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# A FUNDAMENTAL OBJECTION TO TAX EQUITY NORMS: A CALL FOR UTILITARIANISM

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***Abstract*** *- Anti-utilitarian norms often are used in assessing tax systems. Two motivations support this practice. First, many believe utilitarianism to be insufficiently egalitarian. Second, utilitarianism does not give independent weight to other equitable principles, notably concerns that reforms may violate horizontal equity or result in rank reversals in the income distribution. This investigation suggests that a policy maker who believes in the Pareto principle—that any reform preferred by everyone should be adopted—cannot consistently adhere to any of these anti-utilitarian sentiments. Moreover, the affirmative case for utilitarian tax policy assessment is stronger than is generally appreciated.*

## INTRODUCTION

This paper is concerned with the normative principles that should guide tax policy assessment. The simplest and most studied norm is utilitarianism, which favors whatever regime produces the greatest total utility. However, most tax policy analysts do not embrace utilitarianism, primarily for two reasons.

First, they find utilitarianism to be insufficiently egalitarian. It is true that utilitarianism favors equality, all things being equal, because of decreasing marginal utility of income: redistributing a dollar from the rich to the poor increases total utility. However, complete equalization is rejected because of the adverse effect of redistribution on incentives to work. The objection to utilitarianism is that it gives insufficient weight to equality. The weight it gives is determined by the degree to which individuals' marginal utility declines, which is now understood to be related to risk preferences. However, one might favor more equality.[1] A Rawlsian approach, to take an extreme, would put all weight on the poorest individual (even if most of the national wealth were sacrificed in the process).[2] "Moderates" favor intermediate weights. Leading articles in the literature on the optimal degree of redistribution—the optimal income tax literature—typically report the appropriate tax rates for a range of distributional preferences; utilitarianism is presented as one polar case and the Rawlsian ap-

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proach as the other.[3] Aside from utilitarians and followers of Rawls, however, few have attempted to offer a moral theory to justify the degree of egalitarian preference; the choice is left to intuition. No consensus or leading view has emerged.

Second, utilitarianism is viewed as deficient for ignoring equitable concerns about the relative positions of individuals in the income distribution. Horizontal equity—the command that equals be treated equally—has received the greatest attention. A possibly related concern for avoiding reversals in individuals' positions in the income distribution is often expressed. A substantial literature develops equity indexes designed to measure violations of these norms, and such measures have been used to assess various tax reforms.[4] There has been virtually no attempt to ground such approaches in a theory of distributive justice.[5] Although many believe there are norms worthy of independent weight in evaluating tax reforms, there is substantial variation in proposed measures and little consensus even on basic premises.

This paper demonstrates that both criticisms of utilitarianism are fundamentally misguided, at least for policy makers who accept the Pareto principle. The Pareto principle holds that a reform preferred by all individuals should be implemented. The principle is appealing because it involves a rather limited value judgment that most find acceptable, at least in the context of rather sterile comparisons of tax reforms in which the only data presented are individuals' after-tax incomes in various regimes. The principle, however, is rarely invoked in assessing tax policy because, on its face, it is inapplicable to real tax reforms. When there are millions of tax units, it is inconceivable that any reform, no matter how wonderful, would improve literally everyone's lot. Moreover, tax policy often is concerned with the appropriate distribution of income, which is not a question the Pareto principle purports to address.[6]

Nonetheless, the Pareto principle has important implications for tax policy norms. In particular, the next section presents examples in which consistent adherence to any of the anti-utilitarian tax equity norms leads the policy maker to reject reforms that all individuals prefer. No one who believes in the Pareto principle can consistently accept any of the views on tax equity that are prominent in the literature.

There are two respects in which this utilitarian endorsement should not be surprising. First, there is a sense in which the utilitarian claim is obvious. The Pareto principle, after all, commands that social decisions must respect individuals' preferences. All of the anti-utilitarian equity norms give weight to factors that are not of concern to individuals, so it is inevitable that adherence to such norms can lead to a conflict with the Pareto principle.

Second, work in decision theory and social choice theory established essentially the same conclusion long ago.[7] Harsanyi (1953, 1955, 1977) offers some of the earliest and most important demonstrations.[8] One of his arguments involves the original position (often associated with Rawls's subsequent work), and another involves a proof that any rational, consistent social decision maker who cares about individuals' preferences would have to be a utilitarian. This work has not, however, penetrated discussions of tax policy, perhaps because of its technical nature and because the intuition for the results and their application to tax equity norms are not immediately apparent. For this reason, the present paper briefly describes these two derivations of utilitarianism from ethically appealing assumptions. This survey is followed by a discussion of some of the issues that have

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proved controversial in these literatures to see whether they qualify the suggestion that utilitarianism is the appropriate norm for tax policy.

## DEMONSTRATION THAT TAX EQUITY NORMS ARE IN FUNDAMENTAL CONFLICT WITH THE PARETO PRINCIPLE

### *The Question Addressed*

It is useful to be as precise as possible at the outset about what the examples to follow are designed to demonstrate. The question is whether one can *consistently* adhere to both an anti-utilitarian tax equity norm and the Pareto principle. The motivation rests on the assumption that those who believe in these norms purport to believe in them consistently. Thus, for example, if one's equity index registered −10 in considering one reform, the same index would be applied in assessing a similar reform, rather than stipulating the index to be zero if it just so happened that the latter reform involved a particular individual having income equal to some unlucky number or resulted in a violation of the Pareto principle.

Furthermore, I assume that these anti-utilitarian norms are intended to have *independent significance*; that is, I assume they are not mere tiebreakers.[9] Another way to state the point is that, for whatever norm one has in mind, one would be willing to pay something, some positive amount, to avoid the violation of the norm. Thus, one would prefer an alternative regime that differed in only two respects: (1) the norm violation was eliminated or materially reduced, and (2) each individual had a little less income. The amount by which income is less can be small: a dollar, a cent, or a millionth of a cent. The point is simply that the norm has no independent significance if we should not be willing to pay even a tiny fraction of a cent to avoid violating it.

### *Example: Egalitarianism and Horizontal Equity*

Consider a reform that moves from regime I to regime II:

| Regime I | | Regime II |
|---|---|---|
| 50, 50 | $\Rightarrow$ | 60, 40 |

The numbers indicate income levels of two individuals, each of whom has the same utility function, where utility is simply a function of income. In regime I, the two individuals each have income of 50. In regime II, they have incomes of 60 and 40; which individual has which income is determined by chance, where there is a 50 percent probability of each outcome.

If one has a preference for equality, regime I is better because there is less inequality, under any conceivable measure.[10] In addition, equal treatment of equals is not provided in the move to regime II. Thus, if one gives independent significance to either of these anti-utilitarian norms, regime I is superior to regime II. (Another example, below, will address reversals in positions in the income distribution.)

I now wish to modify the example slightly, to make the choice of regimes more of a real contest. Consider the following:

| Regime I | | Regime II |
|---|---|---|
| $50 - C, 50 - C$ | $\Rightarrow$ | 60, 40 |

Here, each individual's income is lower by $C$ in regime I (the status quo). For example, it might be that regime II is more arbitrary because it forgoes the added expense entailed by more precise rules or higher quality audits and adjudication.

### *Demonstration of Conflict with the Pareto Principle*

Suppose first that individuals are risk neutral. That is, individuals are indifferent be-

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tween receiving, say, 100 of income for certain and taking a gamble that may result in higher or lower income, but has an expected value of 100 (perhaps a double or nothing bet turning on the toss of a coin). When individuals are risk neutral, it is straightforward to show that the anti-utilitarian norms conflict with the Pareto principle.

Begin with the Pareto principle. Each individual has an expected income of 50 if regime II is implemented (recall that income is 60 or 40, each outcome having a 50 percent chance). Under regime I, income is only $50 - C$. All individuals, therefore, strictly prefer to move to regime II *no matter how low the level of C that must be paid, as long as C is not literally zero.*

By contrast, adherence to either of the anti-utilitarian norms requires selecting regime I if $C$ is not too high (for example, if it is a tiny fraction of a cent).[11] One can view $C$ as the cost of achieving equity and ask whether incurring the cost is justified by the norm in question. As previously explored, it is assumed that one is willing to pay something to avoid inequity. If one adopted a utilitarian norm, however, regime II would be favored because the sum of utilities (in this example, reflected simply by the sum of incomes) is greatest in that regime.

The conclusion is that utilitarianism is consistent with the Pareto principle but each of the anti-utilitarian norms conflicts with the Pareto principle. One might object that the assumption of risk neutrality is unrealistic and indeed removes a source of motivation for preferring regime I. However, any equitable norm that is truly appropriate should be used consistently and should not depend on what individuals' preferences happen to be. Thus, the failure of the anti-utilitarian norms in this simple case should be decisive if one accepts the Pareto principle.

Nonetheless, it is instructive to consider the case in which individuals are risk averse. Suppose further that no insurance is available, so individuals would actually bear the risk in moving to regime II.[12] In this case, individuals would be willing to pay something to avoid the move to regime II because the move entails risk. Let R denote the most that individuals with certain incomes of 50 would be willing to pay to avoid imposition of this risk.[13] This amount is commonly referred to as a risk premium. It reflects the maximum amount an individual would pay for complete insurance. In this example, insurance is unavailable if there is to be a move to regime II. However, insurance is implicitly available because it is feasible to stay in regime I. Staying in regime I, however, entails a cost of $C$. If $C < R$—that is, if the cost of implicit insurance is less than the risk premium—individuals will unanimously prefer regime I. If $C > R$, individuals will unanimously prefer regime II. (If $C = R$, each individual will be indifferent.)

Now consider application of the equity norms. A pure utilitarian would make precisely the same choices as individuals. In evaluating the added inequality of income in regime II, a utilitarian would use individuals' utility functions. The utilitarian is averse to inequality by exactly the extent to which individuals are averse to risk. Thus, as when individuals were assumed to be risk neutral, utilitarianism is consistent with the Pareto principle.

For the anti-utilitarian norms, the conclusion is different. To be of any relevance, such norms must give some weight to regime I. Moreover, they must give more weight than utilitarianism. (If they give exactly the same weight, they are not independent norms; rather, they are merely convoluted restatements of utilitarianism. Those who advance these norms are expressly anti-utilitarian; that is the whole

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point.) Suppose this additional weight is 2¢ per capita.[14] Consider the case in which $C$ is 1¢ greater than the risk premium: $C = R + 1¢$. Then, both individuals strictly prefer to move to regime II: the cost of avoiding the risk by staying in regime I exceeds the value of avoiding the risk. However, the equity norms would require the policy maker to choose regime I. After all, regime I costs only 1¢ more per capita than what a utilitarian would deem it to be worth, but the policy maker believes that adhering to the equity norms, which are respected in regime I but violated in regime II, is worth 2¢ per capita. Therefore, regime I would be chosen, despite individuals' unanimous preferences to the contrary.

### *Example: Rank Reversals*

To incorporate rank reversals, consider the following modified example:

| Regime I | | Regime II |
|---|---|---|
| 50, 50 | ⇒ | 60, 40 |
| 40, 40 | ⇒ | 50, 30 |

This example simply combines two instances of the prior example: the initial pair of individuals with income of 50 and another pair with income of 40, where each individual under the reform again has a fifty-fifty chance of having income rise or fall by 10. Observe that, by combining these pairs of individuals, the move from regime I to regime II now involves a pure reversal in positions between the "rich" person who ends up with income of 40 and the "poor" person who ends up with income of 50. Thus, giving any weight to avoiding rank reversals entails a strict preference for staying in regime I: that is, the regime would be chosen even if there were some added cost to each individual in regime I, as long as that cost is not too high.

Because this example is simply the combination of two instances of the initial example, it is obvious that one can analyze this case in the same manner as the preceding one. There will exist circumstances—levels of the added cost of staying in regime I—in which any anti-utilitarian norm (including a norm of avoiding rank reversals) that entails a preference for regime I will sometimes choose regime I when all individuals would prefer the reform of moving to regime II.[15] The norm of avoiding rank reversals, therefore, also conflicts with the Pareto principle.

### *Remarks*

The examples just presented may have a trivial air: equity norms valued in cents, individuals' choices decided by a penny. The argument, however, invokes logical consistency, and the demonstration uses small amounts to drive home the point. Even one who believes that greater equality, avoiding horizontal equity, or preventing reversals in the income distribution is worth a mere 2¢ per capita may find himself making choices that are unanimously opposed, that violate the Pareto principle.

I also note that, although the example is contrived, it involves no sleight of hand. The structure is simple. The character of the conflict is realistic: spending less on administration and the like often produces more arbitrariness in results. Real decisions in designing tax systems present such choices. To be sure, there usually would not be strict unanimous preference. (All it takes is one person who loses a minute when reading new instructions, only to learn that he is unaffected by the reform.) However, if evaluative norms are to be applied consistently, it hardly will do to advocate qualitatively different principles depending on whether or not such a person exists. It is no answer to this inconsistency that actual examples involving violation of the Pareto principle would not arise in practice. If they did, the consistent policy maker who believed in any of the anti-utilitarian norms would have to trump individuals' unanimous preferences. This suggests that, at the foundational level, these principles all conflict with the Pareto principle.

Related to the foregoing point, one might object that the inconsistency arose only in cases of uncertainty. Could one not adopt an anti-utilitarian norm in cases of certainty? Such a response, however, involves an inconsistent theory of distributive justice. Individuals' utilities would be weighted in an anti-utilitarian manner if they arose from a certain, fully predictable process, but identical post-reform utilities would be weighted in some other manner (a utilitarian manner) if they happen to arise from a reform that entails some uncertainty. Not only would social evaluation depend upon such morally irrelevant factors such as whether nature was sufficiently predictable in a given case, but one's distributive norm would also depend upon the details of information that the policy maker possessed. If there was uncertainty given available information (would Bill or Jill get 60 rather than 40?), one norm would apply. If, just before deciding, the policy maker learned the identity of the winner, another norm would apply, even though the personal identities of the winner and loser are morally irrelevant and would be ignored under either norm.[16]

Nonetheless, it may still appear appropriate to some that added weight be given to equality (beyond that entailed by utilitarianism) when evaluating a purely redistributive reform. However, if the same evaluative norm is to be used to assess a subsequent reform, which has characteristics like those in the preceding examples, the recommendation may involve a conflict with the Pareto principle. For example, such an egalitarian norm would favor a reform from regime II to regime I even though, once one arrived in regime I, the Pareto principle would require moving back to regime II.

The preceding discussion establishes that adherence to the Pareto principle and anti-utilitarian norms involves an inconsistency. Logically, one or the other must be rejected.[17] I would argue that the Pareto principle in this context is simple and compelling. By contrast, the other norms are essentially ad hoc, never having been derived or justified directly. In addition, such norms have often been motivated by examples and analogies that might be better understood on other grounds.[18] Various criticisms of the Pareto principle are essentially unrelated to the present argument, as will be explained below. Thus, the comparative strength of the Pareto principle and the doubt surrounding the competing norms suggest that the latter rather than the former be abandoned. The arguments in the next section reinforce this view.

## THE AFFIRMATIVE CASE FOR UTILITARIANISM

Although only a simple example, the preceding demonstration suggests that tax policy makers should be utilitarians if they hold individual welfare in sufficient regard that unanimous preference for a regime should not be trumped. It is useful to supplement this argument with two more systematic affirmative arguments for utilitarianism that Harsanyi and others have developed.[19] As it turns out, there is a close connection between these arguments and the analysis in the preceding example.

### *The Veil of Ignorance*

Although the veil of ignorance has come to be associated with Rawls' (1971) argument that we should maximize the well-being of the worst-off individual, the construct was used earlier by Harsanyi (1953)

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and Vickrey (1945), who argued that a utilitarian approach follows. Their reasoning is straightforward. A normatively appealing way to conceptualize disinterested social choice is to assume that individuals do not know their actual position in society. In particular, each person behind the veil of ignorance is just as likely to be one person (say, the richest person) as another (the poorest person). If the total population is $N$, a person behind the veil reasons: I have a $1/N$ chance of being each person $i$, whose utility in regime $X$ is $U_i(X)$; the best I can do for myself is to maximize my expected utility, which is $\frac{1}{N}\sum_{i=1}^{N} U_i(X)$. Thus, individuals behind the veil would choose the regime that maximizes the sum (average) of individuals' utilities.

The individual's situation is logically equivalent to one in which he knows his identity, has actual control over a decision, and knows that there are $N$ equally likely outcomes that have associated utilities $U_i(X)$. Von Neumann and Morgenstern (among others) have rigorously demonstrated that minimal assumptions of rationality imply the maximization of expected utility. If individuals in the original position are rational, therefore, it must be that they would be utilitarians, Rawls' contrary assertions notwithstanding.[20] (One might also note that even individuals in the world who know their circumstances would tend to favor some utilitarian element in policy making. After all, many individuals, particularly the young, face significant uncertainty about their future well-being, and those concerned about their descendants will have an even greater concern for the average well-being of members of society.)

### *Rational Social Choice*

Harsanyi (1955) offered a second derivation of utilitarianism. This approach makes three sets of assumptions. (1) Individuals are rational utility maximizers. (This is a descriptive rather than a normative assumption.) (2) Social choice also should be rational, namely: alternatives should be completely and consistently (transitively) ordered, social welfare should rise if outcomes improve, and welfare should be continuous in probabilities (*e.g.,* a policy with a slightly higher chance than another of a better outcome should be slightly preferred). (3) Social choice should appropriately reflect individuals' preferences: if all individuals are indifferent between two regimes, the choice should socially be one of indifference, social welfare should rise rather than fall with individual welfare, and each individual should receive equal weight.

Under these assumptions, Harsanyi proved that social choices must conform to the dictates of utilitarianism: the unique social welfare function maximizes the sum of individuals' utilities. The normative appeal has two elements, corresponding to the second and third sets of assumptions: social choices should be rational, and they should even-handedly reflect individuals' preferences. (The latter requirement, it should be noted, implies that social choices are consistent with the Pareto principle.) Although not immediately apparent, and perhaps even counterintuitive, a utilitarian prescription necessarily follows.

Given this derivation, the prior demonstration that all the anti-utilitarian tax policy norms conflict with the Pareto principle is not surprising. Harsanyi rigorously showed that respect for individuals' well-being of the sort embodied in the Pareto principle, combined with logical consistency of social decisions, implies utilitarianism. The method of Harsanyi's proof exploits properties of consistency when decisions involve uncertainty. My examples similarly involve uncertainty, which often exists in the realm of tax policy.

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Moreover, as already noted, the examples could be seen as involving uncertainty in a different sense: there may be no uncertainty regarding the effects of a reform, but only concerning the identities of winners and losers. Disinterested social policy requires that social choices not depend on these identities. (Decisions may depend on whether, *e.g.*, a particular loser is rich or poor, but not on which rich person or which poor person is the loser.) This, in turn, is similar to a veil of ignorance construct, in which utilitarianism is also implied.

### *Remarks*

It is useful to identify the intuitions behind the utilitarian result in the preceding examples and Harsanyi's derivations. First, the Pareto principle (and similar requirements) demands that social welfare respond directly and exclusively to individuals' welfare. Anti-utilitarian norms inject value judgments that are divorced from and may conflict with individuals' welfare. (The examples show how this can occur.) Second, decision theorists demonstrated a half century ago that rationality in individual decision making implies the maximization of expected utility, a summation over possible outcomes (measured in utility). Analogous reasoning has been used to show that rationality in social decision making implies the maximization of the summation of possible outcomes, measured in individuals' utilities.

## DISCUSSION

Prior examples indicate that anti-utilitarian tax equity norms are in fundamental conflict with a respect for unanimous individual preferences (the Pareto principle), and the preceding section presents two affirmative derivations of utilitarianism from ethically appealing assumptions. Nonetheless, a range of considerations and objections need to be examined; even most committed utilitarians admit qualifications of some sort. A brief paper on tax equity norms cannot be the place for a comprehensive analysis or defense. It is appropriate, however, to consider some of the issues.

My claim in this section is that many objections to the Pareto principle or utilitarianism, if persuasive, are either inapplicable in the present context or call for adjustments. Most importantly, such arguments do not support the sorts of anti-utilitarian principles that are criticized in this article. I believe, therefore, to have made a *prima facie* case against these departures from utilitarianism. Adherents to conflicting tax equity norms need to present some affirmative justification for their views and for particular indexes designed to implement them. Indeed, it is unclear how one can proceed intelligently with the measurement of or giving weight to such norms without knowing more precisely what they are or why we think they exist.[21]

### *Critiques of the Pareto Principle*

The present argument depends upon accepting the Pareto principle, so the primary way to avoid the utilitarian conclusion is to reject the principle. One criticism of the Pareto principle is that it takes individuals' preferences as given. Individuals may be misinformed (they may misjudge the probability of an event), their judgment may be questioned at a deeper level (paternalism), or some preferences (envy, racism) may simply be rejected as morally irrelevant. However, accepting these criticisms does not seriously affect the present argument. One could substitute "corrected" preferences for actual preferences.[22] Thus, the policy maker could consider individuals' "true" utility rather than perceived utility or could ignore utility arising from impermissible preferences. Then, the Pareto principle applied to these adjusted preferences would conflict with each anti-utilitarian

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norm but would be consistent with utilitarianism applied to the adjusted preferences. Note, moreover, that none of these criticisms about individuals' preferences provides a justification for any of the anti-utilitarian norms. In the tax policy context, these norms have simply been applied to levels of after-tax income; there is no connection between the norms and indexes, on one hand, and any misunderstanding of tax reforms or improper expenditure of income, on the other hand.

Another possibility is that individuals might have direct preferences for the distributional characteristics reflected in anti-utilitarian norms: for example, they may want incomes to be equal. Theoretically, this is wholly consistent with the Pareto principle and utilitarianism: individuals' utilities would reflect these aspects of the income distribution and the correct procedure would be to sum the utilities thus defined. One would not engage in axiomatic derivations of equity indexes or ponder characteristics of the just society in the manner of a moral philosopher. Rather, this question is empirical, so one would conduct opinion polls or engage in other research about the preferences of typical citizens.[23] Those advancing anti-utilitarian tax equity norms have not claimed that the particular concerns for equity and distribution, as captured in various proposed measures, have a real correspondence to individuals' actual preferences.[24]

In addition, whatever individuals' preferences about such equitable norms might be, there is some question as to whether they should be given weight in the described manner. It has been suggested that individuals should be viewed as having two sets of preferences: personal preferences about their own well-being (and others to whom they feel attachments) and moral preferences about what society should be like.[25] If they are morally worthy citizens, they would vote for policy based on the latter preferences. However, when an individual asks why she should hold a particular social preference, one might expect the reasons to be concerned with effects on individuals. To incorporate social judgments into personal preferences confuses the issue. Moreover, it results in circularity. If an equity norm is initially held by all, but is in error, how could it ever be criticized? If all hold it, all favor it; therefore, society should act on it. The present paper is designed to show that the anti-utilitarian norms, which have not been independently justified, are probably mistaken because in principle they can require choosing regimes that are to everyone's detriment. If most individuals make this same mistake, they might indeed vote for such regimes, and one could then argue that the result is not truly to everyone's detriment. However, on reflection, I suggest, if the only appeal of the norm is that it matches current belief, it qualifies as a personal preference but not as an independent ethical norm. Furthermore, if the present analysis is correct, such a preference might be changed with sufficient education (and thus it may be better called a belief than a true preference), and such mistaken preferences are, as noted previously, ones that some utilitarians might deem it appropriate to ignore.

Other questions about the Pareto principle have been raised.[26] The main point to note is that objections are almost invariably of two types. First, there are objections to basing social decisions on individual welfare. However, the anti-utilitarian tax policy norms are generally based directly on individual welfare (or income as a surrogate for welfare). Second, one may question whether social welfare is always affected positively by individual welfare. For example, a distribution in which both the rich and the poor have incomes

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of 10 might be deemed preferable to one in which the rich have 50 and the poor have 40. If one accepts such a view, the appropriate anti-utilitarian norm would be rather different from, and more striking than, the principles of tax equity that have been advanced in the literature.

### *Other Criticisms of Utilitarianism*

The Pareto principle is not sufficient to derive utilitarianism. For example, selfish dictatorship (choose the policy that is in Joe's best interest, without regard to the welfare of everyone else) is consistent with the Pareto principle: no policy preferred by the dictator would ever be trumped. The preceding section explored the additional assumptions used in derivations of utilitarianism, namely that social choices be rational and give equal weight to each individual.

Utilitarianism entails, however, an additional premise (one shared with the anti-utilitarian equitable norms): interpersonal comparisons of utility are assumed to be meaningful.[27] Despite the emphasis on ordinalism in welfare economics during the middle of the twentieth century, it is now generally accepted that interpersonal comparisons of utility are necessary if distributional judgments are to be made.[28] For example, a statement that a rich person has greater well-being than a poor person, at least on average, involves a comparison of utility levels. Suggesting that a dollar is generally worth more to the poor than to the rich involves comparing marginal contributions to utility. Several writers have addressed this subject, and it is not pertinent to the choice among norms addressed here.[29]

There is also a question of the descriptive perspective adopted when applying tax equity norms.[30] For example, regime II can be described in terms of final incomes (in the table) or in terms of the actual risks to which each individual is exposed (in the verbal description, in which each individual in the first example has a fifty-fifty chance of an income of 60 or 40). To a utilitarian, these descriptions are equivalent. However, different descriptions may lead to different social judgments for anti-utilitarians. For example, risk-neutral individuals are indifferent between 50 for sure and a fifty-fifty chance of 60 or 40, and the utilitarian criterion assesses both worlds equally. Yet the anti-utilitarian judgments deem the final result—one person with 60 and the other with 40—to be inferior to that in which each has 50. Nonetheless, if regime II is described as giving each individual the same type of lottery ticket, some anti-utilitarians (who believe in "*ex ante* equity") might adopt the view that no inequity is involved when moving to regime II. This, in turn, would salvage their position as consistent with the Pareto principle.

There are serious problems with this defense. First, as the equity norms have been presented in the literature, measured by indexes, and applied in evaluating actual tax reforms, this is not the approach taken. (Indeed, when the choice is addressed, an *ex post* view is usually favored.) Second, in the actual contexts in which these norms are advocated—general tax reforms that have a range of difficult-to-predict effects—the lottery description is indeed accurate, if not with regard to effects on overall inequality (which are often but not always intended), then at least with regard to much unequal treatment of equals and rank reversals that may arise. Even when particular winners and losers can be identified in advance upon investigation, they are hardly known to the policy maker who is relying upon results from large-scale simulations that use an anonymous database. Thus, the information available to the social decision maker is precisely that described in the examples.

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Indeed, the previous discussion shows how one can characterize reforms as involving two steps: (1) the reform is analyzed using aggregate data, and (2) a further investigation is undertaken to determine the personal identities of the winners and losers. Implicitly, the argument is that a wholly different normative evaluation must be performed after step 2 than after step 1. Alternatively, step 1 could be deemed the proper point of evaluation, which would salvage consistency with the Pareto principle but eliminate the practical bite of horizontal equity and rank reversal norms.

There remains the claim that the ex ante income distribution should be more egalitarian than a utilitarian would require. This raises a final problem: the arbitrariness of the status quo, which was produced by a series of prior reforms spanning years, decades, and even centuries.[31] If the ex ante view is adopted, should one not go all the way back, to an "original position" before individuals know anything about what will transpire in the world? As already noted, from that position utilitarianism would immediately follow.

A rather different critique of utilitarianism involves taking a libertarian approach, under which regimes are not evaluated by any sort of welfare function but rather with regard to whether designated entitlements are respected. Any distributive effect that infringed upon entitlements might be decisive against a reform. It is not clear that any modern tax system would be legitimate under this view, unless one invokes ex ante social contract reasoning. If the social contract is entered after individuals know their abilities to earn income, they would not unanimously consent to much redistribution, and it is likely that there would be at least one vote against virtually any regime. If the social contract is imagined to be entered behind a veil of ignorance, however, utilitarianism would be the unanimous choice, so there would be no conflict. Finally, it should be noted that none of the anti-utilitarian tax equity norms in the literature are implied by libertarianism. Libertarians are not concerned with unequal treatment or rank reversals per se; they object to any reduction in welfare that violates entitlements. In particular, a reform that moved all individuals' incomes closer to the mean, with perfect equal treatment and no rank reversals, is just the policy usually offered to illustrate what libertarians find most objectionable about taxation. However, such a reform satisfies or advances all the anti-utilitarian tax equity norms considered here.

### *Institutional Considerations*

Many commentators have objected that utilitarianism is insufficiently concerned about the process by which a particular distribution of income might be generated.[32] Such concerns no doubt motivate the attention devoted to horizontal inequity and rank reversals. Inequity may be arbitrary, arise from improper action (perhaps discrimination against minorities or political opponents), or reflect a denial of equal opportunity.

These concerns should be taken seriously, but they are not directly pertinent to tax equity norms of the sort proposed in the literature. Consider the unequal treatment or change in positions in the income distribution that arises in the tax reforms that have been analyzed. Virtually all such inequity is produced in one of two ways. First, there is simply the randomness described above, which is inevitable when uncertainty is ubiquitous and perfect administration is costly if not impossible.[33] Second, inequity may arise when particular provisions are intentionally changed, but then the change may be evaluated directly. For example, raising

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the personal exemption for the blind will treat unequally individuals with the same income but who differ with respect to eyesight. As a matter of equity, one might favor or oppose such a change, but a horizontal equity index would be superfluous because it begs the question whether eyesight is relevant to the social allocation of resources.[34] Alternatively, raising the personal exemption for everyone would treat unequally families with the same income but different numbers of dependents. However, to invoke horizontal equity to oppose such a change assumes that different-sized families are equals in the normatively relevant sense, which begs the question about the proper treatment of dependents. Those favoring the change would argue that the higher exemption is necessary to measure and compare the welfare of different families in a proper manner—that is, to determine who are the equals who should be treated equally.[35]

By contrast to such instances of possible inequity, some tax policies raise real process concerns. For example, a method of audit may give too much opportunity for abuse by government officials, or a tax court might be biased against racial minorities. It is wholly consistent with utilitarianism—particularly rule utilitarianism—that systems should be designed with a concern for minimizing such problems.[36]

The anti-utilitarian tax equity norms do not address this issue directly. Nonetheless, paying attention to horizontal equity and rank reversals might sometimes be useful in this context because the observation of a violation can motivate investigations into the cause of "inequity," which might occasionally turn out to involve improper behavior that can then be corrected. The equity index in this instance would be used as a warning signal, just as a doctor might consider an otherwise benign physical symptom in deciding whether to perform a diagnostic procedure. Such use of an equity index, however, is qualitatively different from using the index to measure the weight to be given to an independent norm in assessing policy, particularly in a context like tax reform in which the index will routinely indicate violations that are innocuous.

## CONCLUSION

In assessing tax policy, there is disagreement about how egalitarian the income distribution should be in light of the incentive problems caused by redistributive taxation. Additional ethical concerns have been raised—notably, that horizontal inequity and reversals in individuals' positions in the income distribution should be avoided. Usually, the norms and indexes are merely stipulated or are supported by ad hoc appeals to intuition.

The central argument presented here is that all tax equity norms that depart from utilitarianism are inconsistent with adherence to the Pareto principle, a belief that reforms preferred by everyone should be adopted. Most tax policy analysts believe in the Pareto principle. Moreover, there exist ethically appealing derivations of the utilitarian norm. Although objections and qualifications have long been noted, it appears that none undermine the present arguments or provide a justification for the anti-utilitarian principles and indexes developed in the literature. As a result, the case against these other tax equity norms and in favor of utilitarianism is strong. At a minimum, it is hard to justify continued adherence to the anti-utilitarian norms until a serious effort is made to defend them more directly and to explain why the Pareto principle should not merely be qualified, but wholeheartedly rejected.

## ENDNOTES

I am grateful for comments from Reuven Avi-Yonah, Christine Jolls, Steven Shavell,

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Joel Slemrod, Al Warren, workshop participants, and the referees, and for support from the John M. Olin Center for Law, Economics, and Business at Harvard Law School. A work in progress available from the author contains more extensive discussion of the issues addressed in this paper.

1 Many have explicitly rejected the connection between individuals' risk preferences and social concerns for equality. See, *e.g.,* Arrow (1951), Rawls (1971), Sen (1973). For an apparent retraction, see Arrow (1973). Rejecting individuals' risk preferences in this context involves paternalism, as indicated in note 22. Observe that rejection of risk preferences does not necessarily imply a greater preference for equality than that implied by utilitarians rather than less. Absent a contrary derivation from a specific theory of distributive justice, there is no guarantee that an analyst's intuition about distributive weights will entail more of a desire to avoid low incomes than is reflected in various individuals' utility functions.

2 It is common to refer to this approach as "Rawlsian" due to Rawls' (1971) advocacy of this position, although the actual implementation of his egalitarian norm in tax policy and social choice theory often departs from his particular presentation.

3 See, *e.g.,* Atkinson (1973), Mirrlees (1971), Stern (1976). Atkinson suggests broader extreme boundaries, as when there is an anti-Paretian preference for greater equality.

4 See, *e.g.,* Aronson and Lambert (1994), Atkinson (1980), Berliant and Strauss (1993), Feldstein (1976), King (1983), Musgrave (1990), Plotnick (1981).

5 Most articles are entirely silent on this question. Indexes are stipulated, with features defended or criticized using ad hoc appeals to intuition. For a critique, see Kaplow (1989). (That article also suggests that concerns for horizontal equity dissolve into a risk aversion, or concerns for vertical equity, which is suggestive of the argument here.) Musgrave (1990) seeks to defend horizontal equity by indicating how it is not affronted by various theories of distributive justice in a simple, first-best world, even though it is violated in a more complicated world. The index he offers, however, does not purport to derive from any of the distributive theories he discusses.

6 The Pareto principle does imply that the policy maker should not be *more* egalitarian than Rawls' extreme position. Similarly, it implies a limit on the weight that may be given various equity norms: it would conflict with a horizontal equity norm of such weight that two "equals" would be given an income of 50 rather than allowing one to get 60 and the other 70.

7 In the tax policy literature, Stiglitz (1982) established the possible inconsistency between a concern for horizontal equity and the Pareto principle. However, this aspect of his article did not provoke much reaction, perhaps because the article (including the title) emphasized the conflict of horizontal equity with utilitarianism rather than with the Pareto principle and because most of the article uses complex analysis to establish subtle points about the optimality of randomization in taxation.

8 The present paper's examples and some of the discussion are close in spirit to Harsanyi's original work as well as other work in decision theory and social choice theory, particularly Fleming (1952), Hildreth (1953), Maskin (1978), Myerson (1981), Ng (1981), Strotz (1958), and Vickrey (1945, 1960).

9 Because a perfect tie is unlikely, tie-breaking norms are hardly important, and I doubt the literature on these other norms is intended to serve only this trivial purpose.

10 Normative inequality measures based upon social welfare functions must translate the incomes into utilities and then engage in interpersonal comparisons of utilities. I assume such interpersonal comparisons are possible; the issue is discussed further below.

11 The statement in the text applies any egalitarian equity norm to the resulting (ex post) distribution—that is, the actual distribution that prevails in regime II. This approach (which is conventional) is examined further in the remarks at the end of this section and in a later section. For utilitarianism, the sum of ex ante utilities and the sum of ex post utilities will be equal, so the choice of perspective for ex ante policy analysis is irrelevant.

12 If there was imperfect insurance (*e.g.,* if only partial insurance were available or if there were a loading charge), one could modify slightly the argument in the text to produce the same result. If there was perfect insurance, the analysis would be like that when individuals are risk neutral (except that the result might be deemed irrelevant because the actual incomes in regime II would not be 60 and 40, but instead would be 50 and 50 after insurance payments were taken into account).

13 That is, $R$ is the amount of income such that

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$U(50 - R) = 0.5 \times U(60) + 0.5 \times U(40)$, where $U$ is the utility function. When individuals are risk averse, $R$ is positive.

[14] It will be obvious that any positive amount, say, 2 millionths of a cent, will do for the argument.

[15] The only complication is that one must decide how to allocate the cost $C$ between the "rich" and "poor" in regime I. When individuals are risk averse, it suffices to set $C_{rich}/C_{poor}$ equal to $R_{rich}/R_{poor}$. Thus, if $C_{rich} < R_{rich}$ (which, given how the cost ratio is set, implies $C_{poor} < R_{poor}$), individuals would unanimously prefer regime I. If instead the costs exceed the risk premiums, individuals would unanimously prefer regime II.

[16] This inconsistency with nonutilitarian norms is formally equivalent to the inconsistency between ex ante and ex post evaluation that arises under such norms. See the further discussion below and note 31.

[17] A similar development arose after Arrow's impossibility theorem became established, in which a substantial body of literature attempted to find a way out. For normative purposes, it became clear that the result could be avoided by admitting interpersonal comparisons of utility; moreover, for judgments about equality—which are necessary, except from a libertarian perspective, when interests conflict—making such comparisons is appropriate. See Sen (1973). In the present context, as will become clear in the next section, the conflict between the Pareto principle and anti-utilitarian norms does not arise from excluding morally relevant information. Rather, when social welfare is initially permitted to be an arbitrary function of individuals' utilities and one adds requirements of rationality, equal weighting of individuals, and responsiveness to individuals' utilities (which implies the Pareto principle), Harsanyi has proved that a utilitarian norm necessarily follows.

[18] For example, Kaplow (1989) notes that examples used in the literature to motivate horizontal equity almost always involve increased inequality in the conventional sense or imposition of risk (or both); it is also shown that violations of horizontal equity and rank reversal norms are often symptomatic of other concerns. Most obviously, the horizontal equity norm draws much of its appeal from the legal norm of equal protection, which is specifically concerned with the problem that government institutions and processes may operate in an impermissible discriminatory manner. (See the discussion below.)

With regard to equality, it is often noted that utilitarianism does not entail a concern for equalization of utility levels. However, it is concerned with equalizing marginal utilities, which in simple cases favors complete equality in the absence of incentive effects and which may be significantly egalitarian in their presence, depending upon their strength, the degree of individuals' risk aversion, and other matters. Moreover, instincts about equality are most apparent in the cases of unequal income rather than unequal utility, for income is what we observe and is the basis for most reported measurements of inequality. Because individuals' utility functions are concave, equalizing income levels would increase total utility. It is thus useful to ask how confident one might be, based upon intuition, that utilitarianism is insufficiently egalitarian.

[19] The seminal papers are Harsanyi (1953, 1955); a useful restatement appears in Harsanyi (1977). Some important precursors and subsequent work are cited in note 8.

[20] Rawls (1971) and followers who accept the veil construct reject the utilitarian conclusion, usually for one of the following reasons: (1) Those in the original position do not know that the probabilities of being each person are $1/N$, and they may not be. However, why not set the probabilities this way and tell everyone in the original position? Any other probabilities would imply favoritism for some individuals over others. Also, as long as the probabilities of all persons in the original position becoming each actual person sum to one, which they must, reference can be made to a "pre-original position" in which individuals each have a $1/N$ probability of being any person in the original position; then utilitarianism would follow by Harsanyi's (1953) original argument. This can hardly be objectionable, because individuals behind the veil are supposed to agree unanimously. (2) Infinite risk aversion is assumed. However, the logic of the situation requires using the actual utility functions of individuals in society, which already entail particular risk preferences that are not plausibly infinite. (3) Rawls would use "primary goods" rather than utility. However, this has no logical nexus to maximizing the position of the worst-off individual. Indeed, the approach is like imputing an identical utility function to each individual, in which case utilitarianism would follow.

[21] Related indexes of inequality, such as the Gini coefficient, are unfounded if they can-

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not be shown to measure adherence to some normative principle and if any norm to which they might be relevant must be rejected because of its conflict with the Pareto principle. [The Gini coefficient is not an appropriate normative measure of inequality under any of the ordinary social welfare functions examined in the optimal income taxation literature, but Yitzhaki (1979) has shown that the index can be understood as a measure of a particular form of relative deprivation.] In addition, such generic measures of inequality are unnecessary if an explicit social welfare function, such as a utilitarian one, has been specified. See Atkinson (1970). For a survey and further analysis, see Lambert (1993).

22 See, *e.g.*, Harsanyi (1955, 1977). Hammond (1987) argues that one can incorporate greater egalitarianism by imposing different risk preferences on individuals (a view some have argued to be implicit in Rawls' approach). As he clearly indicates, this paternalistic approach conflicts with the Pareto principle as generally understood. It entails, for example, individuals would be forced to buy insurance that they properly understood as too expensive (given their correct views on the risks involved) or forbidden to pursue risky entrepreneurship (even when they accurately assess the consequences). Hammond does not suggest why such overriding of preferences is morally required.

23 To illustrate, Boskin and Sheshinski (1978) show that if individuals' utility depends substantially on their relative income (and in a particular manner, so that reducing average consumption increases everyone's utility), a utilitarian optimal income tax will be much more redistributive than otherwise. They argue, however, that policy should not be based on their results unless there is an empirical demonstration that individuals actually have such preferences. A possible response is that the moral philosophers deem a norm to be correct based upon their reflection and intuition; therefore, the "true" best interest of all individuals, if they are to be moral persons, involves having such a preference. And, because we believe in paternalism, we should impute this personal preference for our asserted norm, so the correct utilitarian position is to take the norm into account in making social decisions. Although one could argue this, some affirmative justification for the norm seems necessary, and the problem of avoiding criticism through circular argument that is described in the text to follow is present. Interestingly, one could generate the sort of anti-utilitarian norms discussed here—greater egalitarianism, avoiding unequal treatment and reversals in position—if one assumed that individuals were very envious, but envy is precisely the sort of preference that many are inclined to ignore even when individuals actually have such feelings.

24 For example, individuals who receive promotions do not share their pay raises with peers to whom they feel similarly situated. To be sure, some aspects of the income distribution may affect individuals' preferences. Thus, Gurr (1970) argues that "relative deprivation" is an important cause of social unrest and revolution. However, the empirical claims he makes concern the relationship between groups' well-being and their expectations, which may be influenced by gains of relevant reference groups, rather than the bare fact of unequal income.

25 See, *e.g.*, Harsanyi (1955, 1975).

26 The claim most discussed in social choice theory is Sen's (1970) "Paradox of a Paretian Liberal." I am unconvinced for reasons related to those given in Blau (1975), Farrell (1976), Gibbard (1974), and Ng (1971). Essentially, Sen postulates (1) that there are some matters (e.g., which books each individual reads) on which each individual's preferences should be socially decisive, no matter what; and (2) an example in which each individual cares more about what others read than about what he reads, and wishes policy to reflect this. Thus, his "liberals" (actually, "libertarians") *all* hold antiliberal preferences, hardly a persuasive setting in which to make libertarianism paramount. Relatedly, he ignores that the liberal notion of entitlements usually contemplates that entitlements may be voluntarily transferred. (The extreme example is labor: imposed slavery is prohibited, but individuals may sell labor.) Sen's (1976) defense suggests that he is paternalistic or believes that antilibertarian preferences (*e.g.*, regarding what others read) should be ignored. Alternatively, one might find his example appealing on rule-utilitarian grounds: we believe individuals usually do care mostly about their own reading, and we distrust a public censor who purports to be implementing citizens' wishes to the contrary. Each of these arguments are considered in the text.

27 Greater egalitarianism is made concrete by putting weight on disparities in welfare levels, which must then be assessed. Who is equal in the status quo or how one ranks

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for purposes of measuring reversals also requires such assessments. See, *e.g.*, Feldstein (1976). Particularly when taxpaying units vary—*e.g.*, married versus single, number of dependents—one must undertake some direct comparison of utility for distributive judgments to be possible. Also, utility rather than income must be considered if one is to provide meaningful measures for violations of equity. (For example, does inequality matter more, less, or the same amount among the rich? Is twice the inequality in treatment just as bad, twice as bad, or ten times worse?)

[28] See, *e.g.*, Harsanyi (1955, 1975, 1977), Sen (1979).

[29] It has often been suggested that utilitarianism imposes greater demands than a Rawlsian approach because it requires comparisons of units of utility rather than merely utility levels. See, *e.g.*, Arrow (1973). However, this view is largely mistaken, because cardinality of individual utility (implied by rational choice under uncertainty) and interpersonal comparability of utility levels together imply sufficient comparability of utility units for utilitarianism. See Ng (1984). (The converse is not true: the comparability of units required for utilitarianism does not entail the comparability of levels required for Rawlsian and other nonutilitarian approaches.)

[30] Diamond's (1967) influential criticism can be interpreted as raising this question. See the related discussions in Broome (1984), Deschamps and Gevers (1979), Harsanyi (1975), Myerson (1981), Ng (1981), Strotz (1958).

[31] The problem of identifying which regime is entitled to special status is extremely important for concerns about horizontal equity and rank reversals. For example, if regime II in the second example is the status quo, the move to regime I is inequitable due to rank reversals and involves no violation of horizontal equity (there are no ex ante equals—although if the individuals with incomes of 40 and 50 in regime II instead both have incomes of 45, returning to regime I would violate horizontal equity). Thus, the routine practice of applying such equity indexes to the status quo to analyze a pending reform is difficult to defend, particularly when many reforms involve the repeal of recent enactments. The status quo is also essential for egalitarians, as any nonlinear function of individual utilities can be shown to yield prescriptions that are dynamically inconsistent—that is, which depend upon the point in the policy-making sequence at which the evaluation is undertaken. See, *e.g.*, Hammond (1983).

[32] Diamond (1967) uses the language of "process," as do others, but the actual process concern is unstated. Indeed, in the contexts examined, the only process differences involved may be whether a result having a given probability arises from a single- or two-stage lottery, a matter unlikely to be of independent normative significance (although many authors imply that it is). For a discussion of some of the issues considered here, see Stiglitz (1982).

[33] Attention to unequal treatment of equals may be relevant in this context for the purposes of identifying how much inequality actually exists. The reason is that, as a matter of convenience, analysts often compare prereform and postreform (after-tax) incomes for individuals in, say, each decile of the income distribution. However, if there is unequal treatment of equals, the amount of inequality within deciles will not be constant. See Atkinson (1980). It also need not be constant even if there is equal treatment within deciles. For precise measures of overall equality, one simply needs micro-data rather than decile averages, but once such data is available, there is no need for a separate horizontal equity index.

[34] See Westen (1982).

[35] In principle, utilitarianism is capable of addressing these issues. See Kaplow (1996). The most difficult question for utilitarianism (and most other distributive principles) is the treatment of children, to the extent fertility is responsive to tax policy. (An increase in the population might raise total utility but reduce average utility, and there is much disagreement about which criterion is most compelling.)

[36] Related, individuals' perceptions of inequitable government action—even when not reflecting reality—may be a source of concern, as by breeding disrespect for the law. Rule utilitarians would account for this phenomenon.

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