

Why Taxes Need Not Treat Equals Equally

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Abstract: Horizontal equity is the principle that similarly situated persons should be treated similarly. While the principle is often invoked in tax policy debates, I demonstrate that the principle lacks a firm normative foundation. The paper presents a thought experiment to argue that neither an entitlement to pre-tax income, nor the presence of effort in generating pre-tax income, can provide the necessary foundation for such a principle. Then, I explore whether a concern for equal treatment and avoiding statistical discrimination can support horizontal equity even when there is no entitlement to pre-tax income. I show that tax discrimination can be objectionable, but because discrimination requires a relevant pre-tax benchmark, it follows that non-discrimination cannot support a general principle of horizontal equity without an entitlement to pre-tax income. In conclusion, despite the intuitive appeal of horizontal equity, I argue that its basis as a normative principle in tax policy is weak.

Keywords: equal treatment, horizontal equity, inequality, statistical discrimination, tax fairness

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1. INTRODUCTION

Why should the tax system treat women and men similarly? Is there any reasonable justification for why similarly situated persons should be treated the same or that persons earning a similar pre-tax income should receive similar post-tax income? These are the questions this article aims to answer.

My answer, in short, is that the most promising attempts at establishing a general justification for treating people who are similar before tax similarly, based on entitlements and effort, fail. I argue that they fail because both the right to one's pre-tax income and the relation between pre-tax income and effort are too weak to support such a principle. After refuting these attempts, I investigate whether principles of non-discrimination can provide a general justification for equal treatment in taxation.

However, non-discrimination must be evaluated against a relevant benchmark, which I argue that pre-tax situations cannot provide. The consequence is that similar treatment of similar pre-tax income should be of restricted importance rather than a general principle in tax policy.

One principle that supports treating similar pre-tax incomes similarly is *horizontal equity*. Horizontal equity can be expressed by the slogan '*equal treatment of the equally situated*'. Closely related is the classic conception of equality from Aristotle (Politics, 1282b) "[...] for persons that are equal the thing must be equal". What determines who are considered equal, whether it is with respect to income, welfare or other factors, is critical for what is meant by the principle. One formal definition of perfect horizontal equity in taxation is that the tax system should induce no changes in the ranks of people by income (or welfare) in the presence versus the absence of taxation. Hence, if one person earns more (or has higher welfare) than another before a tax, the person should also earn more (or have higher welfare) after the tax (Feldstein 1976). In contrast with many justifications in actual tax policy, modern economic theories of taxation typically ignore horizontal equity.

My arguments build on Murphy and Nagel (2002) and their fundamental challenge to entitlements to pre-tax income. They argue that one cannot have a right to one's pre-tax income, as ownership and property rights are decided by the social structures, in particular the law, which extends to the ownership of pre-tax income, and one is only granted ownership over the post-tax income. In what follows, I will, firstly, discuss and expand on Murphy and Nagel's arguments against horizontal equity. My aim is to establish under what conditions it follows from this lack of entitlement to pre-tax income to a rejection of the principle of horizontal equity in taxation. The main objective is therefore to fill in the gap between the rejection of an entitlement to pre-tax income and the rejection of horizontal equity. The challenge is that there are cases where horizontal equity is valuable, even when one rejects an entitlement to pre-tax income.

I present a thought experiment involving 'manna' falling on plots of land to argue that in a society organized by a redistributive state, effort is the factor that may give rise to a right to one's pre-tax income. However, effort and pre-tax income are only partially related, as there would be very little pre-tax income without the existence of the state, and taxation is thereby itself necessary for the pre-tax income one earns. To address this in the thought experiment, I introduce state production of manna. I then explore how this affects the plausibility of a principle of horizontal equity

and conclude that entitlements and exertion of effort cannot support such a principle.

After rejecting that one can establish a principle of horizontal equity from an entitlement to pre-tax income, I apply the concept *statistical discrimination*. This is done to investigate whether a concern for non-discrimination is more successful in establishing a case for such a principle. The lesson drawn is that there are forms of tax discrimination that can be objectionable, but that conflicting concerns for efficiency and inequality reduction typically override the concern for horizontal equity.

The article proceeds as follows. Firstly, I discuss conceptual issues for the principle of horizontal equity. Then, I examine the entitlement view and the relevance of effort, and I argue that they fail at establishing a principle of horizontal equity. I turn then to discrimination and equal treatment in tax policy, and I conclude that the principle of horizontal equity should have less prominence in tax policy than what is currently the case.

2. BACKGROUND ON HORIZONTAL EQUITY

2.1 THE CONCEPT OF HORIZONTAL EQUITY

In measuring horizontal equity, one can either rank individuals in terms of their resources, such as income, or in terms of their welfare, according to some utility function. When individuals are ranked according to income, it is still unclear whether it concerns a comparison between post-tax income and, either, 1: pre-tax income prior to taxes being subtracted from that specific income, 2: the pre-tax income that would have materialized if the tax was not imposed on this income (accounting for behavioural changes), 3: the pre-tax income that would have materialized in a minimal state or a society without redistributive taxation, or, 4: the pre-tax, or no-tax, income that would have materialized in a non-tax society. Some of those who oppose an entitlement to pre-tax income, such as Murphy and Nagel (2002), argue that post-tax income can only be compared to income in a non-tax society (pre-tax income in 4). Others, such as Weinzierl (2012) and Berg (2025), are more concerned with market income in present society (pre-tax income in either 1 or 2) and build on a position closer to the entitlement view. For Nozick (1974), the relevant comparison for post-tax incomes would be the income one would receive under a minimal state existing without violating a side-constraint against aggression (pre-tax income in 3).

2.2 HORIZONTAL EQUITY IN ECONOMICS

The canonical Mirrlees (1971) model of taxation is a model of asymmetric information, where the state maximizes a social welfare function which takes the form of a sum of concave transformations of individuals utility levels. Hence, the government is concerned with larger total income (a form of *efficiency*) and reducing inequality across individuals (*vertical equity*). In the model, persons differ in how productive they are, but the state can only observe their resulting income as a product of their productivity and labour supply. The state considers that the tax system can induce the more productive persons to *mimic* less productive behaviour, which is to reduce their labour supply and earn the same pre-tax income as less productive persons. The incentive to mimic is created by redistributive taxation, such that more productive persons could work less and end up with the same income as the less productive, and individuals prefer this because working less is assumed to increase an individual's utility for a given post-tax income level.¹

Because of the information asymmetry the government faces, the objective of the government is enhanced by violations of horizontal equity when there is information the state can employ, other than pre-tax income, that is correlated with persons' productive capacity. As horizontal equity concerns are not included in the standard model, applying the framework leads to recommending horizontal inequities whenever it is conducive to efficiency and vertical equity.² Applying this approach can lead to recommending considerable *tagging*, which consists in letting tax rates depend on characteristics, such as gender, birthplace, or age. If the characteristics contain information about the person's income, tagging will improve efficiency, as it can impose redistribution from the richer to the poorer without creating incentives to mimic. Any use of a tag will, however, violate horizontal equity in terms of pre-tax income.³

¹ Without lack of information about individual productive capacity, the state could equalize all incomes without any loss in efficiency. This would involve the state taxing according to each person's inherent productive capacity (or endowment), which some have argued is objectionable in itself and possibly in violation of a freedom of occupational choice, or lead to 'slavery of the talented' (Zelenak 2006).

² The original Mirrlees model did not include the use of non-income characteristics, and Akerlof (1978) extended the model to tagging.

³ It may also violate the protection of certain characteristics in the law, and a principle of horizontal equity may follow from a concern from protection of certain characteristics, see more on this in Section 4.3.

Person	Tax	Pre-tax income	Post-tax income	Responsiveness
Ann	£25	£45	£20	-50%
Ben	£25	£55	£30	-10%

Table 1: Initial distribution of tax, pre-tax and post-tax income

2.3 EXAMPLE OF THE CONFLICT BETWEEN HORIZONTAL EQUITY, EFFICIENCY, AND VERTICAL EQUITY

Table 1 presents an example of tagging which illustrates how horizontal equity can conflict with efficiency and inequality reduction. In this economy, there are two persons, Ann and Ben, and a tax burden of £50 needs to be shared between the two of them. Let us say that the initial position is one where Ann and Ben pay the same tax, but that Ben has a higher pre-tax income than Ann. The total pre-tax income in this two-person economy is, for now, £100. Let us also abstract from the welfare costs of work in this example, so that the (comparable) welfare levels of Ann and Ben are represented by their post-tax incomes.

This initial tax system respects (at least most forms of) horizontal equity, as the person with the higher pre-tax income also has the higher post-tax income. Crucially, Ann and Ben respond differently to changes in tax rates, indicated by their different tax responsiveness, which I here stipulate to be due to them having different flexibility in their working hours. This means that if one reduces their tax, they will differ in how much more pre-tax income they will generate by working more.⁴ Hence, as follows from the responsiveness rates, if Ann is taxed £10 more, her pre-tax income is reduced by £5, while if Ben is taxed £10 more, his pre-tax income is reduced by £1.

Now, the government implements a tax reform with tagging, by taxing women, such as Ann, less for similar pre-tax income.⁵ The reform consists of taxing Ann £5 less and Ben £5 more, with the result shown in Table 2.

⁴ They might work less as well, if the income effect dominates, resulting in a lower pre-tax income, but evidence does not point in that direction for most persons, see Meghir and Philips (2010) for a survey of the tax responsiveness of labour supply.

⁵ This also assumes that individuals do not change their gender in response to taxation.

Person	Tax	Pre-tax income	Post-tax income	Responsiveness
Ann	£25→£20	£45→£47.5	£20→£27.5	-50%
Ben	£25→£30	£55→£54.5	£30→£24.5	-10%

Table 2: Distribution of tax, pre-tax and post-tax income before and after the tax reform

By implementing such a reform, total pre-tax income has increased to £102. Ann is now better off than she was prior to the reform, while Ben is worse off. There is less vertical inequity, as the difference between Ann's and Ben's post-tax incomes is smaller. The worst off is also better off post-tax than prior to the reform, but the identity of the worst off has changed, and now Ben is the worst off. Can the tagging depicted in this example then be unfair or wrong? The reform has increased efficiency, by increasing total pre-tax and post-tax income, and reduced inequality, by reducing the distance in post-tax incomes, so how can the reform not be an improvement? One way in which it could be worse, is that it violates horizontal equity. The question is whether this form of equity can be provided a firm normative basis.

3. ENTITLEMENT, EFFORT, AND PRE-TAX INCOME

3.1 THE THOUGHT EXPERIMENT

The following thought experiment investigates the normative basis of equal tax treatment and assumes egalitarianism in some form, but the concern for equality may be limited by legitimate property rights. First, all persons live on one plot of land each, which are all at the same distance from the point where redistribution takes place, and the plots are equally valuable ex ante. For the moment, there is no state or government, persons can transfer the manna⁶ to the redistribution point without any costs, and there has been no previous consumption or saving. In addition, all the persons are equally good converters of manna into welfare (which sidesteps differences between welfare and resource theories of equality).

⁶ Manna is a reference to a form of food described in the Bible as provided by God and gathered from the ground.

Now, different amounts of manna fall from heaven on each person's plot. Do the persons that receive more manna than others in this state of nature, through no effort or choice of theirs, have an obligation to transfer part of their manna for redistribution? Libertarian entitlement theorists such as Nozick (1974) may answer that they do not, since one is entitled to whatever might fall on one's land, following a revised Lockean (Locke [1689] 1986) moral account of property rights. Contrary to Nozick, Cohen (1986) and left-libertarians such as Otsuka (2003, 11-40), provide an egalitarian account of property rights. While Nozick argues that self-ownership entails rights over property, Cohen and Otsuka deny that there needs to be such a direct relationship between the two.

Independently, the case for redistribution in a pre-state condition is not straightforward. On the one hand, it appears morally right to redistribute manna in such a case, as inequality is then reduced without a loss of efficiency, and it does not obviously violate anyone's rights to be obligated to transfer manna one has done nothing to deserve. On the other hand, the lack of government may imply that there are no moral obligations to reduce inequality. In either case, there is no reason to violate horizontal equity since redistribution is assumed to be costless.

3.2 INTRODUCING THE STATE

To make the thought-experiment relevant for actual tax policy, I introduce a redistributive state. I assume that the state itself is legitimate, but that the size of the state is decided by how much redistribution should take place. By introducing the state, redistribution can be enforced. Again, different amounts of manna fall from heaven on each person's plot, and the government knows the amount of manna each person receives. Can anyone legitimately complain against the state requiring everyone to transfer the manna for redistribution? It may appear not, since no person has done anything to receive the manna, and egalitarians therefore require redistribution of the manna. Let us then for the time being assume that no one has a right to the manna falling on his or her plot of land when there is a redistributive state, and no one has done anything to deserve the manna. Without any entitlement or desert, the state should thereby require each person to transfer some manna to the redistribution point, and the amount one must transfer depends on how much manna one received. There will be perfect horizontal equity, and there is no reason to violate horizontal equity, since how much manna is optimal in terms of efficiency

and vertical equity to require a person to send, depends solely on how much manna the person received.

Now, imagine instead that the persons live in different distances from the point of redistribution, that the manna depreciates (perishes) when it is transferred from larger distances, and, finally, that at what distance one lives from the point of redistribution is correlated with some observable characteristic of the persons, such as gender. The government still knows the amount of manna each person has, but, crucially, the distances from the redistribution point are unknown to the government, so that the characteristics contain useful information. In such a situation, the government would want to use the observable characteristics to determine how much manna each person should send to the redistribution point. Using characteristics improves efficiency, in that more manna can be demanded from those who live closer to the redistribution point. In addition, more redistribution can be achieved, since it is cheaper for the government to redistribute when the costs of sending manna to the redistribution point are reduced. Does this constitute an objectionable use of observable characteristics? Since no one has a right to their manna and the government uses characteristics to improve efficiency and reduce inequality, the claim to equal treatment is unconvincing.

3.3 EFFORT AND LUCK

A different support for a right to one's pre-tax income can come from placing moral value on people's exertion of effort. If one has a right to the income earned, before the deduction of taxes, one possibility is that it derives from choices and efforts in generating that income. Certain philosophers, such as Dworkin (2002), have been concerned with the role of luck and responsibility and argue that differences that are due to choices should not be considered as morally problematic.⁷ Effort can enter this account if effort is a choice made by the person, and not purely determined by other factors such as one's genetic composition. Let us assume that exerting effort is a choice one can hold someone responsible for. Then, if one person has a higher income or welfare due to having exerted more effort, this inequality is typically acceptable.⁸ Moreover, one can imagine a right to only the part of income that derives from effort.

⁷ These views are often labelled 'luck egalitarian', but Dworkin himself rejected this label.

⁸ While the right to pre-tax income may appear focused on the absolute level of income, luck egalitarians are primarily concerned with relative positions. However, a right to *higher* than other individuals' pre-tax income based on individual effort could also serve as a foundation for ensuring equal treatment in terms of pre-tax income. What is

So far, I have assumed no right to the manna that falls on one's land with the presence of a state. Now, instead of the manna simply falling directly on the plot of land, each person must exert some effort to gather the manna. In such a case, a claim to the manna that falls on one's plot of land cannot be equally outright dismissed. If the state suggested taking all the manna from some persons, they might object that they have exerted effort to gather the manna and that they have a right to enjoy some of the products of their labour.⁹ If the state announces it will take all the manna from them prior to exerting their efforts, they will simply not gather the manna, which is clearly inefficient.

The relevant question is whether the presence of effort affects how we view horizontal equity. When persons exert effort and the state exploits observable characteristics to discriminate between those who are closer and further away from the redistribution point, the use of these characteristics does seem more objectionable. The reason is not that the state should be prohibited from redistributing when effort is required to acquire the manna, but that an equal treatment of persons' efforts could also be a valuable objective, in addition to efficiency and reducing inequality.

Now, if effort is also unobservable for the government, the amount of manna a person has and the effort exerted may still be correlated. If the government uses an observable characteristic to differentiate persons, with the reason that it increases efficiency and reduces inequality, it fails to consider that the pre-redistribution amount of manna is correlated with a potentially morally relevant factor, namely effort.

From accounting for effort, what can be transferred to tax policy in actual societies? One reason to think that not much can be transferred is that, following Murphy and Nagel (2002), one's pre-tax income would be very different without the state. Contrary to entitlement theorists, Murphy and Nagel argue that convention and law establish property rights, and that taxation is a part of this convention. Hence, there are no extensive property rights or right to one's pre-tax income without the law. Their argument draws on Rawls ([1971] 1999, 273–277), who argued that individuals can only acquire claims to products by acting according to the

required for equal treatment is not that the absolute level of income can be explained by effort, but that if how much better off people are is determined by their effort, then it creates an argument for the redistribution mechanism to respect these differences and not impose reranking of individuals' positions.

⁹ This view may also be supported by a Lockean argument that mixing one's labour with a worldly resource (manna) creates a claim to the resource (Locke [1689] 1986).

social arrangements. The social arrangements are therefore prior to any deserts or entitlements, and persons can only have legitimate expectations to what they are entitled to according to the social arrangements.¹⁰ This argument also applies to the effort component of income, since it is also affected by the social arrangements.

In addition, Murphy and Nagel argue that pre-tax income is an artificial concept. Their argument is that to make sense of pre-tax income, one would have to imagine a world without taxes, and thereby without the state, with the consequence that pre-tax income would be very low for most people. They claim that this shows that one's pre-tax income is an artifact. Since the state relies on taxation, and the pre-tax income would not exist without the state, one cannot evaluate each person's pre-tax income in isolation. Considering this argument, I alter the manna analogy by introducing state production.

3.4 STATE PRODUCTION OF MANNA

Instead of manna simply falling from heaven on each person's plot, the state is involved in producing the manna, for example by using some of the manna transferred to it to secure future falls of manna. Then, without manna being transferred to the point of redistribution, there would be very little or no manna falling on any person's plot of land. How does this affect the right to manna and horizontal equity? One problem, which may only be practical, is that it is hard or impossible to disentangle the contribution from effort for each person, the contribution of luck for the amount of manna that falls on that particular plot, and the contribution of the state production of manna. This entails a weaker right to the manna, and for sufficiently important state production, an entitlement to pre-redistribution manna appears implausible. The reason is that the consequences of the choice to exert effort is mainly dependent on factors which the individual is not responsible for (See Michael 1997 and Tungodden 2005 for more on how taxes can respect responsibility). Still, effort could be relevant. It does seem objectionable to confiscate all the manna a person has received when the person has exerted effort to gather the manna, possibly because the effort generates desert, even when the falling of the manna depends on luck and the existence of the state.

¹⁰ Certain proponents of luck egalitarians have themselves opposed market incomes as the basis for comparisons across individuals as they may be unjust (Cohen 2009). Such arguments lend support to the claim that rights to pre-tax income cannot be generated from a concern for differences in effort.

Hence, I conclude here that as far as pre-tax income is correlated with effort, it can give rise to a minimal right to one's pre-tax income. The minimal right can for example include that exerting more effort should yield more manna when considering each person separately. However, the minimal right does not entail much, as the state plausibly also has a right to require transferring of manna when it is involved in the production of manna. If effort is completely observable, the state might be able to disentangle what part of the manna is due to either luck and state production or effort. Even if we accept that effort gives rise to desert, this will not give a right to the initial amount of manna, but only to the part of the manna that is due to effort. In the analogy with pre-tax income, one can therefore not establish a right to the total pre-tax income this way, and the state should rather consider how the persons' effort affects the amount of manna they have.¹¹

Furthermore, it is more realistic to stipulate effort to be unobservable for the government. When there is state production of manna and unobserved effort, the case for horizontal equity is even weaker. It is implausible that the minimal right to one's pre-tax income derived from the correlation with effort should require the state to treat those who have the same pre-tax income in the same way (unless the correlation is very strong, which is implausible). The reason is that even treating two equal pre-tax incomes equally might not respect equal treatment in a morally relevant way, since they could have expended different amounts of effort and still end up with the same pre-tax income. In other words, a mere relation between pre-tax income and effort is not sufficient to establish a principle of treating similar pre-tax incomes similarly.

Table 3 summarizes the different cases in the thought experiment, and the conclusions drawn for the right to pre-tax income and the principle of horizontal equity.

¹¹ Roemer (1993) presents an approach to distinguish the relevance of effort and circumstance in determining differences in income. However, since the approach relies on comparisons across individuals, the approach does not solve the issue in determining for each individual how much of their income is reflects their effort. To rely on *average* differences across individuals may be sensible when considering policies that consider the average claim of a group, such as when one considers redistribution from the rich to the poor. It is however not convincing that such average differences produce individual rights to a certain level of income.

Factors and principles	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Legitimate state	No	Yes	Yes	Yes	Yes	Yes
Unobserved distance	No	No	Yes	Yes	Yes	Yes
Effort exerted	No	No	No	Yes	Yes	Yes
State production	No	No	No	No	Yes	Yes
Unobserved effort	No	No	No	No	No	Yes
Right to pre-tax income	Maybe	No	No	Only to effort part	Only to effort part	Weak
Horizontal equity	Maybe	Yes	No	Only in effort part	Only in effort part	No

Table 3: Cases in the manna thought experiment

4. DISCRIMINATION AND EQUAL TREATMENT

While an entitlement to pre-tax income is initially compelling, I argued in the preceding section that it ultimately fails to support a principle of horizontal equity. Then, can there be any other reasons for why horizontal equity has intuitive appeal? In fact, Atkinson (1980) argued that there is a third position on horizontal equity, in addition to the entitlement view and end-result principles (such as utilitarianism). He describes this position as being concerned with how one achieves outcomes, and therefore “guards against unjust discrimination” (Atkinson 1980, 4). In the following, I investigate whether a successful case for horizontal equity can be established by considering discrimination and equal treatment. The reason for turning to these theories is that they may appear as unrelated argument to the ones in the preceding section, but the objective is to establish that also these theories large rely on implicit assumptions about rights to pre-tax income.

4.1 STATISTICAL DISCRIMINATION

Imagine that the government introduces racial tagging in the tax system, so that it reduces tax rates for one racial group, while it raises taxes for all other racial groups. The government's motivation for this policy is that for similar pre-tax income, one racial group is poorer than other groups. Most people will probably dismiss such a policy as discriminatory. However, if one has no right to the pre-tax income, how can such a policy be objectionable?

One way in which such a policy can be objectionable is that it uses statistical information to discriminate between groups and is a form of *statistical discrimination*. Hence, one objectionable feature might be that persons are not *treated as individuals*, but rather as members of racial groups, which is objectionable. Here, treated as individuals simply means that the treatment is based on information of each person, rather than information based on group membership. The question is then whether persons have a right to be treated as individuals, and whether this can override the efficiency gains from discrimination. In fact, Lippert-Rasmussen (2007) argues that an unbiased use of statistical discrimination is usually permissible. His argument is that if people have a right to be treated on the basis of the individual properties they in fact possess, it can sometimes be more appropriate to treat them on the basis of statistical information about a group they are a member of, rather than what is thought about that person in particular. For tax law, it is obviously impossible to treat people on an individual basis, and the question is rather whether one should be treated on the properties it is likely that one has, or not.

A second objection to statistical discrimination discussed by Lippert-Rasmussen is that such discrimination involves *unequal treatment* of people, which is objectionable. The answer provided by Lippert-Rasmussen is that unequal treatment is not itself problematic, and that treating people as equals sometimes requires us to treat people unequally. This appears reasonable, and for tax policy, it could entail a reason for focusing on equality of opportunity rather than horizontal equity, since the unequal treatment of similar pre-tax income can improve the relative prospects of a disadvantaged group.¹² Interestingly, Lippert-Rasmussen also mentions tax policy as an example of where a reduction in the prospects of a group compared to other groups would not be rejected simply because it involves unequal treatment. Therefore, it need not matter as such

¹² By increasing efficiency, and thereby affecting the trade-off between efficiency and equality of opportunity in the direction of more equality of opportunity.

that one group is disadvantaged by a tax policy, but it must be evaluated in a wider sense of equality than the tax change in isolation.

I agree with Lippert-Rasmussen that statistical discrimination is not inherently wrong. However, a more forceful objection to certain kinds of statistical discrimination is that it can further disfavour already disadvantaged groups. If there is a background of injustice, it is problematic if the characteristics used are related to disadvantaged groups and they are further disfavoured by the tax discrimination. As an example, say that men respond more to tax changes than women for the same pre-tax income. There is then a reason to introduce lower tax rates for men than women. Yet, as there is a history of unfair treatment of women, this type of tax discrimination appears to be wrong, since it further disfavours women. The policy still seems wrong even when such tax discrimination benefits the lowest earning women, by increasing the amount of efficiency, so that the government will trade it off against more vertical equity, to the benefit of low earners. At least, such a discriminatory policy must face a higher threshold to be implemented than if the tax discrimination was to the benefit of the unfairly treated group. If the benefit was for the unfairly treated group, and the statistical discrimination made the lowest earners better off, then the objection does not apply and a different argument for avoiding statistical discrimination is required.

A different, but related, objection to statistical discrimination can be advanced against the use of socially salient characteristics that reduces the social status or respect of the group in question. One example of this could be a reduction in tax rates for people that a societal norm judges to be unattractive, with the rationale that they have a lower earning potential. While this would be to the benefit of a presumably disadvantaged group, the discrimination itself could harm the group by reducing their perceived status further, as the discrimination policy has a high degree of social salience.

While these two objections are forceful against the use of discrimination based on observable characteristics in the tax system, they cannot establish a general prohibition against tax discrimination or violations of horizontal equity, since not all uses of observable characteristics are of these types. In addition, when there is a background of injustice, a more effective government policy could be to address these injustices directly, for example by anti-discrimination law, instead of prohibiting the efficient use of tags in the tax system. Without any background injustices, it is hard to see why there should be a strict prohibition against the use of

tags, since unless we are strict egalitarians and value only equality of some form, it is implausible that there cannot be any overriding efficiency concerns in favour of unequal treatment. While the equality of some factors can be prior, or above, efficiency trade-offs, for example following Rawls' (1971) lexical priority of basic liberties, it is implausible that the equal treatment by the tax system of the arbitrary amount of pre-tax income should be given such a status.

An important example of widespread statistical discrimination is from underwriting in the insurance sector, where there is a practice of risk classification, so that, for example, young men pay more for their car insurance than do other groups because of the on average higher probability of accidents occurring within this group. In discussions on underwriting, one important principle is *actuarial fairness*, which is that each person should pay insurance premiums according to the expected cost of compensating that person. Heath (2014) argues that it does not follow that it is the most sensible policy to restrict the underwriting practices of private insurance companies. Instead, this seems to be a case for more public health insurance. Heath also argues in favour of actuarial fairness within insurance, by pointing out that insurance needs are not very different from other kinds of goods, which we would not impose the same kinds of restrictions on. Still, Heath also argues that other important social objectives can override the presumption of actuarial fairness.

Statistical discrimination within insurance is relevant to tax policy since it concerns the fairness in creating efficient incentives. One objection to its relevance to tax policy, however, is that actuarial fairness is developed predominantly to apply to behaviour in the private sector, and we may want to impose stricter standards of fair treatment for public policy. I agree with this objection, and government policy should often counter unfair inequalities that arise in markets. Still, this does not establish that the use of statistical discrimination in tax policy is itself wrong, but rather that it must be evaluated within the overall normative objectives of the government, which most plausibly include efficiency. If we allow markets to operate to create incentives for efficiency, even though they also create unfair inequalities, then by the same argument, we should also allow the creation of incentives from public policies, even when they also create inequalities. In any case, a reasonable restriction on the creation of incentives from public policies could be that they should not in total exaggerate inequalities already created in the market, as it would defeat part of the purpose of public policies in the first place. For tax

policy, since it is typically an efficient means of redistribution, this restriction would imply that the overall tax system should not increase (overall) inequalities already created in the market, but quite the contrary, reduce them. What tax policy still might do is to create inequities that are conducive to reducing inequalities created in the market, for example by allowing violations of horizontal equity to increase efficiency, and thereby increase the redistribution to the worst off.

The argument is then that the market can produce inequities, that tax policy can both address these inequities and create new inequities, and that inequities are equally bad whether they derive from the market or public policy. The proposed conclusion is that tax policy should address market inequities even when it entails that the tax policy itself creates a lesser inequity. The crucial premise is that inequities of equal size created by public policy or in the market are equally bad, which could be disputed. However, if property rights are created by the state, it appears irrelevant to distinguish between inequities created by the market and by state policy, since both fundamentally derive from the state's allocation of property rights.

Another example of statistical discrimination is differentiated prices for different groups of buyers. Moriarty (2016) presents an analogy between unequal pay for equal work and price discrimination to argue that not all forms of unequal pay for equal work are wrong. This is interesting for tax policy, since price discrimination is similar to differences in commodity taxes and unequal pay for equal work is similar to unequal taxes on equal incomes. The latter is similar since if there is equal pay for equal work but different taxes on equal incomes, there will be differences in *after-tax pay* for equal work. The analogy may therefore also serve the purpose of rejecting horizontal equity in tax policy. Moriarty argues that price discrimination is not intrinsically wrong because firstly, it can, improve welfare, and, secondly, there is a presumption of freedom in markets. For commodity taxes, the latter cannot be applied since commodity taxation is a public policy, but still, differentiated commodity taxes may improve welfare to the extent consumption patterns are efficient tags. However, the central argument for Moriarty is that price discrimination is wrong when it is deceptive. When people reasonably expect that there is no price discrimination, Moriarty argues that it is deceptive, and therefore wrong, to price discriminate. Again, applied to commodity taxes, it does seem reasonable to require that the extent of differentiated commodity taxes is publicly available knowledge. Let us then assume that imposing

differentiated commodity taxation does not violate fairness. Can we by analogy say that imposing unequal taxes on equal incomes does not violate fairness? Moriarty argues that price discrimination and unequal pay for equal work are structurally similar, as consumption spending on goods and income earning is two sides of the same coin. It therefore follows that when one is not unfair, the other is also not unfair. I agree with Moriarty and extend his argument. By viewing tax policy as the public policy equivalent of pay and price, the inference from differentiated commodity taxation not being unfair to unequal tax on equal incomes not being unfair is reasonable. What is required for the extension of Moriarty's argument is to accept the earlier argument that injustices created by the state and in the market are not fundamentally different.¹³

Returning to Lippert-Rasmussen (2007), a third objection to statistical discrimination he discusses, in addition to using statistical information to discriminate and imposing unequal treatment, is that it is unfair to treat people based on what others do. He rejects this objection by presenting an example where some subgroup of a group, A, makes another group, B, much worse off by their actions, and the only way to hinder this is to restrict the behaviour of all members of group A. Even if the innocents in group A are uncompensated, Lippert-Rasmussen argues that it is not unfair to impose this restriction on them. In tax policy, we can imagine that half of all men respond very little to tax changes, while the rest respond as much as women do. Then, if tax rates increase for all men, an uncompensated burden is imposed on the more responsive men. Lippert-Rasmussen's argument does not seem equally strong in the taxation case, but if one does not have a right to one's pre-tax income, it is unclear whether this treatment is unfair to begin with. However, if unequal tax treatment need not be unfair, then the issue is not really that the "innocents" are grouped together with the "guilty", but rather whether there are grounds for unequal treatment in the first place. To investigate this point, I turn to Nozick and equal treatment in taxation.

¹³ Imagine that women prefer a good that is more highly taxed than other goods. Assume also that the reason for differential taxation is that individuals that prefer the higher taxed good would buy almost as much of it independently of the tax, such that taxing this good is relatively more efficient than taxing some other good. As long as social preferences allow for some trade-off between equity and efficiency, this differential taxation may be justified, even across otherwise equal individuals, whereas it would not be justified if there is no social benefit from this differential taxation.

4.2 EQUAL TREATMENT AND CONCEPTIONS OF THE GOOD

In contrast with basing horizontal equity on non-discrimination between groups, I now present an objection to basing tax rates on responsiveness in general. Imagine that the government knows exactly how each person responds to tax changes for each level of pre-tax income. Would it be permissible for the government to exploit this information in designing the tax system? This question differs from the one in the preceding section, because now the government can base the tax rate on factors that are correct of the person, and not just on statistical or group level information. If this is objectionable, it then shows that group discrimination is not the main issue, but rather that there is an independent objection to taxation according to responsiveness.

The objection considered is that persons are treated unfairly if their tax rates depend on their responsiveness, and that they are treated differently depending on their conception of the good, which appears to be objectionable. By drawing on Nozick (1974, 170), I construct an objection to my argument based on his argument that it is wrong to treat a person who prefers consumption, and therefore works more, differently from a person who prefers leisure. I answer this equal treatment challenge by a new thought experiment, where I now consider welfare rather than income, to account for the choice between work and leisure. Horizontal equity is therefore now defined according to a ranking of welfare levels.

Let us say that there are two persons who can choose their working hours, and thereby their level of consumption and leisure. One of them has a stronger preference for leisure relative to consumption, while the other prefers consumption more, and the persons may therefore respond differently to tax changes. This is because a tax increase is an increase in the price of consumption relative to leisure, such that those with stronger preferences for leisure may reduce their working hours more than those with stronger preferences for consumption. Let us also assume that the two persons have the same welfare level before taxation, but that the person who prefers consumption has more consumption and less leisure than the person who prefers leisure. The person who prefers consumption more will then typically respond less to tax changes and is therefore taxed more if tax rates depend on responsiveness.¹⁴

¹⁴ This is most clearly seen from the extreme case where the person who prefers consumption does not value leisure at all and will therefore not respond by changing working hours to tax changes, while the person who has a stronger preference for leisure might opt for mostly leisure if the tax rate is high.

Initially, the different tax treatment might strike one as unfair, as the persons are treated differently based on their different conceptions of the good. To avoid this unfair treatment, the state could force the person who prefers leisure to work more to, for example, equalize their loss in welfare due to taxation (imposing an equal sacrifice). However, this is clearly objectionable, as we cannot accept forced labour (Otsuka 2008). Nozick (1974, 170) exploits the fact that most people are not willing not impose forced labour on the person who prefers leisure to argue that taxation treats those who prefer consumption wrongly. Instead of discussing whether this is a wrongful treatment, it is more important here whether a concern for treating different conceptions of the good similarly can establish a reason for valuing horizontal equity. If the equal treatment is a concern, one may plausibly place some value on the extent to which there is dissimilar treatment of the two persons. There is still reason to value efficiency and vertical equity, but if the unfair treatment is a concern, it means that less efficiency and redistribution is optimal, as any taxation of labour income involves a departure from equal treatment of the two persons. This entails that one should balance efficiency and vertical equity against horizontal equity.

One answer to the objection is that the concern for equal treatment relies on the welfare levels in a world without taxation having independent importance. In a similar way as in the thought experiment in Section 3.3, without taxation of those who prefer consumption, everyone's welfare levels would be significantly lower. Hence, these non-tax welfare levels are either close to zero or irrelevant to the choice of tax policy when there is a state. Hence, even though the treatment of those who prefer consumption might in one sense be unfair, it is defeated by the fact that it enables the state to function, which benefits everyone sufficiently to override any concern for the equal treatment of different conceptions of the good. This is a stylized version of Murphy and Nagel's second main argument against an entitlement to pre-tax income. Building on this, I argue the following to fill in the gap between pre-tax income and horizontal equity: Equal treatment of different conceptions of the good is valuable, but non-tax welfare levels are mostly irrelevant. Therefore, equal treatment of different conceptions of the good is not required when the comparison is a non-tax world.

Hence, even though equal treatment is important, it is irrelevant in the thought experiment presented above since the comparison of post-tax welfare is to welfare in a non-tax world. One could still object that the

comparison with a non-tax world is unnecessary. Firstly, one could follow Nozick and argue that the benchmark should be a world where there are no violations of side-constraints, and therefore a minimal state. Secondly, one could argue that the income or welfare one earns in the market has a special standing as a comparison benchmark. Both are, however, problematic. The Nozickean benchmark is refuted if there is no right to pre-tax income, since a more extensive state would then not violate side-constraints. It would be an impractical benchmark for defenders of horizontal equity concerns, since all comparisons of equal treatment would rely on what persons would earn under a minimal state. These counterfactual incomes may not even exist. Against the second benchmark, one can follow Murphy and Nagel and argue that the state decides ownership structures by the law. Since this includes the functioning of the market, it cannot have a special status as the market also depends on state policies and the allocation of ownership rights.

In conclusion, a principle of equal treatment cannot establish a sufficient case for horizontal equity in taxation because there is no plausible comparison benchmark with a special standing to evaluate the treatment against. This has the consequence that an equal treatment of pre-tax incomes or welfare is mostly unnecessary, and a general principle of horizontal equity cannot be supported.

5. CONCLUSION AND IMPLICATIONS FOR TAX POLICY

In this article, I have considered two types of attempts at justifying a principle of horizontal equity. The first, based on a right to pre-tax income, fails, because the right one plausibly can have to pre-tax income is too weak to entail horizontal equity. The second attempt was constructed from a principle of non-discrimination. Although more successful in supporting horizontal equity than a right to pre-tax income, non-discrimination cannot establish a general principle of horizontal equity. Instead, I argued that the force of the discrimination objection to violations of horizontal equity depends on a background of injustice, and as long as disadvantaged groups are not further disfavoured by horizontal inequities, non-discrimination does not imply horizontal equity. Hence, I reject a general precedent to similar treatment of persons who are similarly situated prior to taxation. A more general implication suggested by this result is that some right to the current situation must be established for equal treatment to be justified when there are efficiency gains from violating equality of treatment.

The implications of what has been defended here is that tagging according to observable characteristics, such as gender or age, should not be outright dismissed as a policy in the tax system, in contrast with current practice. However, the benefits in terms of efficiency and vertical equity must be weighed against costly changes to behaviour, administrative costs, and the extent to which disadvantaged individuals are further disfavoured.

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