welfare. This is a problem that can be addressed directly, using the conventional welfare economic framework. See Kaplow (1996a).

[30]Suppose, for example, that a tax deduction is undesirable because it implicitly subsidizes wasteful entertainment expenditures. The proper measure of the extent of the problem would be one that indicates the extent of inefficiency, not an index of HE.

influenced by the tax system itself, which is often the case. (Remember that the AH index privileges the pre-tax distribution of income, which, of course, depends on pre-tax prices.)

Consider the familiar example of tax-free interest on municipal bonds. Two taxpayers have identical pre-tax incomes, all from bond interest. One has all taxable interest. The other has all tax-free interest. After-tax, the former has a lower income. An index like that proposed by AH will identify an inequity. The problem, as we all know, is that the two individuals were not equal pre-tax. Rather, the one with municipal bonds must have had a greater investment in order to earn the same interest, so his ending up with more after-tax income is correct.

Suppose instead that one compared two investors with the same wealth, one investing in municipal bonds and one in taxable bonds. Here, the AH measure would also show a violation of HE, because the individual with taxable bonds had greater pre-tax income but only equal after-tax income. (Recall that the AH measure does not confine itself to comparisons of precise pre-tax equals.) But we know that this too is misleading: it is not really correct to say that the individual investing in municipal bonds pays no taxes ; rather, the pre-tax return on the municipal bonds is depressed relative to the taxable rate of return. These two taxpayers are, in reality, treated equally.

This example is hardly atypical. Pre-tax rates of return on all investments ranging from rental real estate to manufacturing equipment to timber land tend to be influenced by the tax system. With regard to labor income, a variety of fringe benefits as well as nonpecuniary amenities and disamenities of jobs will be reflected in pre-tax wages and thus confound the HE index. The general (and familiar) point is, as Bittker (1979) observed, that inefficiencies tend to drive out inequities because the market takes the tax system into account.

Consider the implications of this phenomenon for a measure of HE based on pre-tax incomes. In general, one would expect that many identified losses in HE will involve no inequity at all.[31] Moreover, if one could measure true or comprehensive pre-tax income more accurately (as AH s discussion implicitly suggests would be appropriate), one might then find even more instances of apparent losses in HE that involve no inequity at all, even accepting HE as a valid normative principle. For example, if we included the value of free travel available to airline employees in measuring their pre-tax income, they would appear to have a lower tax rate than others with the same pre-tax income, but this would ignore that compensating wage differentials already take any tax benefit into account.

5. Conclusion

Horizontal equity should not be measured and new measures of social welfare should not be deployed until we know what we are trying to measure and why. Auerbach and Hassett, like previous authors on the subject, develop indexes of HE without addressing these foundational questions. To adopt their approach is to ask society to sacrifice individuals well-being, yet there is no indication of what we are getting in return. I have suggested that there is in fact no good argument for viewing HE as an independent evaluative principle and that pursuing HE is in conflict with the very core of welfare economics, the Pareto principle.

Despite these criticisms, most of us feel that equal treatment of equals is important. This concern is apt in other settings, and unequal treatment often indicates problems in the tax policy context. But these problems all involve reductions in social welfare, conventionally understood, and do not signal the existence of some independent evaluative principle. Moreover, measures of

[31] This problem is one of the reasons that prior writers, such as Feldstein (1976), offered for using the pre-reform (status quo), after-tax distribution as a benchmark and focusing on the effects of tax changes.

HE, including the new one advanced by AH, do not seem to be related to the sorts of problems that may exist. Thus, there is no basis for continuing to develop increasingly refined measures of HE.

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