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ABSTRACT

Previous analyses of the cost of redistribution by a unitary government have focussed on the welfare losses of distorted labor supply choices. On the other hand, the analysis of redistribution by local governments in a federal system has emphasized the effect of the migration of taxpayers and transfer recipients in raising the cost (faced by state residents) of engaging in more redistribution. This paper combines both migration and labor supply effects to compute marginal redistribution costs at the state and federal level. Surprisingly, for a wide range of parameter values, states face lower redistribution costs than the national government because they are able to "export" some of the cost through lower federal tax revenue. The normative implication of the analysis is that any case for national redistribution policies must be based on benefit spillovers across state lines rather than on tax competition among state governments.

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I. Introduction

The question of the appropriate level of government to undertake income redistribution is receiving renewed attention from economists in the light of President Reagan's desire to devolve some income redistribution responsibilities from the federal government to the states. In a recent paper, Brown and Oates (1984) show, using a formal public choice model, that the possibility of migration between states leads to suboptimal transfer levels even when taxpayers care only about transfer recipients within their own states. With benefit spillovers across states, the argument for federal responsibility for redistribution is, presumably, even stronger.

Gramlich (1985) also argues that migration is strong enough to lead to suboptimal levels of transfers at the state level because states with low benefit levels will be able to "export" their poor, increasing the cost of redistribution to high-benefit states. Gramlich's conclusion is based on the empirical work in Gramlich and Laren (1984) which finds that the migration effect is "very strong".... "though only in the very long run." (1984, p. 510). The implicit argument is that migration raises the cost of redistribution at the state level compared to the federal level.[1]

Another line of inquiry has sought to uncover empirically the effect of state tax and expenditure policies on state income levels. Helms (1985), uses time series - cross section data on state expenditure and tax policies, and finds that, while spending on public services (schools, highways, etc.) increases personal income, increased state transfer payments financed by state taxes significantly reduce personal income. The cause of the reduction is presumably a combination of migration and incentive effects. Indeed, Helms' estimates indicate a very large response to transfer spending; one more dollar

of transfers reduces state personal income in the long run by $14.83. Helms concludes,

> "States which seek to devote substantial tax revenues to transfer payments will experience significantly reduced growth prospects, which limits the scope for redistribution at the state and local levels."

The purpose of this paper is to estimate the cost of a marginal increase in income redistribution for a state under various assumptions about migration and labor supply elasticities and to compare these costs to the marginal cost of redistribution at the federal level. The somewhat surprising result of the analysis is that states face lower costs of redistribution than the federal government in many plausible cases. The intuition behind this result is that part of the cost of redistribution can be "exported" to other states because federal tax revenues fall as the state's income falls. However, no conclusion can be made about the appropriate level of government to undertake income redistribution since that question depends also on the extent of benefit spillovers (how much are the residents of one state better off when the incomes of the poor in another state are raised?).

Section II of the paper introduces the model used to estimate marginal redistribution costs in the context of a single jurisduction. Section III extends the model to a federal system and estimates costs of state redistribution. Section IV concludes.

II. A Simple Model With One Jurisdiction

Before introducing the complication of a federal system of taxes and expenditures, it is useful to present the basic model used to compute the marginal cost of income redistribution. The model necessarily abstracts from many features of reality in order to be easily understood and manipulated. Thus, the results of the model should be considered more suggestive than conclusive.

Current net income of household i, including the effects of existing taxes and transfers, is denoted by Y_i, i = 1, n. Since we restrict our attention to incremental changes in redistribution financed by taxes on labor income alone, gross taxable income should be interpreted as labor earnings, $W_i L_i$, where W_i is the gross return to each unit of labor, L_i, supplied to the market. Although the global budget constraint facing the household is highly non-linear, due to the complex system of taxes and transfers now in place, it can be approximated locally by the linear constraint $Y_i = B_i + (1-t_i) W_i L_i$. Hence B_i is the "virtual income" of household i and t_i is its marginal tax rate. Small changes in the tax-transfer system can be represented by changes in the parameters of this linear budget constraint, which is the local approximation to the global non-linear budget constraint.

The response of labor supply, L_i, to small changes in t_i and B_i is parameterized as follows:

$$(1) \qquad W_i dL_i = -\varepsilon \frac{W_i L_i}{1-t_i} \, dt_i - C \, dB_i .$$

Equation (1) can be easily interpreted. The left hand side is the change in gross labor income induced by tax and transfer changes which, in this

partial equilibrium analysis, are assumed not to affect the gross return, W_i. The first term on the right is the response to changes in the marginal tax rate, t_i, as parameterized by ε , the uncompensated elasticity of supply of L_i with respect to net wages, $W_i(1-t_i)$. Note that for a given value of ε , the effect of dt_i is greater the larger is t_i because a given change in the tax rate implies a greater percentage change in net factor returns. The second term on the right hand side of (1) is the pure income effect of changes in B_i; the parameter C is the marginal propensity to consume leisure out of unearned income.

Suppose the government attempts to increase marginally the current amount of redistribution by imposing a uniform additional tax, dt, on labor incomes of all households to finance a uniform addition, dB, to every household's virtual income.[2] In other words, redistribution at the margin is undertaken by a demogrant financed by proportional taxes on labor income. Of course, the amount of the demogrant dB depends on additional tax revenue, by the marginal government budget constraint:

$$(2) \qquad ndB = \sum_{i=1}^{n} [(W_i L_i)dt + t_i W_i dL_i].$$

The left-hand side of (2) is total demogrants paid, or ndB. The right-hand side of (2) expresses the change in tax revenue as the sum of the additional tax rate, dt, applied to current taxable income, and the current marginal tax rate, t_i, applied to the change in factor income induced by the new policy. Second-order terms are omitted.

Substituting (2) into (1) and rearranging yields:

$$(3) \qquad \frac{dB}{dt} = \frac{[\sum_i W_i L_i \ (1 - \varepsilon t_i/1-t_i)]}{[n + C \sum_i t_i)]} \equiv \Omega \ .$$

Equation (3) is related to the slope of the Laffer curve; it gives the additional per capita transfer (dB) produced by an incremental tax (dt). When factor supplies are completely unresponsive to any economic variable ($c = \varepsilon = 0$), then $\frac{dB}{dt}$ is just average taxable income (the revenue produced by a 100% tax).

The marginal cost of redistribution can be thought of as the cost induced by these marginal policies per unit of benefit. One measure of the cost is the change in the total income of society, $\sum_i dY_i$, with the corresponding measure of the benefit being the income gained by the low income households. These are measures of market income gains and losses and do not include the welfare effects of changes in leisure. A better measure, therefore, compares the social cost (welfare loss) of redistribution to the welfare gained by households at the bottom. Both measures are presented below.

The change in the net income of any one household induced by the marginal policy changes is:

$$(4) \qquad dY_i = [\Omega(1 - (1-t_i) \ C) - W_i L_i \ (1+\varepsilon)] \ dt$$

where $\Omega \equiv dB/dt$, as given by (3). Equation (4) states that income of household i rises by the amount of the additional demogrant (Ωdt) but falls by the amount of additional taxes on the original income ($W_i L_i dt$) plus the change in after-tax income induced by the behavioral response to the policy change $[- (1-t_i) \ C \ \Omega \ - \varepsilon W_i L_i]dt$.

The change in the welfare of any one household, dZ_i, induced by the marginal policy changes is just the change in net transfers less the additional welfare cost (excess burden) of the marginal redistribution. Since this last term is the tax revenue lost by the compensated change in labor supply, we have

$$(5) \qquad dZ_i = dB_i - W_i L_i dt_i - t_i W_i dL_i + [-CW_i L_i t_i dt_i - \frac{\varepsilon t_i W_i L_i}{1-t_i} dt_i]$$

In (5), the first three terms are the change in net transfers while the terms in square brackets are the excess burden of the tax increase.[3]

The change in welfare for any household subject to the marginal redistribution policy of a demogrant financed by a proportional tax can be found by substituting $dB_i = dB = \Omega dt$, $dt_i = dt$, and equation (1) into (5):

$$(6) \qquad dZ_i = (\Omega - W_i L_i)(1+Ct_i)dt \ .$$

The effect of a marginal redistribution on the income and welfare is computed in two steps. First, the demogrant that can be financed by a marginal increse in taxation, dt, is calculated using (3). Then, that value of Ω is used to compute the impact on income and welfare of each household, according to (4) and (6). The information needed for these calculations is labor income, $W_i L_i$, and marginal tax rates, t_i, for each household as well as values of C and ε. The data set used is the March, 1976 Current Population Survey with imputations of transfers and taxes as described in Browning and Johnson (1984). Labor income is given directly for each household; marginal tax rates

have been computed by relating changes in after-tax, after-transfer income to changes in before-tax, before-transfer income by $1000 income brackets. Different marginal tax rates are computed for households with aged heads and for different household sizes. Thus, marginal tax rates include the effect of benefit reductions in transfer programs.

Reasonable values for ε and C must also be established. The uncompensated elasticity of labor supply, ε, is assumed to fall between -.2 and .4 with the negative elasticity sometimes estimated for men more than offset by the substantial positive wage elasticities estimated for women.[4] The marginal propensity to consume leisure, C, is a less familiar concept but can be related to the income elasticity of labor supply by

$$(7) \qquad C = -\gamma\,(1-\theta)$$

where γ is the pure income elasticity of labor supply and θ is the share of leisure in full income. If θ is roughly .5 then C is roughly half the income elasticity of labor supply. A range of C between 0 and .4 is chosen.[5] Recall that C is the fraction of an additional dollar of pure income spent on leisure.

To distill the changes in income and welfare of many thousands of households into an easily comprehensible form, the total welfare (or income) change for all households is divided by the welfare (or income) change for those households in the bottom quintile of the income distribution. This ratio assumes the value of zero when redistribution is a zero-sum game (that is, socially costless) and can be interpreted as the social cost of increasing the bottom quintile's welfare (or income) by one dollar.

Table 1 displays the two measures of the cost of redistribution faced by a single jurisdiction for a range of values of C and ε. Obviously the cost is zero when labor supply does not respond to changes in t or B (that is, the loss in income to the top four quintiles equals the gain to the lowest quintile.). As expected, the cost is quite sensitive to the labor supply parameters C and ε. Table 1 also shows that the marginal cost of redistribution can be substantial even when labor supply is fairly inelastic. To put the marginal costs of redistribution into perspective, consider Okun's (1975) vivid "leaky bucket" image. The cost of redistribution is the amount of water (welfare) which leaks from the bucket as it is carried from rich to poor. For labor supply parameters C = .1 and ε = .1, 43% of the (marginal) welfare disappears before it reaches the poor (.76/1.76 = 43%). The corresponding leakage in income terms is 65%.

III. Redistribution In A Federal System

We turn now to consider the costs of redistribution for both local and national governments in a federal system. For simplicity, state and local governments are not distinguished in the model; all local taxes and redistributive expenditures are attributed to the state. Another crucial assumption is that each state is "small" relative to the entire country in the sense that one state's taxing and spending policies have a negligable effect on the tax and spending policies of the national government. In other words, a change in federal revenue caused by one state's policies does not affect the well-being of the residents of that state. Finally, each state is assumed to take other states' behavior as given in making its choices; the Nash

equilbrium concept might be invoked to justify this assumption.[6]

The most important difference between state and federal taxation is that factors of production are more mobile between states than between countries. In fact, no international mobility is assumed. This is clearly reasonable for labor resources but less so for capital, since U.S. residents can invest their capital outside the country and avoid some taxes that fall on capital where it is used rather than where the recipient of its income lives (e.g., property taxes). Still, some taxes on capital income cannot be fully avoided by moving capital abroad (e.g., individual income tax). Given the complexity of the taxation of capital and ignorance about the elasticity of capital flows among taxing jurisdictions, it is probably best to focus on the taxation of labor income for the time being.

The mobility of labor between states is assumed to be a function of changes in after-tax (and transfer) incomes. Specifically, if a change in a state's tax or transfer policies, evaluated at the current level of labor supply, changes net income by X %, it will induce a change of η X % in the number of residents. Hence, η is the migration elasticity, which is assumed to characterize residents at all income levels. An increase in state taxes used to finance more redistribution will reduce the net income of high-income citizens ($X < 0$) and induce out-migration. The same policy enhances the incomes of low-income residents ($X > 0$) and so induces in-migration.

Most of the recent research on migration responses to redistribution focusses on the behavior of transfer recipients. Gramlich and Laren (1984) estimate the elasticity of transfer recipient populations with respect to benefits levels, with results for various models and data sets ranging from .11 to 1.7.[7] Blank (1984) has also estimated the migratory response of transfer recipients to changes in benefit levels. For example, she estimates

that, for New York, a 20-25% reduction in benefits implies an increase in the out-migration rate which would yield a 16% lower recipient population after 20 years. Since she does not consider in-migration, her estimates put an upper bound on the migration elasticity of about .75.

To incorporate migration responses into the analysis of redistribution costs at the state level, we must adjust the number of persons at each income level by the migratory response to marginal tax and transfer changes. The change in net incomes for household i at the previous level of labor supply, induced by changes in marginal tax rates, dt_i, and virtual income, dB_i, is:

$$X = -(W_i L_i)\, dt_i + dB_i .$$

The change in the number of people with income Y_i, dN_i, (normalizing $N_i = 1$), is given by

$$\eta = \frac{(dN_i)(Y_i)}{-W_i L_i dt_i + dB_i} \quad , \text{ or}$$

$$(8) \qquad dN_i = \eta\, (-b_i dt_i + dB_i/Y_i), \text{ where } b_i = W_i L_i / Y_i .$$

Without deductibility of state taxes from federal taxes (which will be introduced later on), the overall marginal tax rate, t_i, is just the sum of nominal federal and state rates, $t_i = t_{fi} + t_{si}$. Under the "small state" assumption, federal taxes and benefits do not respond to changes in one state's taxes or transfers, so

$$dt_i = dt_{si} \quad \text{and} \quad dB_i = dB_{si} .$$

Restricting states to imposing, on the margin, proportional taxes to finance demogrants, we have

$$dt_{si} = dt_s \qquad i = 1, n$$

$$dB_{si} = dB_s \qquad i = 1, n.$$

Now consider the marginal budget constraint faced by the state. The change in expenditures is the sum of additional benefits paid to existing residents, of whom there are n_s, plus (minus) the state's share of full benefits paid to new in-migrants (out-migrants), or:

$$(9) \qquad n_s dB_s + \sum_i B_{si} dN_i.$$

Again, second-order terms are neglected and summations are taken over all households in the state. The change in tax revenue is the sum of the changes due to the new tax rate, to labor supply responses of existing residents, and to migratory responses:

$$(10) \qquad dt_s \left(\sum_i W_i L_i\right) + \sum_i t_{si} \left[- \frac{\varepsilon W_i L_i}{1-t_i} dt_s - C dB_s\right] + \sum_i t_{si} W_i L_i dN_i .$$

Equating (9) and (10), and substituting (8) yields the Laffer slope relation for a state government:

$$(11) \qquad dB_s \left[n_s + \sum_i \frac{B_{si}\,\eta}{Y_i} + \sum_i t_{si}\,(C - b_i\eta)\right]$$

$$= dt_s \left[\sum_i W_i L_i + \sum_i B_{si}\, b_i\eta - \sum_i t_{si}\,(+b_i^2 Y_i\eta + \frac{\varepsilon W_i L_i}{1-t_i})\right].$$

The only additional data needed to calculate (11), beyond that used to compute redistribution costs in the single-government case in the previous section, is information on B_{si} and t_{si}, that portion of total taxes and benefits attributable to state (and local) governments. For purposes of these calculations it is assumed that state taxes and benefits are the same proportion, δ, of overall taxes and benefits, where δ is the share of state and local government spending in total government spending. Thus,

$$(12) \qquad t_{si} = \delta t_i \ , \quad B_{si} = \delta B_i \ .$$

B_i is computed as the vertical intercept of each household's linearized budget constraint:

$$B_i = Y_i - (1-t_i)W_i L_i \ .$$

Table 2 presents marginal redistribution costs for state governments computed using (11), (6) and (7) for a range of values of η, the migration elasticity, and some of the same labor supply parameters shown in Table 1.[8] To avoid confusing the issues of redistribution across states with the issue of redistribution within a state, the state's income distribution is assumed to be identical to that of the entire country. Hence, the data used are the national data used to construct Table 1.

Table 2 shows that marginal redistribution costs depend in the expected way on labor supply responses and migration elasticities. The welfare tradeoff is less sensitive to labor supply parameters than the market income tradeoff, as it was in the unitary government case of Table 1. The major surprise in Table 2 comes from comparing the cost to a state of redistributing income with the cost to a unitary government of doing the same (as in Table 1). When $\eta = 0$, one might think the costs should be the same since a state government appears to face the same constraints when migration is inelastic as the unitary government in Table 1. However, this is not the case. When labor earnings within the state fall as the state increases redistribution, federal revenue is reduced. Hence some of the costs of statewide redistribution can be "exported" outside the state by reducing tax revenues available to the federal government. According to the "small state" assumption, this reduction is federal tax revenue has a negligible effect on economic well-being within the state.

The national government's redistribution costs in a federal system should be equivalent to the unitary government's costs explored in the previous section. This is because, although redistribution by the federal government reduces labor incomes and hence state government revenues, that cost is internalized because citizens cannot move to avoid the costs of redistribution. When comparing Tables 1 and 2 to get an idea of the relative cost to the taxpayers of redistributing income at the state or federal level, it is clear that migration elasticities must be substantial for the migration effect to outweigh the tax-exporting effect and make redistribution more costly to the voters at the state level than at the federal level. For $\varepsilon = .1$, $C = .1$, the migration elasticity must exceed .5 to raise the state's welfare cost above the federal government's. At $\varepsilon = .2$, $C = .2$, the

threshold migration elasticity at which state and federal costs are equal rises to above 1.0. Thus, this indirect tax-exporting effect, which will naturally be greater the more responsive is labor supply, can easily outweigh the migration effect to keep marginal state redistribution costs below federal costs.

Deductibility

As we have seen, a significant amount of the excess burden of local taxes can be exported to other taxpayers. Not surprisingly, this result is strengthened when the deductibility of state and local taxes from the federal income tax is considered. To get a crude measure of the impact of deductibility, it was assumed that only the top two income quintiles could itemize on their federal tax returns. For them, an increase in the state tax rate by dt_s reduces their federal liability by $t_f \quad dt_s$, where t_f is the overall federal tax rate.[9] The change in the overall tax rate is: $dt = dt_s (1-t_f)$. Computing marginal redistribution costs for a state allowing for deductibility yields the estimates shown in Table 3. Clearly, deductibility dramatically reduces redistribution costs. With no labor supply responses ($C = 0, \varepsilon = 0$), redistribution becomes a positive-sum game whose costs are borne to a considerable extent by taxpayers outside the state. The key is, of course, that redistribution converts taxable income into tax-exempt income in the form of transfers. If state transfers were taxable at the federal level, then states could not directly export the costs of redistribution.

The numbers in Table 3 indicate a sizeable effect of deductibility in reducing state redistribution costs below the federal costs for the same labor

supply responses. The threshold migration elasticity at which state marginal costs equal federal marginal costs becomes very large (close to or greater than 2.5 for each parameter set listed). Therefore, with deductibility, it becomes extremely unlikely that states face higher marginal costs of redistribution than the federal government.

Another feature of the current federal system in the U.S. which affects the marginal cost of state redistribution is the availability of federal matching grants for redistributional expenditures. A large empirical literature exists which shows that these matching formulae do increase state expenditures on redistribution (see Moffitt (1984), for example). Hence, consideration of matching grants would reduce even further the state costs of redistribution found in Tables 2 and 3.

It is important to realize exactly what this result means. If there were no cross-state benefit externalities involved with income redistribution, then the lower cost faced by state voters would argue for the positive proposition that redistribution in a federal system (for example, in a Nash equilibrium among identical states) would exceed that in a comparable centralized fiscal system. However, since these cross-state spillovers almost certainly exist, the cost advantage of state redistribution may not be enough to offset the spillovers and redistribution at the sub-national level may still be suboptimal. The case for a national redistribution policy, however, must rest on the benefit spillovers and not on the migration of either recipients or taxpayers.

IV. Conclusion

This paper has examined the effect of additional income redistribution at the state and national level when both labor supply and location respond to economic incentives. Marginal redistribution is accomplished by a proportional tax on labor income which finances a per person demogrant, a policy which, in effect, rotates each individual's budget constraint through some breakeven point. Although it is possible that other redistributive policies might be more efficient than this one, it is unlikely that the paper's conclusions concerning the relative costs of state and national redistributive policies would be radically different. Another point that bears repeating is that the costs of redistribution computed here are the costs borne only by the residents of the redistributing jurisdiction, not true social costs.

To summarize, the purpose of this paper has been to compute the marginal costs of income redistribution by states in a federal system as a function of labor supply and migration responses. The major conclusions are that: (1) marginal costs for states are sensitive to labor supply elasticities as well as migration elasticities and (2) marginal state costs are likely to be less than federal costs, especially with deductibility and matching grants. Therefore, the case for a national redistributive policy must be based on benefit spillovers rather than on tax competition among localities.

Footnotes

1. However, Gramlich (1985) acknowledges that benefits would remain low in low-benefit states even if costs were reduced, since federal matching grants now in place effectively reduce the cost to states.
2. A proportional tax-cum-demogrant policy is studied both because of computational ease and because it approximates an expansion of the current U.S. redistributional system (see Browning and Johnson (1984, p. 180)). At first glance, it would appear that a more efficient policy would restrict the demogrant to the lowest income quintile. This, however, would require very high marginal tax rates, or a notch, on low income households. Also, note that the restriction that it be equal for all households preserves the kink-points of the piecewise linear budget constraint.
3. The compensated change in labor supply due to a tax change dt is the total effect less the income effect. The total effect is given by (1) as $(-\frac{\varepsilon L}{1-t}\, dt)$. The income effect is the additional tax revenue at the original labor supply (W L dt) times the pure income effect on labor supply (C/W) from equation (1).
4. Killingsworth's (1983) survey indicates roughly inelastic male elasticities but substantially positive female elasticities.
5. Hausman's (1981) very large estimates of income effects imply a value of C of about .8.
6. This assumption is common in this context; see Bergstrom, Blume and Varian (1986).

7. Gramlich and Larén argue that taxpayer migration is much less important since a change in redistribution has a much smaller impact on their incomes than on the incomes of the poor. While this is true, since the number of taxpayers is large relative to transfer recipients, the effect of taxpayer migration on Ω may be significant.
8. The measurement of costs and benefits is ambiguous when the population changes due to migration. The benefits here are the gain in welfare or income to the average person in the lowest quintile. The cost is the lost welfare or income to a resident who does not migrate, summed over all income classes.
9. This crude procedure overstates the effect of deductibility because even for itemizers state and local taxes are not deductable from some federal taxes (such as payroll taxes).

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Table 1: Marginal Welfare Cost of Redistribution in a Single Jurisdiction (Income Trade-Off in Parentheses)

Uncompensated Supply Elasticity

C \ ε	-.2	-.1	0	.1	.2	.3	.4
0	*	*	0 (0)	-.50 (-1.15)	-1.11 (-2.60)	-1.89 (-4.51)	-2.87 (-7.11)
.1	*	*	-.24 (-.60)	-.76 (-1.89)	-1.41 (-3.52)	-2.21 (-5.70)	-3.24 (-8.69)
.2	*	-.03 (-.10)	-.48 (-1.25)	-1.03 (-2.70)	-1.69 (-4.56)	-2.53 (-7.04)	-3.61 (-10.51)
.3	*	-.25 (-.70)	-.71 (-1.99)	-1.28 (-3.62)	-1.98 (-5.73)	-2.85 (-8.56)	-3.98 (-12.60)
.4	-.05 (-.18)	-.46 (-1.36)	-.95 (-2.81)	-1.54 (-4.64)	-2.26 (-7.04)	-3.17 (-10.32)	-4.36 (-15.06)

*These parameter combinations are ruled out because they imply positive pure substitution effects.

Note: Marginal cost is change in welfare (or income) of all households per $ of welfare (or income) gained by households in bottom quintile. Welfare change given by (5); income change by (4). C is the marginal propensity to consume leisure.

Table 2: Marginal Welfare Cost of Redistribution by States in a Federal System (Income Trade-off in Parentheses)

Labor Supply Response	Migration Elasticity (η) 0	.5	1.0	2.5
$\varepsilon = 0, C = 0$	0 (0)	-.42 (.42)	-.90 (-.90)	-3.01 (-3.01)
$\varepsilon = .1, C = .1$	-.28 (-1.30)	-.74 (-1.86)	-1.27 (-2.50)	-3.61 (-5.42)
$\varepsilon = .2, C = .2$	-.60 (-2.91)	-1.09 (-3.65)	-1.67 (-4.54)	-4.31 (-8.67)
$\varepsilon = .3, C = .3$	-.93 (-4.92)	-1.47 (-5.93)	-2.12 (-7.14)	-5.12 (-13.17)
$\varepsilon = .4, C = .4$	-1.29 (-7.49)	-1.89 (-8.88)	-2.61 (-10.62)	-6.06 (-19.77)
$\varepsilon = 0, C = .1$	-.08 (-.43)	-.50 (-.88)	-.99 (-1.40)	-3.09 (-3.68)
$\varepsilon = -.1, C = .3$	-.05 (-.49)	-.45 (.91)	-.90 (-1.40)	-2.82 (-3.49)

Notes: See Table 1.

Table 3: Marginal Welfare Cost of Redistribution by States in a Federal System with Deductability (Income Trade-Off in Parentheses)

Labor Supply Response	Migration Elasticity (η) 0	.5	1.0	2.5
$\varepsilon = 0, C = 0$	1.20 (1.20)	.95 (.95)	.68 (.68)	-.39 (-.39)
$\varepsilon = .1, C = .1$	.96 (.23)	.74 (-.09)	.44 (-.45)	-.71 (-1.88)
$\varepsilon = .2, C = .2$	.79 (-.95)	.51 (-1.37)	.19 (-1.84)	-1.06 (-3.77)
$\varepsilon = .3, C = .3$	.57 (-2.40)	.27 (-2.95)	-.07 (-3.59)	-1.44 (-6.25)
$\varepsilon = .4, C = .4$	.33 (-4.22)	.01 (-4.96)	-.36 (-5.82)	-1.86 (-9.57)
$\varepsilon = 0, C = .1$	1.11 (.85)	.87 (.59)	.60 (.29)	-.47 (-.86)
$\varepsilon = -.1, C = .3$	1.07 (.72)	.85 (.47)	.59 (.19)	-.41 (-.89)

Notes: See Table 1. A positive number means an increase in total income with extra redistribution.