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Queen's Economics Department Working Paper No. 1210

# Why the Legal System is Not Necessarily Less Efficient than the Income Tax In Redistributing Income

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# Why the Legal System is Not Necessarily Less Efficient than the Income Tax In Redistributing Income

Dan Usher  
September 1, 2009

**Abstract:** A common, though by no means universally-accepted doctrine among practitioners of law and economics is that redistribution is no business of the law. This *efficiency-only* doctrine is not that redistribution is unworthy as a social objective, but that any given benefit to the poor is attainable at a lower cost to the rich through taxation than through the choice of legal rules. The rationale for the efficiency-only doctrine is that redistributive law creates a *double distortion*: an initial distortion arising from redistribution *pre se*, through taxation or through law, and an additional distortion all its own. The efficiency-only doctrine is sometimes valid, but is far narrower than its advocates would seem to suggest, and is inapplicable to most of what is commonly thought of as redistributive law. Redistribution is best supplied by a balance of law and taxation.

“Redistribution is accomplished more efficiently through the income tax than through the use of legal rules, even when redistributive taxes distort behaviour ...it is appropriate for economic analysis of legal rules to focus on efficiency and to ignore the distribution of income in offering normative judgments.”

Louis Kaplow and Steven Shavell, “Why the Legal System is Less Efficient than the Income Tax in Redistributing Income”, *Journal of Legal Studies*, 1994, page 677.

“There is every reason to help the poor man who happens to be a farmer, not because he is a farmer but because he is poor. The program” (a negative income tax) “should be designed to help people as people not as members of particular occupational groups or age groups or wage-rate groups or labor organizations or industries.”

Milton Friedman, *Capitalism and Freedom*, (1982 edition, page 191)

“For these reasons and more, economists who favour redistribution and economists who oppose it can agree that property law is usually the wrong way to pursue distributive justice. Unfortunately, these facts are not appreciated by many lawyers who have not studied economics.”

Robert Cooter and Thomas Ulen, *Law and Economics*, (fifth edition, 2008, page 113)

There is a doctrine within the discipline of law and economics that laws should be chosen for efficiency alone, leaving all redistribution to the tax system instead. The doctrine is not that redistribution itself is an unworthy objective of public policy, but that the consequences of redistributive but inefficient law are worse for everybody than the available alternatives.

The rationale for the *efficiency-only* doctrine is similar to Milton Friedman’s rationale for the negative income tax. As developed by Kaplow and Shavell, it is that an additional dollar’s worth of benefit to the poor can be provided at a lower cost to the rich through a negative income tax than by a switch from law A to law B where i) the laws have a common purpose, ii) law A is relatively efficient in that the common purpose is attained at a lower total cost to everybody concerned, and iii) law B is relatively redistributive in that it makes poor people better off and rich people worse off than they would be under law A. The efficiency-only doctrine selects law A, leaving redistribution to the tax system.

Law A might be the present system of parking fines that are the same for everybody, rich or poor, while law B might be a system of income-contingent parking fines, with higher fines on the rich than on the poor for one and the same offense. Law B is relatively redistributive and would be inefficient as well if it yielded less revenue, were more expensive to administer or were less likely to deter harmful parking violations. Suppose, all things considered, law A imposed a cost of 10 on everybody, while law B imposed a cost of 5 on the poor together with a cost of 25

on the rich. If so, then a switch from law A to law B yields a gain of 5 to the poor at a cost of 15 to the rich, generating redistribution at a “price” of \$3 to the rich per dollar acquired by the poor. Redistribution obtained on these terms is, by definition, inefficient if it could be obtained at a lower price by an increase in the rate of a negative income tax or in some other way. Comparison of “prices” of different modes of redistribution will be central to our analysis of the efficiency-only doctrine.

There is a simple case where the efficiency-only doctrine must surely be correct. It must be correct if there is no deadweight loss in taxation because, in that case, an increase in the rate of a negative income tax generates a one-to-one transfer of income from rich to poor. The resulting price of income to the poor cannot be other than 1, and law B, with its implicit price of 3, would be needlessly costly.

The comparison is less clear-cut when deadweight loss in taxation interposes a gap between the full cost of taxation to the tax payer and the revenue acquired by the government for redistribution or for any other public purpose. Deadweight loss automatically raises the price of additional income to the poor from 1, when the tax rate is 0, all the way to infinity at the top of the Laffer curve. Under these circumstances, one might suppose there to be a balance between redistributive law and redistributive taxation at the point where their prices of income to the poor are the same. It is claimed here that this is in fact so, but to make the case it is necessary to breach a second line of defense of the efficiency-only doctrine: that redistributive but relatively inefficient law contains a *double distortion*, that it necessarily inherits the full distortion in redistributive taxation and adds an extra distortion all its own.

The double distortion argument - the basis for Kaplow and Shavell’s support for the efficiency-only doctrine in the quotation at the front of this paper - is exemplified by income contingent parking fines. The higher fine paid by the rich under a system of income-contingent parking fines is like a rise in the income tax rate, generating the same extra deadweight loss as would be generated if the tax rate itself rose instead.. That is the first distortion. In addition, income-contingent parking fines would be costly to administer and would induce inefficient patterns of parking violations. That is the second distortion. Redistributive taxation is unambiguously superior to redistributive law in so far as both generate the first distortion equally, but only the latter generates the second,

The claim here is not that the double distortion argument is invariably wrong, but that it is only valid for a narrow range of redistributive legal rules and is invalid for most of what proponents of redistributive legal rules would seem to have in mind. Redistributive legal rules can be classified as conforming to one of three distinct patterns

- a supplementary but relatively inefficient negative income tax.
- a costly transfer of a fixed amount of post tax income from rich to poor.

- a reassignment of gross income or of strands of property rights.

The claim here is that the double distortion argument is only valid for the first item on the list, and is invalid for the second and third items which together represent most of what is commonly thought of as redistributive legal rules.

Justification of this claim is straightforward once the required analytical machinery is in place. A distribution of income is specified. There is a list of redistributive legal rules. Two meanings of efficiency are distinguished. Deadweight loss is modeled as the consequence of tax evasion. Then the three patterns of redistributive legal rules are specified in detail and the relevance of the double distortion argument is determined in each case. The paper finishes with a discussion of implicit and explicit assumptions: the contrast between tax evasion and the labour-leisure trade off as sources of deadweight loss, the treatment of personal goods, the negative income tax, and haphazardness in law and in taxation.

### **The Scope of Redistributive Law**

The interesting question about the “efficiency-only” doctrine in the quotation from Kaplow and Shavell<sup>1</sup> above is not whether it is right or wrong, but what exactly it is right, or wrong, about. Consider the following legal rules, all of which might be thought of as redistributive:

- Parking fines are levied in proportion to the income of the person who parks illegally.
- Parking fines are levied in proportion to the cost of the illegally parked vehicle .
- Setting damages higher when the injurer is wealthy and lower when the injurer is poor<sup>2</sup>
- Industrial accidents are the responsibility of the employer even when an accident is caused by the negligence of employees.
- No-fault insurance.
- Everybody, rich or poor, is entitled to sleep on park benches.

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<sup>1</sup>Kaplow and Shavell (1994, 667) state that “For the purposes of this article, the term “legal rules” refers to rules other than those that define the income tax and the welfare system”. I think that definition would place the entire list of rules at the beginning of this paper under the heading of legal rules. By contrast, Milton Friedman proposed the negative income tax as an alternative not to redistributive legal rules, but to the welfare system.

<sup>2</sup>This is Kaplow and Shavell’s principal example.

- Workers must not be paid less than some minimum wage.
- Workers may form a union.
- Land reform, expropriating large estates and reassigning the land in small plots to new peasant-owners.

Assume for the sake of the argument that all of these rules are inefficient in the sense that the adoption of each rule would cause the national income to be less than if the rule were not adopted. On that assumption, the quotation from Kaplow and Shavell would seem to imply that none of these rules should be adopted because whatever redistribution they provide can be provided more efficiently through the tax system. The implication is that, starting from a situation where any of these rules is in force, the rich and the poor can both be made better off by abolishing the rule and increasing redistribution through the tax system instead.

## **The Distribution of Income**

We have so far spoken above of rich and poor without specifying what is meant by rich and poor in the context of an entire distribution of income. Following in the steps of Kaplow and Shavell, we shall assume from here on that, with law A in force, there is a fixed, uniform distribution of gross (pre-tax, pre-transfer) income,  $Y^0$ , from a minimum of  $Y_p^0$  to a maximum of  $Y_R^0$ . In numerical examples, it will be supposed that

$$Y_p^0 = 0 \quad \text{and} \quad Y_R^0 = 100 \quad (1)$$

Corresponding to any gross income,  $Y^0$ , there is a net (post-tax, post-transfer) incomes,  $Y$ , transformed from  $Y^0$  by income taxation and/or a switch from law A to law B (where law B is relatively redistributive but relatively inefficient). The income of the poorest person goes from  $Y_p^0$  to  $Y_p$ , and the income of the richest person goes from  $Y_R^0$  to  $Y_R$ . How  $Y$ ,  $Y_p$  and  $Y_R$  are derived will be discussed below.

This imposed uniform distribution of income has two advantages here: The first is that discussion of the effects of laws or taxes may concentrate upon the top and the bottom incomes,  $Y_p$  and  $Y_R$ , because all other incomes change smoothly in between. The second is that the demogrant of a negative income tax is a function of the sum of top and bottom incomes rather than of some complex property of the distribution of income as a whole.

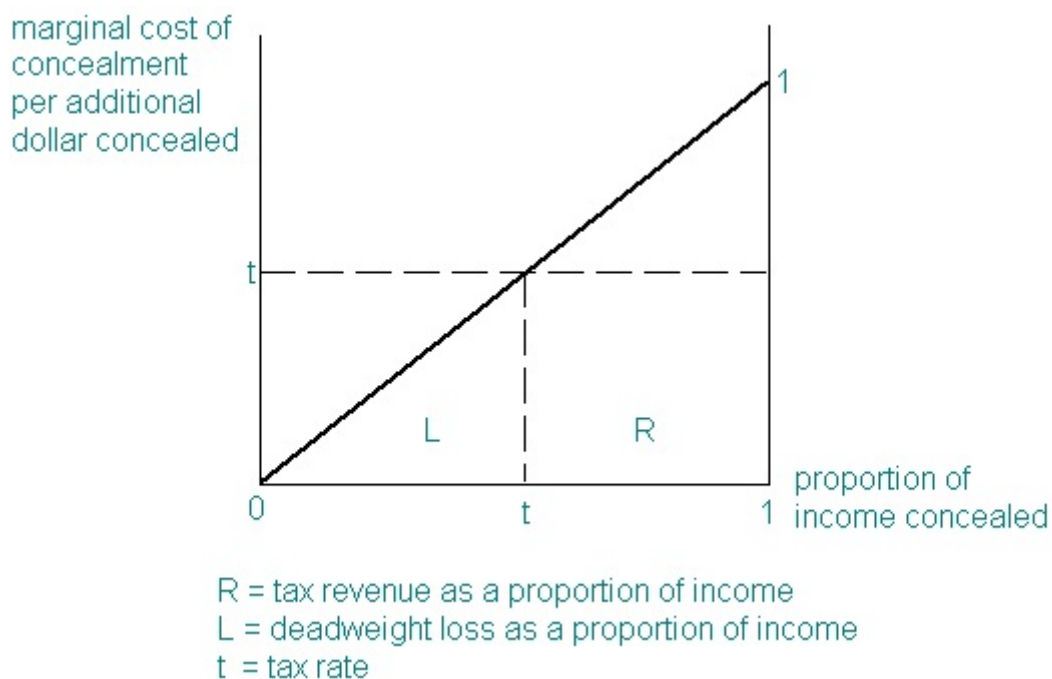
## **Tax Evasion as the Source of Deadweight Loss**

It is customary in public finance to portray the waste of resources in taxation, the deadweight loss, as originating from the tax-induced distortion of the labour-leisure choice. A

different procedure is to be followed here. Deadweight loss is deemed to arise from tax evasion instead. There are several reasons for this choice: Deadweight loss arising from tax evasion has some properties in common with deadweight loss arising from distortions in the labour-leisure choice, but there are some differences too, and these have a bearing on the relative merits of legal rules and taxation for the redistribution of income. The mechanics of deadweight loss from tax evasion is very much simpler than the mechanics of the labour-leisure choice. Propositions that may be hard to derive when deadweight loss originates from the labour-leisure choice pop out easily when deadweight loss originates from tax evasion. Most importantly perhaps, the derivation of deadweight loss without reference to the labour-leisure choice is the strongest way of countering the presumption in much of the literature of public finance that no other source is important or sufficient in itself. There is no reason to suppose that deadweight loss from tax evasion is the less important of the two.

The full social cost of tax evasion includes the cost to the taxpayer of concealing income, the cost to the government of detecting and punishing tax evasion, and the cost to tax evaders unlucky enough to be detected and punished. To focus upon deadweight loss and for simplicity of exposition, tax evasion is treated here as costly to the tax evader but undetectable. Think of the tax payer as hiding money underground where the tax collector cannot find it. The deadweight loss is the social cost of hiding income from the tax collector, the difference between the loss of public revenue from tax evasion and the corresponding gain to the tax evader himself.

**Figure 1: The Marginal Cost of Concealing Income from the Tax Collector.**





The key assumption in modeling deadweight loss from tax evasion is that the marginal cost of concealing an extra dollar of income from the tax collector is an increasing function of the amount of tax already concealed. Specifically, the assumption is that, regardless of whether a person's pre-tax, pre-transfer income,  $Y^0$ , is large or small, the additional cost of concealing the  $x^{\text{th}}$  percentile of income is exactly  $x\%$  of the additional amount concealed, as illustrated in figure 1.

The horizontal axis shows the proportion of pre-tax income concealed, from 0 when none is concealed to 1 when one's entire income is concealed. The vertical axis shows the marginal cost of concealment, measured as a proportion of the additional income concealed. The diagonal line at 45 degrees to both axes is a reflection of the strong assumption that the cost of concealment per additional dollar concealed is just equal to the share of income already concealed. The tax payer hides income from the tax collector with absolutely no chance of discovery but at a cost as indicated by the height of the diagonal line. More expenditure than is indicated would be superfluous; less would be ineffective.

Given this admittedly simple picture of tax evasion, a person's response to taxation is determinate. When the tax rate is  $t$ , a person hides a proportion  $t$  of his income and declares a portion  $(1 - t)$ , so that the fraction of true income (unconcealed or concealed) paid to the tax collector becomes  $t(1 - t)$  represented in the figure by the area of the rectangle R. The fraction of his income used up in hiding income from the tax collector is  $t^2/2$  represented in the figure by the area of the triangle L. The area of the triangle L is the waste of resources (or deadweight loss) in tax evasion; it is income used up by the tax payer but contributing neither to his own consumption nor to the revenue of the government.

Now suppose that the redistribution of income is arranged through a negative income tax where each person is taxed at a uniform rate  $t$  and where all public revenue is returned to the tax payers in equal amounts (called the demogrant) per head. With tax evasion as specified in figure 1, it follows that

$$\text{Net income} = \text{gross income} - \text{tax paid} - \text{cost of tax evasion} + \text{demogrant} \quad (2)$$

$$\text{or} \quad Y = Y^0 - t(1 - t)Y^0 - (t^2/2)Y^0 + t(1 - t)(Y_p^0 + Y_R^0)/2$$

To see why the demogrant is what it is claimed to be, note that every person pays a share  $t(1 - t)$  of his gross income to the tax collector and that the average gross income per person must be  $(Y_p^0 + Y_R^0)/2$ .

The income of the richest person is reduced to

$$Y_R = Y_R^0[1 - t(1 - t) - t^2/2] + t(1 - t)(Y_p^0 + Y_R^0)/2 \quad (3)$$

and the income of the poorest is increased to

$$Y_p = Y_p^0 [1 - t(1 - t) - t^2/2] + t(1 - t)(Y_p^0 + Y_R^0)/2 \quad (4)$$

Equations (3) and (4) show the redistributive effect of a negative income tax on the understanding that law A is in force. Replacement of law A by law B leads to modifications of these equations to be discussed presently.

When income is redistributed by means of a negative income tax, the price,  $p(t)$ , per dollar of additional income to the poorest person with income of the richest person as the numeraire - dollars lost to the richest person per dollar gained by the poorest person - becomes<sup>3</sup>

$$\begin{aligned} p(t) &= - [\delta Y_R / \delta t] \div [\delta Y_p / \delta t] \\ &= [1 + 2tY_p^0 / (Y_R^0 - Y_p^0)] \div [1 - 2tY_R^0 / (Y_R^0 - Y_p^0)] \end{aligned} \quad (5)$$

which is equal to 1 - meaning that dollars can be transferred one-for-one - when  $t = 0$ , but rises steadily with  $t$  all the way to infinity when  $t$  rises to  $(1/2)(Y_R^0 - Y_p^0) / (Y_R^0)$ .

If  $Y_p^0 = 0$ , meaning that the poorest person has no income other than the transfer under the negative income tax, then equation (5) boils down to

$$p(t) = 1 / (1 - 2t) \quad (6)$$

and the highest feasible tax rate - the rate beyond which additional increases would reduce net incomes of both rich and poor - is 50%.

Thus, from equations (3) and (4), it follows that when the income of the richest person is 100, when the income of the poorest person is 0 and when tax evasion is as described in figure 1, the most that can be transferred to the poor by means of a negative income tax is 12.5 which is acquired at a tax rate of 50% and which imposes cost of 25 on the richest person.<sup>4</sup>

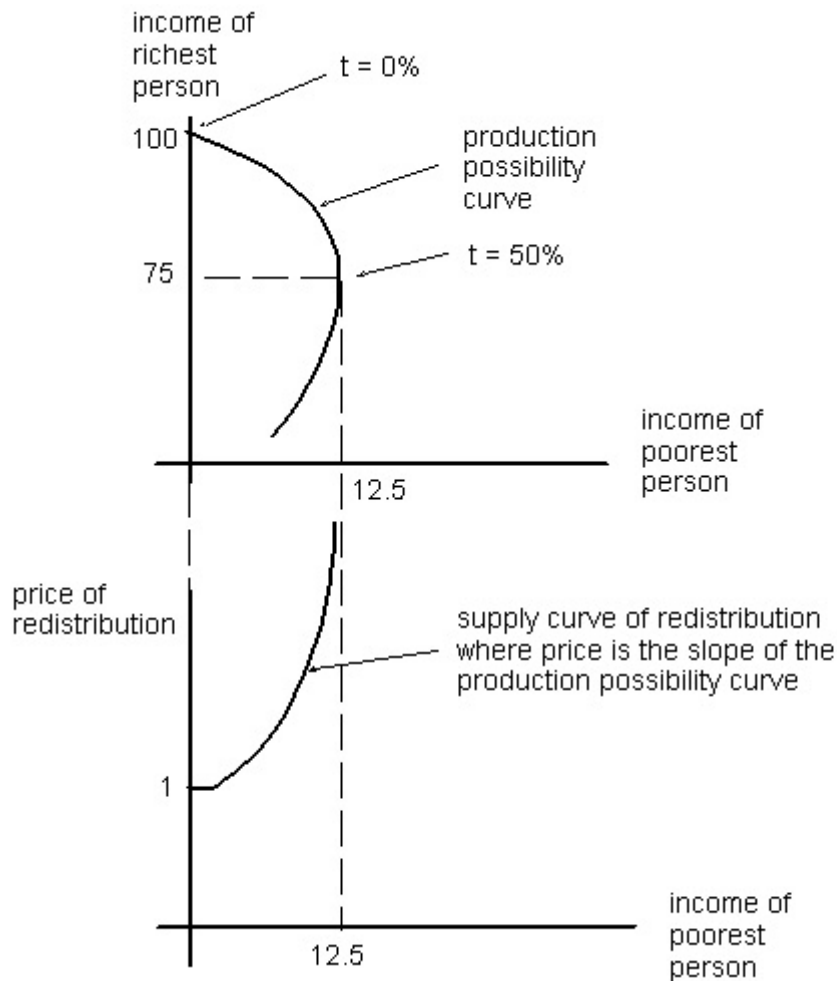
<sup>3</sup>Note that  $[\delta Y_R / \delta t] = Y_R^0 [-1 + t] + [1 - 2t](Y_p^0 + Y_R^0)/2 = - (1/2)[(Y_R^0 - Y_p^0) + 2tY_p^0]$  and that  $[\delta Y_p / \delta t] = Y_p^0 [-1 + t] + [1 - 2t](Y_p^0 + Y_R^0)/2 = - (1/2)[(Y_p^0 - Y_R^0) + 2tY_p^0]$  which, together, imply equation (5).

<sup>4</sup>The price of income to the poorest person with income to the richest person as the numeraire is closely related to the marginal cost of public funds, defined as the ratio of the full cost of taxation to the taxpayer (tax paid + deadweight loss) per dollar of tax actually paid. Specifically,

$$\begin{aligned} \text{marginal cost of public funds} &= [\Delta R + \Delta L] / \Delta R = [t(1 - t) + (t^2/2)] / [t(1 - t)] \\ &= (2 - t) / (2 - 2t) \end{aligned}$$

which begins at 1 when  $t = 0$  but only rises to infinity when  $t = 100\%$ . The price of income to the poorest person seems the better indicator of the cost of redistribution when there is a uniform

**Figure 2: The Production Possibility Curve for Income of the Richest Person and the Income of the Poorest Person, together with the Supply Curve of Redistribution**



The situation is illustrated in figures 2. The top half of the figure shows a production possibility curve - a variant of the Laffer curve - tracing all feasible combinations of net (post-tax, post transfer) incomes of the richest person and the poorest person, on the understanding that others' net incomes vary continuously in between. The vertical axis shows the net income of the

distribution of income so that the trade-off between richest and poorest is meaningful to everyone else. It becomes messy for societies with complex distributions of income.

richest person,  $Y_R$ . The horizontal axis shows the net income of the poorest person,  $Y_p$ . Each point on the curve shows the combination of net incomes at some tax  $t$ , from  $(100, 0)$  at  $t = 0$  to  $(75, 12.5)$  at  $t = 50\%$ , with both net incomes diminishing for subsequent increases in  $t$ . The bottom half of figure 2 shows the supply curve of income to the poorest person, with “quantity”,  $Y_p$ , on the horizontal axis and with “price”,  $p(t)$  as indicated in equation (6), on the vertical axis. Except for the special meaning of price in this context - a rate of trade-off between incomes rather than between goods - there is nothing special about the supply curve. It is derivable in the usual way from the production possibility frontier above. Along this supply curve, the price,  $p(t)$ , begins at 1 when the quantity,  $Y_p$ , is equal to 0, but the price rises to infinity when the quantity reaches 12.5, which is as large as the income of the poorest person can be.

Figure 2 will be employed to illustrate the impacts of alternative laws upon the incomes of the rich and the poor. Law A is unambiguously preferable to law B if the switch from law B to law A pushes out the entire production possibility curve. Law A is preferable at some tax rates but not others if the corresponding production possibilities cross in a manner to be set out in detail below.

A supply curve of income to the poor like that in the bottom half of figure 2 can be expected to exist in a wide variety of circumstances, extending well beyond the ascription of deadweight loss to tax evasion alone, but the size of the demogrant is at the mercy of arbitrarily-chosen parameters. The maximal feasible demogrant depends on the efficiency of tax evasion. The lower the marginal cost of concealing income from the tax collector, the smaller the maximum attainable demogrant and the worse off everyone must be. Like efficiency in crime, efficiency in tax evasion must be harmful to the population as a whole.

It was assumed, quite arbitrarily, in the construction of figure 1 that a person’s marginal cost of concealment of one additional dollar is just equal to the proportion of pre-tax income already concealed, so that the slope of the curve in figure 1 is equal to 1. The marginal cost of concealment was assumed to be  $x$  when a fraction  $x$  of pre-tax income is already concealed. To see the significance of this assumption, suppose instead that the marginal cost of concealment is  $\delta x$  where a small  $\delta$  signifies efficient tax evasion. Once again, the taxpayer conceals income from the tax collector up to the point where the marginal cost of concealment is just equal to the marginal cost of the tax that would otherwise be paid, i.e.  $\delta x = t$ . Now,

$$\text{Tax revenue} = R = t(1 - x) = t(1 - t/\delta) \quad (7)$$

$$\text{Deadweight loss} = L = tx/2 = \frac{1}{2} t^2/\delta \quad (8)$$

$$Y_p = \frac{1}{2} t(1 - t/\delta)(100) \quad (9)$$

$$Y_R = 100[1 - t(1 - t/\delta) - \frac{1}{2} t^2/\delta + \frac{1}{2} t(1 - t/\delta)] = 100[1 - t/2] \quad (10)$$

and 
$$p(t) = - [\delta y(100, t)/\delta t] / [\delta y(0, t)/\delta t] = (\frac{1}{2}) / (\frac{1}{2} - t/\delta) = 1/(1 - 2t/\delta) \quad (11)$$

so that the supply curve in figure 2 becomes steeper as the cost of tax evasion,  $\delta$ , falls.

The price,  $p(t)$  in equation (6), of extra income to the poor was derived on the assumption that  $\delta = 1$ . On that assumption, tax revenue is maximized at a tax rate of 50%, generating a rise in the income of the poorest person from 0 to 12.5, a corresponding fall in the income of the richest person from 100 to 75, and a deadweight loss of 12.5. By contrast, if  $\delta = 2$ , signifying that tax evasion is twice as costly as had been assumed, tax revenue is maximized at a tax rate of 100%, generating a rise in the income of the poorest person from 0 to 25, a fall in the income of the richest person from 100 to 50, and a deadweight loss of 25.

The clean simplicity of the model rests upon the very strong assumption that tax evasion is either perfectly concealed or not concealed at all. For any given expenditure on tax evasion, income is concealed up to some fixed amount because additional concealment would surely be discovered unless expenditure on concealment were increased appropriately. On the strength of this assumption, the marginal cost per dollar of tax concealed as shown in figure 1 is a simple relation between dollars and dollars, presumed to be independent of prices of goods or of how net income is spent. A more realistic model of tax evasion would allow for a probability of detection dependent on the amount of tax concealed, the amount of public expenditure to detect concealment and the punishment when concealment is detected. Such a model, which is surely appropriate in some circumstances, might complicate the story in this paper without shedding much extra light upon the choice between law and tax as instruments for redistribution. (See Cowell, 1990)

## Two Meanings of Efficiency

With the introduction of deadweight loss into the simple example at the outset of this paper, it becomes essential to recognize a distinction between what might be called *instrumental* and *absolute* efficiency. Absolute efficiency is the maximization of income, either the national income or the sum of the incomes of all relevant parties, such as plaintiff and defendant in a legal dispute. A gain of \$5 to one person at cost of \$10 to another is necessarily inefficient in this sense of the term, no matter who the beneficiary happens to be. There are many circumstances, such as the allocation of money for road repair in different places or rules affecting profit-maximizing firms, where absolute efficiency - the principle that a dollar-is-a-dollar-is-a-dollar to whomsoever it may accrue - is the appropriate objective.

Instrumental efficiency is the absence of waste, the attainment of some objective while inflicting the least possible harm on people who are adversely affected. When the redistribution of income is an object of public policy, a gain to the poor may be acquired efficiently not in the sense that the national income is maximized, but in the sense that the increase in the income of the poor is procured with the least possible reduction in the income of the rich. An increase in \$5 to the poor at a cost of \$10 to the rich would be instrumentally efficient if the only other way to procure that \$5 increase would impose a cost of \$11 on the rich. Nothing would be wasted as

long as no less burdensome means can be found to transfer \$5 to the poor.

The distinction is important because, in so far as redistribution is expensive, a society seeking absolute efficiency ought typically to allow no redistribution at all, but a society prepared to buy some redistribution at the cost of diminishing the national income must choose its preferred point on the supply curve of figure 2.

As expressed in the quotation from Kaplow and Shavel at the beginning of this paper, the efficiency-only doctrine is an appeal to absolute efficiency, not just in blocking inefficient laws beneficial to the poor, but in mandating efficient laws beneficial to the rich. Consider a law that would cause an increase of \$2,000 in the incomes of each of 1,000 wealthy CEOs, but would at the same time cause a decrease of \$1 to each of 1,000,000 poor people, raising the national income by a million dollars. The efficiency-only doctrine would require this law to be passed, for it would make everybody better off if combined with the appropriate action by an omnipotent government that can reassign incomes among people without at the same time reducing the national income. But the reassignment of income must be just right, taxing the 1,000 CEOs between \$1,000 and \$2,000 each, and directing the revenue from the tax to the million poor people harmed by the CEO law. Otherwise the combination of the CEO law and compensatory taxation could benefit both rich and poor on average but would be haphazard in its effects on particular people.

### **Three Patterns of Redistributive but Inefficient Law**

Patterns of redistributive law can be represented as modifications of equations,(3) and (4) connecting net to gross incomes through a negative income tax and giving rise to the supply curve of additional income to the poor in figure 2. Think of these equations as describing the economy when the relatively efficient but less redistributive law A is in force.

Three patterns will be examined in turn: The first treats the switch from law A to law B as analogous to a supplementary but less productive income tax. The second treats the switch from law A to law B as a transfer of net income from rich to poor. The third treats the switch from law A to law B as a transfer of gross income from rich to poor or as a reassignment of strands of in the bundles of property rights.

#### **i) Redistributive Law as a Second but Relatively Inefficient Income Tax**

This pattern of redistributory law may be illustrated by income-contingent parking fines. Normally, parking fines are levied as dollars of penalty for any given offense, the same dollar value for everybody but higher as a proportion of income for the poor than for the rich. Call this law A. By contrast, income-contingent parking fines might be levied as a proportion of the income of the parking violator, the same proportion for everybody but a higher dollar value for the rich than for the poor. Call this law B.

Law B is relatively redistributive. Since the object of the exercise is to compare more distributive but less efficient law with less distributive but more efficient law, it is assumed for the purpose of the comparison that law B is relatively inefficient as well, inefficient in the sense that the sum of all incomes, broadly conceived, is lower under law B than under law A. The relative inefficiency of law B may stem from its deterrence of parking violations or its cost of administration. For convenience of exposition, the latter is assumed here. Suppose that a) both laws are equally effective in deterring parking violations, b) everybody is equally likely to get caught in a parking violation, c) regardless of which law is in force, the revenue from the fine is redistributed as an increment to the demogrant.

On these restrictions, the efficient law is the law with the smaller administrative cost. Suppose, therefore, that law B is costly to enforce, but law A is not. Everybody's expected payment under law A is just equal the per capita increase in the demogrant made possible by the revenue from parking fines, so that nobody's expected net income is affected and equations (3) and (4) remain in force. [Society's gain from having fewer parking violations is, in effect, a free public good.] Law B is different, for it is assumed to supply a smaller demogrant for any given fine,  $t_2$ , than would be supplied if enforcement were costless. Specifically, the extra demogrant supplied by revenue from parking fines under law B is a fraction  $\alpha$  (where  $0 < \alpha < 1$ ) of the additional demogrant as it would be if the administration of law B were costless. The question at hand is whether the extra redistribution supplied by law B could be procured more efficiently by an increase in the ordinary income tax instead, whether law A combined with the appropriate increase in the rate of the income tax can make everybody better off than they would be under law B. That turns out to be so.

Designate the rate of the ordinary income tax rate as  $t_1$  rather than  $t$ , reserving the term  $t$  for a combined tax rate  $t$ , where

$$t = t_1 + t_2 \quad (12)$$

The proportion of income hidden from the tax collector becomes  $(1 - t)$  rather than just  $(1 - t_1)$  because the benefit from hiding an additional dollar of income depends upon the total tax rate,  $t$ , regardless of how it is apportioned between  $t_1$  and  $t_2$ .

The demogrant arising from the ordinary income tax becomes

$$D_1 = t_1(1 - t)(Y_R^0 + Y_P^0)/2 \quad (13)$$

but the demogrant from the implicit tax in income-contingent parking fines becomes

$$D_2 = \alpha t_2(1 - t)(Y_R^0 + Y_P^0)/2 \quad (14)$$

because the administration of law B is costly.

To derive net incomes from gross incomes, the single demogrant within (3) and (4) must be replaced by the sum of the demogranths in equations (13) and (14). Now net incomes become

$$Y_R = Y_R^0[1 - t(1 - t) - t^2/2] + (t_1 + \alpha t_2)(1 - t)(Y_p^0 + Y_R^0)/2$$

$$= Y_R^0[1 - t(1 - t) - t^2/2] + t(1 - t)(Y_p^0 + Y_R^0)/2 - (1 - \alpha) t_2(1 - t)(Y_p^0 + Y_R^0)/2 \quad (15)$$

and

$$Y_p = Y_p^0[1 - t(1 - t) - t^2/2] + (t_1 + \alpha t_2)(1 - t)(Y_p^0 + Y_R^0)/2$$

$$= Y_p^0[1 - t(1 - t) - t^2/2] + t(1 - t)(Y_p^0 + Y_R^0)/2 - (1 - \alpha) t_2(1 - t)(Y_p^0 + Y_R^0)/2 \quad (16)$$

The double distortion is reflected in the comparison of the net incomes of rich and poor in equations (3) and (4) and in equations (15) and (16). These pairs of equations are identical except that  $Y_R$  and  $Y_p$  are both diminished in equations (15) and (16) to reflect the postulated inefficiency of law B. Everybody's net income is reduced under law B by  $(1 - \alpha) t_2(1 - t)(Y_p^0 + Y_R^0)/2$ . Both rich and poor are worse off by this amount than they would be if law A remained in force and the income tax rate were raised from  $t_1$  to  $t_1 + t_2$  where  $t_2$  is the rate implicit in income-contingent parking fines. With reference to figure 2 above, the effect of a switch from law B to law A together with a compensating increase in the rate of the income tax is to contract the production possibility curve making everybody potentially worse off.

The double distortion consists of a) the increase in the deadweight loss in taxation from  $(t_1)^2/2$  to  $(t_1 + t_2)^2/2$  which remains unchanged when the switch from law A to law B is replaced by the appropriate increase in the rate of the ordinary income tax, and b) the reduction in the potential demogrant from  $t(1 - t)(Y_p^0 + Y_R^0)/2$  to  $(t_1 + \alpha t_2)(1 - t)(Y_p^0 + Y_R^0)/2$  when law A is replaced by law B. Kaplow and Shavell, as quoted at the beginning of this paper, are completely right in this case.

There is some question, however, as to what Kaplow and Shavell are right about. The case against income-contingent fines is that, if ever such fines were beneficial to the poor, they must be less so for any given cost to the rich than the appropriate adjustment to the rate of the negative income tax. But such fines might not be beneficial to anybody, rich or poor, for the administrative cost may be prohibitive. It is exceedingly unlikely that anybody would stand to gain from income-contingent parking fines. Imagine the police having to check every parking violator's income to determine how high a fine to impose. Is the millionaire exempt from parking fines this year because he lost money in the recession? What fine is appropriate for a person who earns nothing but lives off his assets? Perhaps there is some other context where income-contingent fines are beneficial to the poor, but it is hard to see what that context might be. The validity of the double distortion argument might be confined to laws that no country has ever adopted and that have never been seriously advocated.



The argument generalizes from income-contingent parking fines to all income-contingent penalties and fines, but that is about as far as it goes.

## ii) Redistributive Law as a Transfer of Net Income from Rich to Poor

Laws may benefit the poor at the expense of the rich without provoking extra tax evasion. For example, law A may forbid rich and poor from sleeping on park benches, while law B may allow everybody to do so. Law B is inefficient as well as redistributive when the rich place a higher monetary value on parks free of sleeping bums than the poor place on the right to sleep there. Yet, one is unlikely to hide more of one's income from the tax collector depending on which of these laws is in force.

Generalizing this example, one may think of law B as conveying a certain increase,  $K$ , in the net income of the poor at the cost of a decrease  $\delta K$  in the net income of the rich, where  $\delta$  must be greater than 1 if the redistributive law is to be inefficient as well. The switch from law A to law B requires modification of the tax-induced conversion of gross to net incomes in equations (3) and (4). Net incomes become

$$Y_R = Y_R^0[1 - t(1 - t) - t^2/2] + t(1 - t)(Y_p^0 + Y_R^0)/2 - \delta K \quad (17)$$

and 
$$Y_p = Y_p^0[1 - t(1 - t) - t^2/2] + t(1 - t)(Y_p^0 + Y_R^0)/2 - K \quad (18)$$

from which it follows that the price,  $P$ , of income to the poor by the adoption of law B must be

$$P = - \Delta Y_R / \Delta Y_p = \delta \quad (19)$$

An increase in the rate of the negative tax is a more efficient redistributor than the switch from law A to law B if and only if  $p < P$ , that is, if the price of income to the poor through additional income taxation is less than the price implicit in the switch from law A to law B. From the formula for  $p$  in equation (6) and as long as  $Y_p = 0$ , the adoption of law B allowing rich and poor to sleep on park benches is the less efficient way to supply additional income to the poor as long as  $t < (P - 1)/2P^5$ , but becomes relatively efficient at higher tax rates.

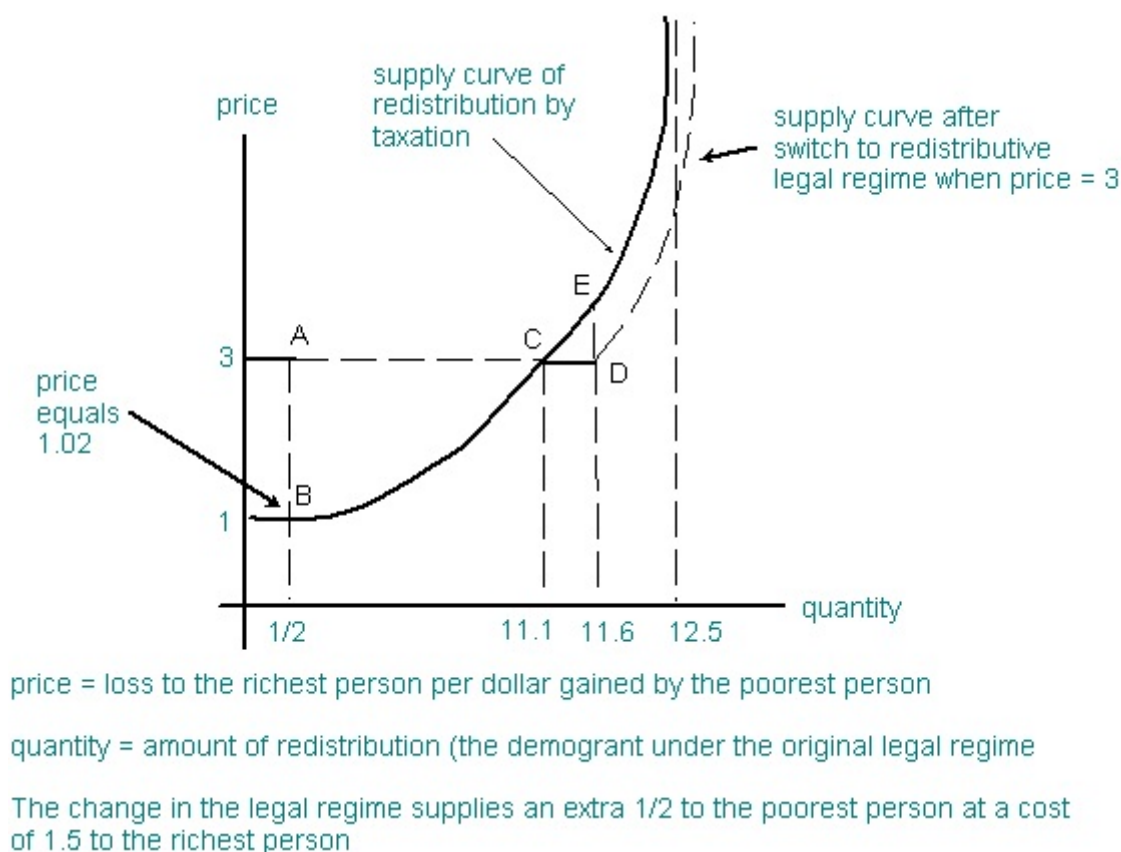
This is illustrated in figure 3 on the assumption that  $K = 1/2$  and  $\delta = 3$ . The heavy line is the supply curve of additional income for the poor carried over unchanged from the bottom half of figure 2. The height, 3, of the point A is the price to the rich per dollar to the poor when an additional income of  $1/2$  is supplied in the absence of income taxation, that is when  $t = 0$ . The outcome is clearly inefficient because the same additional income for the poor can be acquired at a price of just over 1 by the introduction of a small negative income tax. So far the example conforms exactly to Kaplow and Shavell's statement at the beginning of this paper. But the

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<sup>5</sup>The solution to  $P < 1/(1 - 2t)$

provision of more and more income to the poor requires a steady increase in the tax rate and a corresponding rise in the price of income to the poor, in accordance with equation (6), until eventually a point is reached where  $p$  catches up to  $P$  and the switch from law B to law A is no longer efficient. As shown in the figure, the tax price  $p$  catches up to  $P$  when  $Y_p$  has risen to 11.1, at which point  $t = 1/3$ . Once  $t = 1/3$ , the income of the poor can be raised from 11.1 to 11.6 less expensively by a the switch from law A to law B costs less than by an increase in the tax rate.

**Figure 3: Redistribution by Changing the Legal Regime *as an Alternative or in Addition to* Redistribution by Taxation**



As shown in figure 3, the switch from law A to law B shifts the supply curve uniformly to the right at the point where the price of income to the poor is the same through an increase in the income tax or through a change in the law. The maximum income to the poor (at a tax rate of 50%) rises from 12.5 under law A to 13 under law B.

The pattern in figure 3 can emerge in various ways. The principal example of the double distortion was income-contingent parking fines. Suppose instead that fines are contingent not on the income of the parking-violator, but on the value of the illegally-parked car, higher for a shiny new Cadillac than for a beat up old jalopy. The difference between expenditure-contingency and

income-contingency lies in their influence on the incentive to hide income from the tax collector. As shown in figure 1, one's propensity to conceal income depends upon the tax rate exclusively and not at all on prices of goods or upon how one's residual income is spent. As with rules about sleeping on park benches, there is no double distortion in expenditure-contingency because the welfare loss associated with this implicit excise tax is entirely independent of the rate of the income tax.

On the other hand, expenditure-contingent fines could be replaced by a straightforward excise tax on luxury goods. Instead of choosing a higher fine for illegal parking of a Cadillac than for illegal parking of a jalopy, their purchase prices or registration fees might be adjusted accordingly, leaving parking violations to the police department and assigning the redistribution of income to the Ministry of Finance. As Kaplow and Shavell do not discuss the excise tax, it is hard to tell whether excise taxation of luxury good would be placed under the heading of redistributive taxation or redistributive law. It is a well recognized principle of public finance that the excise tax is less efficient than the income tax. Tax evasion can reverse that. If excise taxation is more difficult to evade than income taxation, the distortion in purchasing patterns in the one must be set against the greater waste of resources from tax evasion in the other. The proverbial English window tax may well have been efficient in its day.

### **iii) Redistributive Law as a Modification of Pre-tax Income or as a Reassignment of Strands of Property Rights**

Much of what we think of as redistributive law - land reform, responsibility for industrial accidents, minimum wage law, the right to join a union - does not easily conform to the model of a supplementary income tax levied upon fixed pre-tax incomes. Rather, law for the benefit of the poor at the expense of the rich is often more like a modification of gross, pre-tax incomes or a reassignment of strands of property rights.

To model this, suppose the switch from law A to law B is tantamount to an increase,  $T$ , in the gross income of the poorest person coupled with a decrease  $\lambda T$  in the gross income of the richest person, and with incomes varying continuously in between. Law B is necessarily redistributive. For law B to be inefficient as well, the value of  $\lambda$  must be greater than 1. Suppose that to be so. The equations converting gross to net incomes become

$$Y_R = (Y_R^0 - \lambda T)[1 - t(1 - t) - t^2/2] + t(1 - t)(Y_p^0 + Y_R^0 - (\lambda - 1)T)/2 \quad (20)$$

and

$$Y_p = (Y_p^0 + T)[1 - t(1 - t) - t^2/2] + t(1 - t)(Y_p^0 + Y_R^0 - (\lambda - 1)T)/2 \quad (21)$$

Equations (21) and (22) differ from equations (3) and (4) by replacing  $Y_R^0$  and  $Y_p^0$  in the first part of these expressions with  $(Y_R^0 - \lambda T)$  and  $(Y_p^0 + T)$  and by reducing the demogrant in the

second part from  $t(1 - t)(Y_p^0 + Y_R^0)/2$  to  $t(1 - t)(Y_p^0 + Y_R^0 - (\lambda - 1)T)/2$  to reflect the fall in average income.

The price of income to the poor becomes

$$P = -\Delta Y_R / \Delta Y_P \quad (22)$$

where  $\Delta Y_R = -\{\lambda T[1 - t(1 - t) - t^2/2] + t(1 - t)(\lambda - 1)T/2\}$

and where  $\Delta Y_P = \{T[1 - t(1 - t) - t^2/2] - t(1 - t)(\lambda - 1)T/2\}$

Inspection of equation (22) shows that  $P = \lambda$  (the initial loss to the rich per dollar of gain to the poor) when  $t = 0$ , but that  $P$  rises steadily with  $t$ .

Whether redistribution is best undertaken by a negative income tax, a transfer of property rights or a combination of the two depends what minimizes the cost to the rich for any given benefit to the poor, but that in turn depends on how much redistribution society chooses to provide. Law B would be unambiguously preferable if the transfer  $T$  could be made as large or as small we please and if  $\lambda = 1$ . The question is what happens when  $T$  is fixed and  $\lambda > 1$ .

Table 1 supplies a counter-example to the proposition at the heart of the double distortion argument that the outcome of redistributive but inefficient law, B, is always worse for rich and

**Table 1: The Efficiency of Switching from Law A to Law B Dependant on the Tax Rate**

----- Law A-----				----- Law B-----			
t	$Y_P$	$Y_R$	p	$Y_P$	$Y_R$	P	
0	0	100	1	4	92	2	
.0877	4	95.61	1.21				Law A with $t = .0877$ superior to law B with $t = 0$
.1	4.5	95	1.25	7.94	87.58	2.16	
.1980	7.94	90.1	1.66				Law A with $t = .1980$ superior to law B with $t = .1$
.25	9.375	87.5	2	12.125	80.75	2.46	
.4134	12.125	79.33	5.77				Law B with $t = .4134$ superior to law A with $t = .25$
.478	12.475	76.08	38.5	14.52	70.49	2.73	Tax rate at which $Y_P$ is maximized under law B
.5	12.5	75	$\infty$	14.50	69.5	2.75	Tax rate at which $Y_P$ is maximized under law A
.6	12	70	- 5	13.84	64.88	2.78	Tax rate inefficiently high under either law

poor alike than the outcome of efficient but non-redistributive law, A, coupled with an appropriate increase in the rate of the negative income tax. It is shown instead that the proposition is true at low tax rates only, but is false when high tax rates are high.

The postulated numbers in the table are  $Y_R^0 = 100$ ,  $Y_p^0 = 0$ ,  $T = 4$  and  $\lambda = 2$  together with a set of tax rates chosen to illustrate significant features of the example. The tax chosen rates,  $t$ , are listed in the first column. The second and third columns, derived from equations (3) and (4), show net incomes of the poorest and the richest person,  $Y_p$  and  $Y_R$  when law A is in force. The fourth column shows the price,  $p$ , of additional income to the poor generated, as shown in equation (6), by a slight increase in the tax rate. The fifth and sixth columns, derived from equations (20) and (21), show net incomes of the poorest and the richest person when law B is in force. The seventh column shows the price,  $P$ , of additional income to the poor generated by a switch from law A to law B. The price  $P$  is defined in equation (22) but is easily computed from the numbers in the table. It is  $-\Delta Y_R / \Delta Y_p$  where  $\Delta Y_R$  is the difference between  $Y_R$  under law A and under law B, and where  $\Delta Y_p$  is the difference between  $Y_p$  under law A and under law B.

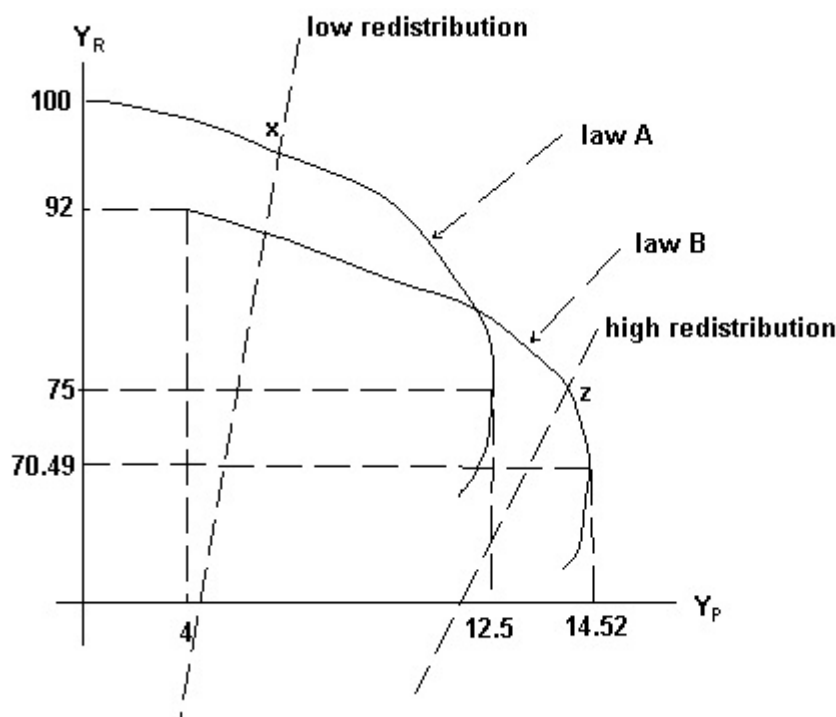
The first row of the table shows the effect of a switch from law A to law B when  $t = 0$ ; net income of the poor,  $Y_p$ , is raised from 0 to 4, while net income of the rich,  $Y_R$ , is lowered from 100 to 92. Subsequent rows show that, as  $t$  rises from 0 to .5, the price  $p$  rises from 1 to infinity, and the price  $P$  rises from 2 to 2.75. It is approximately (since  $p$  is a derivative and  $P$  is a ratio of finite amounts) where  $p$  overtakes  $P$  that law B surpasses law A as the more efficient instrument of redistribution. The highest attainable income of the poorest person is 12.5 at a tax rate of .5 under law A and is 14.52 at a tax rate of .478 under law B. Increases in the tax rate above these limits reduces everybody's income

The superiority of law A over law B at low tax rates is illustrated in the first four rows of the table. When  $t = 0$  or when  $t = .1$ , the income of the rich can be increased without at the same time reducing the income of the poor by a switch to law A coupled with an appropriate increase in the tax rate. At  $t = 0$ , a switch from law B to law A coupled with an increase in  $t$  to .0877 leaves  $Y_p$  unchanged at 4 but *raises*  $Y_R$  from 92 to 95.61. At  $t = .1$ , a switch from law B to law A coupled with an increase in  $t$  to .1980 leaves  $Y_p$  unchanged at 7.94 but *raises*  $Y_R$  from 87.58 to 90.01. At higher tax rates, the result goes the other way. At a  $t = .25$ , a switch from law B to law A coupled with an increase in  $t$  to .4134 keeps the income of the poor unchanged (at 12.125) but *lowers* income of the rich from 80.75 to 79.33. In other words, starting from law A with a tax rate of .4134 at which the tax price of income to the poor has risen to 38.5, it is possible to switch to law B at  $t = .25$  making the rich better off, but without making the poor any worse off. There is a boundary at a tax rate of about .21 (not shown in the table) where a switch from law A to law B coupled with a tax increase sufficient to keep poor equally well off keeps to rich equally well off too.

The superiority of law A at low tax rates and of law B at high tax rates is illustrated in figure 4 with  $Y_R$  on the vertical axis and  $Y_p$  on the horizontal axis. All of the numbers in figure 4 are from table 1, but the figure itself is not drawn to scale. The two curved lines on the figure

show all feasible combinations of  $Y_R$  and  $Y_p$  under each of the two laws. The curve representing law A begins, for  $t = 0$ , at  $Y_R = 100$  and  $Y_p = 0$ . As  $t$  increases toward .5, the curve slopes downward to the point where  $Y_R$  is reduced to 75 and  $Y_p$  is maximized at 12.5. Beyond that point, the curve turns back on itself because any further increase in the tax rate diminishes both  $Y_R$  and  $Y_p$ . The curve representing options under law B is similar, but it begins at  $Y_R = 92$  and  $Y_p = 4$ , the maximum value of  $Y_p$  is 14.52 rather than 12.5, and the corresponding value of  $Y_R$  is 70.49 rather than 75.

**Figure 4: Choice Between Legal rules Dependent the Amount of Redistribution**



Think of the two diagonal lines as both originating from the origin of the figure (not shown) where  $Y_R$  and  $Y_p$  are both equal to 0, so that the slope of each line is a ratio of  $Y_R$  to  $Y_p$ . Thus, the line with the higher ratio of  $Y_R$  to  $Y_p$  can be thought of as reflecting society's choice to redistribute relatively little, while the line with the lower ratio of  $Y_R$  to  $Y_p$  can be thought of as reflecting society's choice to redistribute relatively more.

The story in figure 4 is that, with low redistribution, society chooses law A bringing incomes to the point  $x$  where both rich and poor are better off than if the same degree of redistribution had been attained under law B instead, but that, with high redistribution, society chooses law B bringing incomes to the point  $z$  where both rich and poor are better off than if the same degree of redistribution had been attained under law A instead. The efficiency-only doctrine which would have society choose law A regardless is clearly wrong in this case.

## **Additional Considerations:**

### **i) The Labour-leisure Choice Verses Tax Evasion as the Source of Deadweight Loss**

The contraction of declared income in response to taxation is, in practice, a combination of tax evasion, the labour-leisure choice, the choice between paid work and do-it-yourself activity, and so on. It is customary in the literature of public finance to focus upon the labour-leisure choice as the representative of these different ways for taxpayers to adjust behaviour to reduce the amount of tax they pay and as the source of deadweight loss in taxation. The paper makes use of tax evasion instead. The choice was justified for convenience and simplicity of exposition, but there is more to it than that.

To see what is at stake, consider once again the contrast between income-contingent and expenditure-contingent parking fines. If tax evasion were the only source of deadweight loss, a regime of income-contingent parking fines would contribute to the deadweight loss in taxation, but a regime of expenditure-contingent parking fines would not, for, as implicit in the construction of figure 1, the incentive to evade tax is independent of the prices of goods purchased with post-tax income. By contrast, if the labour-leisure choice were the only source of deadweight loss, both regimes would contribute to the deadweight loss in taxation because both would reduce the benefit to the taxpayer of additional income earned. Expenditure-contingent parking fines have both sources of deadweight loss. Income-contingent fines have only one. This in itself may be a sufficient objection to the efficiency-only criterion for the choice of legal rules. A balance between redistributive taxation and redistributive but inefficient legal rules may be warranted because certain legal rules are free of some, though by no means all, of the sources of deadweight loss in taxation.

The matter is complicated by the possibility that the supply of labour supply is independent of the rate of the income tax because the income and substitution effects of an increase in the return to labour cancel out (Hartwick, 2000, 319). Consider a community of people with different wages,  $w$ , but with identical utility functions

$$u = h^\theta y \quad (23)$$

where  $h$  is hours of leisure,  $y$  is post-tax income and  $\theta$  is a parameter that is the same for everybody. Each person chooses  $h$  to maximize  $u$  subject to a budget constraint. In the absence of taxation, the budget constraint is

$$y = (24 - h)w \quad (24)$$

When income is taxed at a rate  $t$ , the budget constraint becomes

$$y = (24 - h)w(1 - t) \quad (25)$$

Maximizing utility,  $u$ , subject to either budget constraint, the person chooses

$$h = 24\theta/(1 + \theta) \quad (26)$$

which depends on  $\theta$  but is independent of the wage or the tax rate. If it just so happens that  $\theta = 2$ , then everybody, regardless his wage, takes 16 hours of leisure and works 8 hours a day.

When the labour-leisure choice constitutes a second source of deadweight loss, the choice between expenditure-contingent parking fines and an increase in the rate of the negative income tax becomes a choice between *two* double distortions. Three distortions would have to be considered: distortions arising from the labour-leisure choice, from tax evasion and from the inefficiency when rich and poor are provided with different incentives to not park illegally (different fines for acts with the same consequences for other people). An increase in the tax rate generates the first and second distortions. Expenditure-contingent parking fines generate the first and third. There is no presumption about which pair of distortions is the more harmful.

## **ii) The Productivity of Labour in the Avoidance of Accidents**

Kaplow and Shavell have been taken to task by Sanchirico's (2000 & 2001) for their failure, in common with most practitioners of law and economics, to recognize the importance of equity in the design of the law. "Whatever the reason, it has of late become acceptable in law and economics to dispose of equity with a quick citation to the new-rational literature and a nonchalant gesture toward the income tax." (2001, 1069). Kaplow and Shavell are not the only guilty parties. See, for example, Hyland and Zeckhauser (1979) and Mirrlees (1971). Sanchirico emphasizes that "...whatever makes people more productive of output in the workplace also makes them more productive of precaution in potentially hazardous activities" so that "the high ability are less likely to cause an accident than the low ability". (2000, 801) "In other words, we could institute a multi-dimensional "tax" table, such that each individual would determine her level of taxation by looking up not just her income but also consumption, damages caused and the like." (2001, 1027) A person's welfare is dependent upon the ability to avoid accidents as well as upon the ability to earn income. An ideal system of redistribution would take both into account. While recognizing Sanchirico concerns about differences in people's ability to avoid accidents or to evade the law, and about the significance of such differences for the design of legal rules, this paper has little to say on the matter because the focus is elsewhere.

## **iii) Personal Goods**

Suppose the only harm from an accident is that the victim must stop work for one month, losing the salary that would otherwise have been earned, \$3,000 if the victim is unskilled and \$30,000 if the victim is skilled. Let Law A be a rule requiring the person at fault to compensate the victim for lost income, whatever it may be. Similarly, if the victim's car is destroyed, the damages under law A are higher for a brand new Cadillac than for a beat up old jalopy. The effect of such law is to induce potential injurers to be more careful in the vicinity of high wage



earners and of expensive cars. Such law may well be efficient, minimizing the dollar value of the sum of the cost of accidents and the cost of accident avoidance. The corresponding law B might be a rule setting fixed fines for given types of harms, so much per day off work and so much for the complete destruction of a car, independently of the victim's wage or the price of the car destroyed. That societies have not adopted rules like law B suggests that they might be too expensive, but analogous rules have been adopted in other circumstances.

Consider the valuation of life. Normally, rich people would spend more than poor people to avoid a given risk of losing their lives. Respecting private valuations, efficient law would do the same. A negligence rule might assign responsibility for accidents if and only if the dollar value of the expected harm exceeded the cost of care, where the assigned dollar value of the expected harm in lethal accidents would have to include what the victim himself would have paid to avoid a given risk of death. And, since the amount one would be prepared to pay more to avoid a given risk of death would usually be higher for the rich than for the poor, a strict application of the negligence rule might hold the perpetrator responsible for certain types of accidents if and only if the victim is rich. Such a rule would be more efficient than the rules we actually apply. Society's unwillingness to follow the logic of efficiency to the bitter end in such situations can be looked upon as the adoption of redistributive but inefficient legal rules.

Similar considerations arise in the choice between fines and imprisonment. Person A punches person B in the nose. If the penalty is a fine set independently of the wealth of the perpetrator, a situation may arise where the poor are deterred but the rich are not. "It gives me great satisfaction", says the rich man to his poor neighbour, "to punch you in the nose, and my satisfaction far outweighs the money value of the penalty imposed by the law for doing so". The social imbalance from this consideration may be a part - though certainly not the whole - of the reason why some crimes are punished by imprisonment rather than by fines, even though the monetary equivalent of a given number of days in prison is surely greater for the rich than for the poor.

These examples have a common theme. In any democratic society people have two partly overlapping and partly conflicting sets of rights: equal civil rights as citizens and unequal property rights as holders of different amounts of resources. People with large incomes can buy more than people with small incomes, but everybody has one and only one vote, and the punishment for murder is the same regardless of whether the victim is rich or poor. There is a domain within which all men are equal, a domain within which all dollars (or valuations in dollars worth) are equal and a fuzzy line in between. Most people would place rules about optimal care to avoid life-threatening accidents in the domain where all men are equal, even though rules about optimal care for property damage may depend upon the value of the property itself. The efficiency-only doctrine represents a potentially-dangerous shifting of the boundary between civil rights and property rights.

#### **iv) The Negative Income Tax**

Following Kaplow and Shavell it has been assumed that the alternative to redistributive legal rules is a negative income tax with revenue devoted exclusively to financing the demogrant. There are two problems with this assumption. The lesser problem is that, even if an appropriate increase in the rate of a negative income tax were invariably superior as a redistributor to inefficient legal rules, such rules might still be desirable within the tax system as it is today. Justification of the efficiency-only doctrine is based on a comparison of actual and ideal, where, for one reason or another, the ideal may be unattainable. No country has ever instituted a negative income tax. The “proof” of the efficiency-only doctrine may not apply otherwise.

The greater problem is that, like all tax systems, a negative income tax cannot be reserved for the demogrant alone. At a minimum, the government must provide for roads, schools and defense. That being so, the price of the first dollar of extra income to the poor must be considerably greater than 1. The story in table 1 was that the efficient but non-redistributive law, A, was unambiguously superior to the redistributive but inefficient law, B, at low tax rates but not at high tax rates. The story may be irrelevant because other indispensable uses of public funds may push the tax-price of the first dollar of additional income to the poor above the price implicit in the switch from law A to law B.

In the extreme, prior redistribution of income together with other uses of public funds may push the tax system to the top of the Laffer curve where no additional revenue can be acquired by further increases in the tax rate, so that additional redistribution can only be acquired by cutting back on other “essential” public services. Whether taxation in the Americas has already pushed the economy beyond the point where tax increases yield no additional public revenue is a matter of some dispute. Feldstein (1995) has argued that this is so. Goolsbee (2000) has argued that it is not.

Regardless of the intentions of the advocates of the efficiency-only doctrine, objections to the doctrine may be based upon the fear that its ultimate impact is not just to redirect redistribution from law to tax, but to block redistribution altogether except in the unlikely case that it is (absolutely) efficient too. The efficiency-only doctrine transports redistribution to the tax system, but with no guarantee that it will survive there. If public expenditure is already high enough to place the economy at the top of the Laffer curve, there can be no room for additional taxation to finance additional redistribution. If so and if redistributive legal rules bear the same distortions as an increase in the rate of a negative income tax, then one way or another the poor are simply out of luck. It is the contention of this paper that redistribution is not blocked in this way because it can be brought about by measures with costs that are independent of, rather than additive to, the cost of redistribution through the tax system.

## **v) Haphazard Redistribution**

Friedman's critique of agricultural price supports in the quotation at the beginning of this paper is that price supports are haphazard, benefitting some rich farmers and harming some poor taxpayers, even if it is generally redistributive on balance. Kaplow and Shavell see a similar difficulty with redistributive law.

Nothing in this paper is a denial of that argument per se, but qualifications are in order: The tax system can be haphazard too. Some people acquire types of income that are especially difficult to hide from the tax collector or to convert to forms subject to low tax rates. Also, though haphazardness is a relevant side-effect of much redistributory policy, it is only one of many considerations to be taken into account. Agricultural policy benefitting thousands of poor farmers *may* be socially-desirable on balance even though a few wealthy farmers are beneficiaries too. Haphazardness may be a fair price to pay in any particular instance of redistribution. The argument that redistribution may be haphazard is unlike the double distortion argument. The latter, where valid, blocks all redistribution through the choice of legal rules. The former must be balanced against deadweight loss in taxation in deciding whether any particular law or policy is advantageous on balance.

## **Concluding Observation**

As redistribution through the tax system becomes progressively more expensive - as the marginal cost of public funds and the price of income to the poor increase - the importance of the legal system as a second redistributor either grows or shrinks depending upon the strength of the double distortion argument. Where there is a double distortion, a rise in the cost of redistribution through the tax system becomes an impediment to all redistribution, no less through the legal system than through taxation. At the top of the Laffer curve, the impediment becomes an absolute barrier. Attempts to supply additional redistribution through taxation or through the choice of legal rules are equally doomed to failure. But where there is no double distortion, the importance of redistribution through the legal system is enhanced, as it becomes the surviving route to redistribution when the other is blocked.

The story in this paper is about the range of applicability of the double distortion argument. The argument is valid when and in so far as redistribution through the choice of legal rules is like a second and relatively expensive income tax on a single tax base. The argument collapses when and in so far as redistribution is like a reassignment from rich to poor of pre-tax income or of strands of property rights. Most of the items on the list of redistributive laws at the beginning of this paper are in the latter category. Income-contingent fines and penalties are small part of redistributive law. Most of what proponents of redistributive legal rules would seem to have in mind is not endangered by the double distortion argument.

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