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The Distortionary Effects of Subsidies for Charity in a Federal System

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Abstract

Prevailing accounts of the efficiency of subsidies for the nonprofit sector presume that the only alternative source of public goods is a single sovereign, controlled by a single median voter. Tiebout sorting, however, also provides citizens with alternative bundles of public goods. When these two systems are in place simultaneously, they may interact. We present a model in which subsidies may affect not only the choice between nonprofit and government, but also the choice among governments. Because nonprofits allow citizens to obtain alternative bundles of public goods without relocation, subsidies for the nonprofit sector alter incentives to relocate. We show that this distortion in the market for local government may either increase or decrease welfare, depending on the nature and geographical scope of the good provided. As a result, for some goods it is ambiguous whether subsidies for charity on net increase social welfare. We also consider extensions involving simultaneous provision of similar goods of differing quality.

JEL Codes: H11, H77, K29, K34, L33

Economic accounts of the nonprofit sector have to date largely neglected its relationship to sub-national governments. In the standard model developed by Burton Weisbrod (1975), and elaborated on by Hochman and Rodgers (1986), Hall and Colombo (1995), and Rose-Ackerman (1996), subsidies for charity allow for the production of public goods beyond those preferred by the median voter. This "supra-median demand" theory, as we will call it, assumes that voters have no alternative government to which they could turn for production of their preferred good. That assumption is obviously untrue in a federation, at least as to goods that could plausibly be produced by sub-national governments.[1] Indeed, under perfect Tiebout sorting there is no gap between supply of and demand for public goods. Weisbrod acknowledges this counter-argument, but dismisses it in one sentence with the assertion that frictions on relocation will always leave some residual unmet demand. (1975:178)

But the presence of frictions does not absolutely foreclose relocation as a means for satisfying demand for a public good that is unmet locally; frictions merely increase the cost of obtaining any given good. Thus, in a federated system relocation and charitable formation stand side by side as alternative, and potentially competing, mechanisms for satisfying supra-median demand in any given sub-national jurisdiction.

Other commentators have observed that private associations may compete with local governments to provide public or club goods. For example, Ellickson (1982) identifies residential associations as potential substitutes for local government. There is also a substantial empirical literature devoted to measuring the extent to which expenditures in one sector may crowd out expenditures by the other, co-located, sector. (See, e.g., Becker & Lindsay (1994), Gruber & Hungerman (2007), Cheung (2008)).

There has not yet been any examination, however, into whether the possibility of private substitutes affects agents' choice of jurisdiction, nor into whether any such effects are normatively desirable. In particular, in the United States many forms of charitable enterprise are tax-favored through the deduction for contributions to eligible entities. (I.R.C. §§ 170, 501(c)(3)). If subsidies create significant inefficiencies in the market for providers of public goods, that might offer reasons to reevaluate, or at a minimum to consider redesign of, the legal regime providing subsidies for charitable formation.

The model developed here suggests that, in fact, subsidies for charity distort the market for local government. As noted, there is substantial evidence that a subsidy for charity affects a consumer's choice between charity and government. More surprising is the possibility that subsidies for charity may alter a consumer's choice between two rival governments. Because charitable production can substitute for government production, a consumer who is unhappy with the level or quality of public goods in jurisdiction one need not move, as Tiebout predicts; she can instead remain and supplement the inadequate government production with private charity. Subsidies exaggerate this effect by increasing the likelihood that charitable production will be cheaper than relocation.[2]

Whether these distortions reduce welfare depends on the nature of the particular public good to be produced by a given charity. Welfare is most likely to be reduced in the case in which production of the public good also produces some negative externality, and that externality could be mitigated if the site for production of the good were moved elsewhere.

The predictions of the model are also sensitive to how the purposes of the subsidy for charity are specified. Weisbrod assumes that subsidies are intended to satisfy unmet

demand for quantity: to open an opera house where none stands. Others assume that a subsidy intended to spur increased quality operates identically. (E.g., Gruber 2010). But competition over quality implies that there is some possibility for crowd-out in either direction. Once crowd-out is taken into account, the model predicts a lower likelihood that subsidies will reduce welfare.

These predictions have potential implications for the design and implementation of any nonprofit-sector subsidies. First, the crowd-out result implies that encouraging competition over quality between private associations and government might be a more desirable goal for the subsidy than the more expansive traditional view.[3] Also, given that some but not all organizations will face crowd-out, the model provides an additional reason to provide for multiple tiers of subsidy, rather than simply tying the subsidy to the donor's marginal tax rate, as is the case under present law. (I.R.C. § 170). Several other implications are developed at length elsewhere. (Galle 2010, 2011).

1. The Basic Model

In a federation, individuals who are disappointed by the median voter's failure to provide their preferred level of public good may move to another jurisdiction that is already providing that quantity of good, or may decide instead to form a charity in their present jurisdiction. To get a sense of what effects the charitable contribution deduction has on this decision, let us begin with an individual's decision about whether to purchase a given public good.

If the median voter is unwilling to pay for additional units, g, of a public good, an individual i who prefers more must bear its full cost, c.[4] Conventionally, consumers

purchase a good until the marginal utility from consuming an additional unit, $\frac{\partial u_i}{\partial g}$, is equal to its marginal cost, $\frac{\partial c}{\partial g}$. Where there are positive externalities from production of the good, as in the case of the standard public good, society would prefer for *i* to purchase more of that good, until total marginal utility all citizens derive from the good equals marginal cost,

$$\frac{\partial U}{\partial g} = \qquad (1)$$

This is the traditional explanation for the subsidy: it is designed to reduce *i*'s effective cost to below her perceived gain, so that she consumes more of the good. (E.g., Hochman & Rogers 1986, Steurle & Sullivan 1995.). Ideally, the subsidy changes *i*'s net costs, so that her discounted marginal cost is at or just below marginal utility:

$$(1-\alpha) \quad + \frac{\alpha \frac{\partial c}{\partial g}}{p} + \frac{\alpha\delta \frac{\partial c}{\partial g}}{p} \leq \qquad (2)$$

where α is the percentage of the subsidy provided for charitable contributions, and is set such that the product is equal to the marginal utility of an additional unit for other agents (Cornes & Sandler 1996: 74-76), δ is the deadweight loss resulting from the increased federal tax needed to pay for the subsidy, and *p* is the total national population paying the subsidy.[5]

Contrary to the assumptions underlying equation (2), however, charity can also *reduce* others' welfare without directly impacting the consumer of the charitable good.

Kaplow (2008) argues that charity might distort labor/leisure decisions. Redistributive charities, such as soup kitchens and free health care, can induce moral hazard, while an abundance of recreational or leisure charities might make leisure relatively more attractive than work. McCormack (2010) also notes that individuals can have personal or ideological objections to the production of some public goods.

Taking these possibilities into account, the net social gain or loss from *i*'s decision to produce another unit of the public good herself can be given as:

$$\frac{\partial U}{\partial g} - \frac{\partial c}{\partial g} + \frac{\partial e}{\partial g} \qquad (3)$$

where U represents the total utilities (either positive *or negative*) derived by the citizens of jurisdiction one, including *i*, and e is externalities accruing outside jurisdiction one.

We add to Kaplow and McCormack's accounts by noting that, crucially, negative externalities that would arise in jurisdiction one if the good were produced there may not arise at all if the good were instead produced in jurisdiction two. Consider a homeless shelter, which might give material succor or emotional satisfaction to some, but also annoy NIMBY-minded neighbors. Those who view a town with an additional shelter as fairer might be willing to, but prefer not to, move in order to effect justice. If they relocated to a like-minded town, those who object would no longer suffer the disutility of living near a shelter. But the shelter-builders have no reason to depart; they do not bear any of the unhappiness of their neighbors.

More prosaically, suppose that the median voter, after applying cost-benefit analysis, determines that the current level of wildlife-protection enforcement is optimal; any greater amounts, she deems, will not be worth the cost of deterring possible business

investments. Now suppose some citizens place a higher value on additional increments of wildlife protection, and form a "save the whales" charity to identify and picket offending local business. Here again, the ideal result in terms of social welfare would be for those who favor more wildlife protection to relocate to a region with more stringent wildlife-protection laws. Because they are indifferent to the (negative) effects of their charitable works on other voters, however, they do not go.

The possibility that moving may eliminate negative externalities is significant because moving to a town where the desired level of the public good is already produced may be an alternative to purchasing in jurisdiction one. Where that alternative exists, if *i* moves, she must pay moving costs,[6] and now will be subject to a proportionate share of the tax needed to pay for the good (as well as bearing some of the deadweight loss of the resulting tax), such that the cost to her is:

$$m + \frac{\frac{\partial c}{\partial g}}{p_2} + \frac{\frac{\partial c}{\partial g}\delta_2}{p_2} \qquad (4)$$

where m is the cost of moving, δ_2 is jurisdiction two's deadweight loss resulting from collecting taxes in the amount c, and p_2 is the population of jurisdiction two.[7]

Thus, in the absence of a subsidy, the individual moves where:

$$m + \quad + \quad \leq \frac{\partial c}{\partial g} \quad AND \quad m + \quad + \quad \frac{\partial u_i}{\partial g} \qquad (5)$$

Under standard assumptions, the marginal utility curve will always be above the marginal cost curve at any point prior to equilibrium, and so equation (5) implies that *i* will move when the moving costs curve cuts the marginal cost curve.

If *i* moves, net social welfare is simply:[8]

$$\frac{\partial u_i}{\partial g} - m \qquad (6)$$

Therefore the net social gain or loss from *i*'s decision to stay rather than move when moving costs and marginal cost are equal is (3) minus (6):

$$\frac{\partial U}{\partial g} - \frac{\partial c}{\partial g} + \frac{\partial e}{\partial g} - (\quad - m) =$$

$$- \frac{\partial u_I}{\partial g} + \qquad (7)$$

In general, equation (7) is ambiguous whether staying would increase or decrease social welfare. If the welfare effects of another unit of charity in j_1 (other than the effects on *i*) are negative, staying reduces welfare. If so, *i*'s decision to move might actually make society better off: by moving, *i* removes the negative externalities without reducing her own welfare. [9]

The importance of moving to the welfare effects of a charity suggests that any changes in *i*'s decision to move will also affect total utility. As we will now show, subsidies for charity diminish the likelihood that any given consumer *i* will relocate; this effect reduces welfare when moving would increase it, and vice-versa.

When there is a federal subsidy for charity, individuals are less likely to move because moving entails forgoing the benefit of the subsidy. Recall from equation (2) that subsidies change the cost of purchasing an additional unit in j_1 to $(1-\alpha)\frac{\partial c}{\partial g} + \frac{\alpha\frac{\partial c}{\partial g}}{p} + \frac{\alpha\delta\frac{\partial c}{\partial g}}{p}$. Substituting this new discounted cost into equation (5) yields the prediction that i will move when:

$$m + \frac{\frac{\partial c}{\partial g}}{p_2} + \frac{\frac{\partial c}{\partial g}\delta_2}{p_2} \leq (1- \quad) \quad + \frac{\alpha\frac{\partial c}{\partial g}}{p} + \frac{\alpha\delta\frac{\partial c}{\partial g}}{p} \tag{8}$$

More simply, when the population p is very large relative to the marginal cost, i moves when the cost of moving intersects the discounted marginal cost curve:

$$m + \quad + \quad (1- \quad) \tag{9}$$

Thus, the effect of the subsidy is to change behavior where:

$$(1- \quad) \quad < m + \quad + \quad < \tag{10}$$

That is, whereas i would ordinarily have moved any time that moving were below marginal cost, in the presence of the subsidy she now will stay in jurisdiction one when the cost of moving is below marginal cost but still greater than $(1- \quad)$ times the marginal cost.[10]

The larger the subsidy amount α, the greater the likelihood that *i* will stay rather than relocate. This change is the key distortive effect of the subsidy, as illustrated in figure 1.

<fig. 1>

In the absence of subsidy, *i* relocates when her moving costs intersect the marginal cost line, at A, which corresponds to point C on her marginal utility curve: well before equilibrium. In the presence of the subsidy, however, the moving costs curve does not intersect marginal cost until point B, corresponding to point D on the marginal utility curve: well past the original, unsubsidized, equilibrium. So subsidies shift the moving point, in effect increasing the amount of the public good produced in jurisdiction one.

What are the welfare effects of this distortion? Because the subsidy amount must be paid for through taxes, the welfare resulting from a decision to stay differs from that given by equation (7). We have to add a new term to (3) to account for the deadweight costs resulting from the tax hike,[11] so if *i* moves when $m = (1- \quad) \frac{\partial c}{\partial g}$, then (3) minus (6) is:

$$(\frac{\partial U}{\partial g} - (1- \quad) \quad - \quad - \quad \delta \quad + \frac{\partial e}{\partial g}) - (\frac{\partial u_i}{\partial g} - m) =$$

$$- \quad - \quad - \quad + \qquad (11)$$

Or, in English, the result is the net welfare from the marginal unit for everyone in j_1 but *i*, less the cost of paying for *i*'s subsidy, plus any extra-jurisdictional effects.

But this represents only the welfare effects of *i*'s decision to purchase a single unit of the public good. When *i* moves, she also no longer purchases in j_1 any of the additional

units, all the way up to the equilibrium point, that she would have purchased had she not moved. So the full welfare effect of a move is loss of the summation of all these forgone purchases between the point where *i* moves and the equilibrium. When there is no subsidy, that result is:[12]

$$-1\int_{m=\frac{\partial c}{\partial g}}^{\frac{\partial c}{\partial g}=\frac{\partial u_I}{\partial g}} \left(\frac{\partial U}{\partial g} - \frac{\partial u_i}{\partial g} + \frac{\partial e}{\partial g}\right) dg \qquad (12)$$

By comparison, when there is a subsidy, the result is:

$$-1\int_{m=(1-\alpha)\frac{\partial c}{\partial g}}^{\frac{\partial c}{\partial g}=\frac{\partial u_I}{\partial g}} \left(\quad - \quad - \alpha \frac{\partial c}{\partial g} - \quad \delta \quad + \frac{\partial e}{\partial g}\right) dg \qquad (13)$$

These integrals are somewhat intractable, but the intuition they represent is straightforward, as illustrated in figure 2.

<fig. 2>

The region summed under the subsidy in equation (13) is mathematically similar to the region summed in equation (12) but is shifted rightward. In figure 2, social surplus from production of the good is represented by the rough triangle formed by the marginal utility and net social cost curves, with its vertex at point B and extending left to the y-axis; social loss from excess production of the good is represented by the triangle BCH. In the absence of a subsidy, *i* moves when her marginal utility is at D, where moving costs intersect her marginal cost curve. Since she moves, no additional units of the good are produced in jurisdiction one, resulting in the loss of the surplus represented by the triangle BFJ.[13] But the relocation also prevents *i* from consuming the incremental units between B and A on her marginal utility curve, avoiding the social overproduction, with welfare

consequences represented by the similarly-sized triangle ABH. So on net, the welfare effects of the move are unclear. In contrast, under a subsidy, *i* does not relocate until her marginal utility reaches G, the point corresponding to the point at which moving and discounted marginal costs are equal. This permits additional overproduction, resulting in the loss triangle BGI. That triangle is obviously much larger than the surplus BFJ, so on net the subsidy is clearly welfare-reducing: it has permitted more losses than it has prevented gains.[14]

More generally, the welfare effects of a subsidy depend on the consequences of a rightward shift in the region affected by a move. If the line running upwards from point E, the moving point under a subsidy, intersects the marginal utility curve in a region where there is still net social surplus, then the subsidy increases welfare: it allows additional production of welfare-increasing public goods. If instead (as in figure 2) point E corresponds to a region in which social welfare is decreasing, then the subsidy is likely to reduce welfare: it allows additional production of welfare-reducing public goods. This effect may be counter-balanced by any surplus that was also created as a result of the rightward shift.

Equation (13) also implies that gains and losses are generally magnified by the size of the subsidy. The larger is α, the greater the shift rightwards, and hence the larger the change relative to equation (12). Moreover, equation (13) is somewhat more likely to produce a positive result (implying welfare losses from a subsidy) because of the added costs of the subsidy and its accompanying deadweight loss.

Put more simply, subsidies for charity may well reduce welfare. Where the welfare from *i*'s decision to stay is negative, society would be better off if she moved. But the subsidy discourages *i* from moving, and the larger the subsidy, the more likely that result.

Of course, the model captures only the welfare effects of the subsidy on a single individual; to determine whether subsidies for any given public good are efficient, we must sum the results across all individuals who can claim the subsidy. In making this assessment, the cumulative results of equation (13) are not the only, and may not even be the most important, input. Suppose, for example, that the subsidy level cannot be set to match perfectly the optimal level of the good, even exclusive of negative externalities.[15] Indeed, in the United States the subsidy amount is not tailored to either donor preferences or to the form of public good provided, but instead determined entirely by the donor's marginal tax rate and other largely irrelevant factors. (Gergen 1988). For any given subsidy level, then, there will exist some donors for whom $\frac{\partial u_i}{\partial g} > \frac{\partial c}{\partial g}$; however, because the subsidy is not tailored, these donors can still receive the subsidy, increasing deadweight losses with no corresponding increase in production of the good. (Sherlock & Gravelle 2009). Our model offers no new insights into the effects of this excess subsidy, but it is an important factor when comparing the relative welfare effects of subsidies under crowd-out and no crowd-out, as we now will show.

2. Crowd-Out Considered

The model thus far assumes, as Weisbrod does, that the goal of charity is to provide public goods that the relevant government does not. In actuality, however, charity and government may overlap. Casual observation and introspection suggest that donors may

contribute to charity in order to obtain superior quality of a public good already offered by government. Broadening the goals of charity in this way also affects the predictions of our model.

In particular, allowing for within-jurisdiction competition over quality introduces the possibility of crowd-out. If the reason the donor gives to charity is simply because she is dissatisfied with the *quality* of the available good, she is in effect paying for it twice: once through her tax dollars, and again through her donation. Depending on the demand function for higher-quality goods, government provision of low-quality goods may crowd out charitable provision of superior alternatives. (Peltzman 1973).[16]

Initially, it is unclear whether crowd-out affects the welfare losses from distorting *i*'s choice of jurisdiction. As before, the losses are from lost opportunities to eliminate negative externalities. It is not evident that negative externalities are any more or less likely to result from improvements in quality than from an increment in the quantity of a public good.

Nor is it readily apparent whether welfare-reducing distortions of the decision to relocate are more or less likely when costs are increased to account for the proportionate tax price of the redundant government-provided good. Where there is crowd-out, *i*'s costs of achieving utility u_i^*, her utility from an incrementally higher-quality unit of that public good, become:

$$\frac{\partial c}{\partial g} + \frac{c}{p_1} + \frac{c\delta_1}{p_1} \qquad (14)$$

That is, *i* must now pay both the cost of producing the good as well as her proportional share of the tax cost of the redundant good, as well as bearing the deadweight

losses from that tax cost.[17] As a result, a subsidy now will change *i*'s decision to move when:

$$(1-\alpha)\frac{\partial c}{\partial g} + \frac{c}{p_1} + \frac{c\delta_1}{p_1} < m + \frac{\frac{\partial c}{\partial g}}{p_2} + \frac{\frac{\partial c}{\partial g}\delta_2}{p_2} < \quad + \quad + \quad .$$

This implies two offsetting effects. On the one hand, it is more likely that *m* will be less than the increased cost of staying given by equation (14). But it is also more likely that *m* will no longer exceed the increased *discounted* cost of staying, (1-α) + + . The gap between the two remains the same size, so without knowing how *m* is distributed we cannot know whether the shift upwards in cost affects the likelihood of *m* falling into that space.

In contrast, crowd-out does unambiguously reduce deadweight losses associated with inflexible subsidies. Recall that where $u_i^* >$, any subsidy is strictly welfare-reducing: money spent on donors who would have bought the good anyway reduces the treasury-efficiency of the subsidy, since each dollar of subsidy produces $0 of *additional* public good. In general, though, the level of subsidy must be set in the abstract, before the government can observe the exact demand function of its citizens.[18] So there is always a risk that any given subsidy level will be wasted; when this risk is summed across the population, the waste contributes to a net negative effect of subsidizing a given good.

Waste is smaller for goods subject to crowd-out because of the greater need for subsidies. There will be fewer citizens for whom > + + than for whom

$> \frac{\partial c}{\partial g}$. At any given subsidy level, then, waste is smaller, so that when the welfare effects of that combination of subsidy and good are summed across the population the result is more likely positive overall.[19]

Therefore, although in general the exact welfare effects of a subsidy remain hard to predict, the double-payment problem at least makes it more likely that the subsidy is efficient. While charity is possibly over-produced in Weisbrod's scenario, here crowd-out makes charity more likely under-produced, so that the deduction brings total output closer to the social optimum.

However, this second-best story is harder to tell in the case where potential donors all reside in the same jurisdiction. In that event, the donors can avoid double payment by the simple expedient of banding together to vote or lobby to cut spending on the low-quality government service. (Becker & Lindsay 1994, Gillette 2009). Although they will face the ubiquitous free-rider problem in their efforts, the subsidy greatly aids their cause by forming charities, which allow donors easily to identify others who are similarly situated, transact face-to-face with those others at charity events, and hire staff who can coordinate their efforts. (Tollison 1982).

In addition, co-located consumers can avoid coordination problems that might face a coalition spanning multiple jurisdictions. Consider, for example, a private school open to students from several neighboring districts. In order for contributors to the private school to lower the public education costs of all of them, they must deliver political rents to several separate groups of politicians. Unless all lobbying is simultaneous, contributors who have already obtained low school taxes might refuse to aid others who have not; anticipating this, none of the contributors may assist one another.

In short, co-located consumers can much more easily combine their donation with a vote to lower their taxes. For example, Becker & Lindsay (1994) find evidence that charitable giving to education reduces local government education spending. In these instances where charity "crowds out" government, the deduction may again over-produce charity.

This analysis implies that the amount or availability of subsidies for a charity should depend on where its supporters reside. Admittedly, a rule that makes the subsidy vary depending on where donors live may seem hard to administer, but this obstacle is perhaps superable, as we will describe.

3. Implications

Our model here suggests that the traditional efficiency rationale for charitable subsidies is incomplete.[20] Increased charitable production of public goods is most likely to increase social welfare in those cases in which the geographic distortions we have outlined do not arise. For example, as we have noted, the prediction of welfare-reducing distortions is in significant measure dependant on the assumption that the good produces geographically-restricted negative externalities. Goods for which this is not true, such as consumer protection (where, depending on incidence, harms may be distributed nationally across the shareholders of affected firms), will be better candidates for subsidy than the class of all public goods.

Similarly, the distortion does not arise in the case of goods for which there is no market for local government production, such as for goods that are national in scope. Public goods that create significant externalities for other jurisdictions --- the e term in the model --- may be impossible to obtain by moving. Municipalities might under-produce public goods

benefitting a wide geographical area, since each individual town has incentives to free ride on others' efforts.[21] (Ellickson 1982). It would be surprising, for example, to see one city try to save the world's whales.[22] The deduction is less likely to reduce social welfare for these kinds of national-in-scope projects, because charities are less likely to have any sub-national government competition. So in that scenario the world looks more like Weisbrod's model in which there are only two possible sources of a public good, a government and a charity.

In other cases a public good may still warrant subsidy, but to a lesser extent than other goods. As we show in part 2, a subsidy that is large enough to overcome free riding when the marginal cost of a good is $\frac{\partial c}{\partial g} + \frac{c}{p_1} + \frac{c\delta_1}{p_1}$ will often be inefficiently high for goods whose marginal cost is only . Government could grant a lower subsidy to entities that do not face double-payment, avoiding the over-subsidization problem. A lower subsidy amount also mitigates the distortionary impact of the subsidy. The distortion, again, arises when $(1-\alpha)$ + + $< m + \frac{\frac{\partial c}{\partial g}}{p_2} + \frac{\frac{\partial c}{\partial g}\delta_2}{p_2} <$ + + . A smaller subsidy α will reduce the size of this region.

It is difficult to imagine an administrable system in which an organization's subsidy depends on where its donors reside, but the nature of the good provided by the charity can be an effective proxy. For local public goods, such as trash collection and parks, we can be fairly confident that the consumers are necessarily bunched closely together. Other services are inherently non-local, such as theoretical scientific research or endangered-species conservation; in all likelihood the funders of such goods are widely scattered and

cannot effectively offset their charitable spending with reductions in local taxes. Yet other services are somewhere in between, combining local benefits with additional spillovers that diffuse more widely, such as churches, schools, and public health providers.

Furthermore, putting aside location, having flexible subsidy amounts allows a more efficient rate of subsidization. Subsidies should be set at the amount that induces the optimal amount of charity, but currently the size of subsidy depends almost entirely on the donor's marginal tax rate, which has no obvious relation to optimal giving. If the subsidizing government (for example, the U.S. Treasury Department) can adjust the multiplier for each tier of subsidy, the subsidy rate can be decoupled from the marginal tax rate.

Of course, it is well known that established subsidies for charity fall short of optimal in their failure to vary the subsidy amount with the social benefits of the subsidized good. (E.g., Reich et al. 2009). But commentators have rejected any move towards an individualized assessment of any particular charity. (Bittker & Rahdert 1976, Hall & Colombo 1991, Fleishman 2007:22-24). In general, the claim is that allowing the government to decide which charities may receive the subsidy would leave novel, unpopular, or minority viewpoints unfunded. Others suggest that majority control would fail to reveal preferences of voters with supra-majority tastes for public goods. In both cases, the assumption is that any bureaucratic determination of the relative merits of charity would merely reflect officials' preferences.

Even assuming that this assumption is correct, the problem of bureaucratic bias is mitigated in the case of our proposal here.[23] The geographic locus of a particular public good is a relatively objective question that can be readily answered in at least some

instances. If bias is a serious concern, lower subsidies can be reserved only for those organizations that are obviously free from crowd-out.

4. Conclusion

We have shown here that the leading normative justification for subsidized charity inadequately explains that subsidy. The claim in the literature is that subsidies are welfare-increasing. We show that, once interactions with local government are taken into account, in many cases it is ambiguous whether a subsidy would increase social welfare. At best, then, the traditional justification is fully persuasive only in those instances, sketched here, in which the welfare-reducing aspects of the subsidy are mitigated. For example, our analysis implies that the traditional rationale cannot explain subsidies for universities, hospitals, or social-service organizations, all of which can create localized negative externalities and are not fully subject to crowd-out.

Accordingly, our analysis can be read to suggest that the subsidy should be available for a dramatically narrower class of organizations than are currently eligible to claim it. Given that the subsidy bears an estimated tax cost of $50 billion annually in the United States, and that eligible recipients account for on the order of one-seventh of U.S. GDP, we think this is a significant result.

We note, though, that once nonprofits and local government are considered together as substitutes, new justifications for the subsidy emerge. For example, the threat of nonprofit production of public goods might be desirable when Tiebout sorting is implausible, such as in conditions of high exit costs. In that case, nonprofit production serves the competition function that is usually attributed to federalism. We analyze these possibilities at greater length elsewhere. (Galle 2011).

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Figures

Figure 1

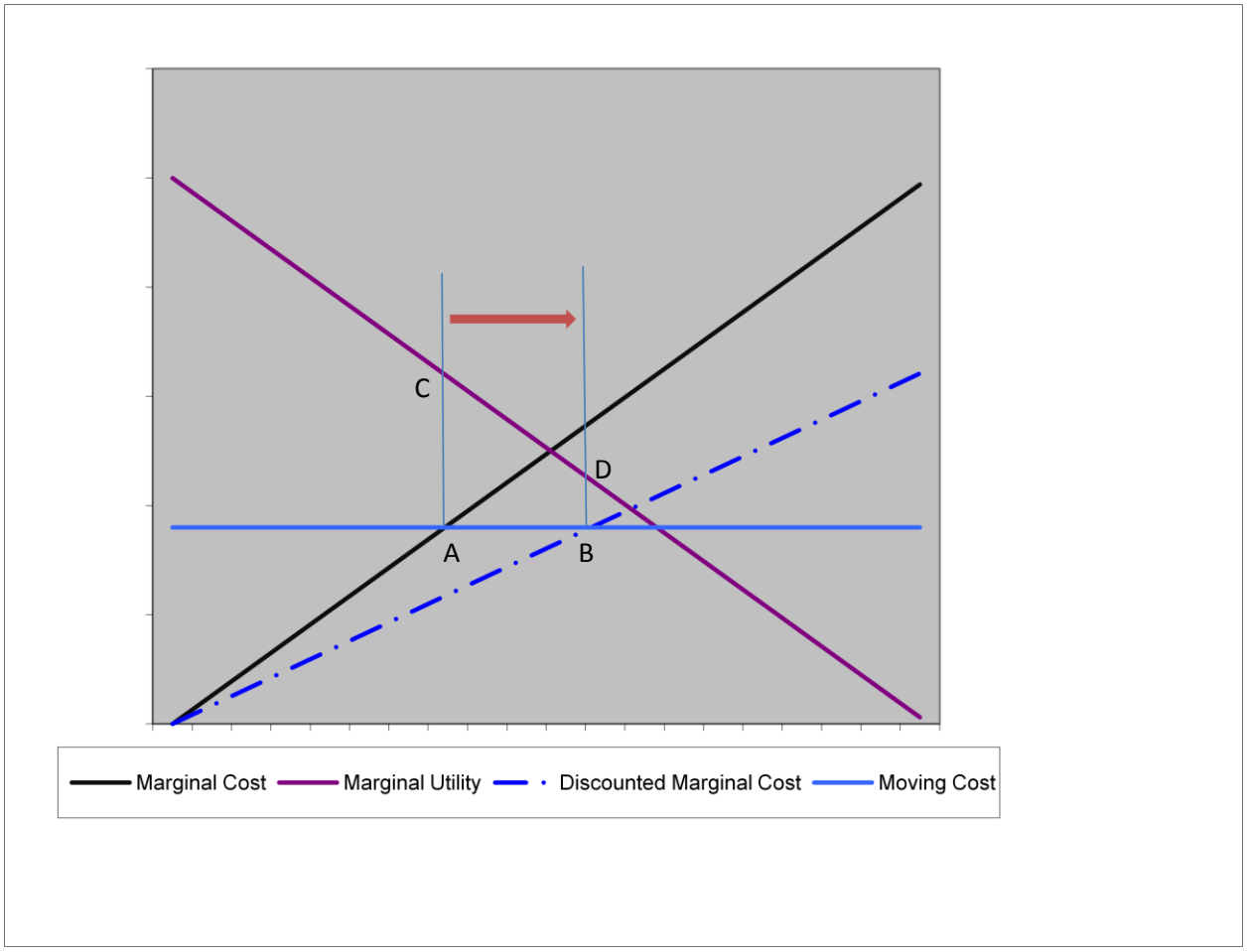
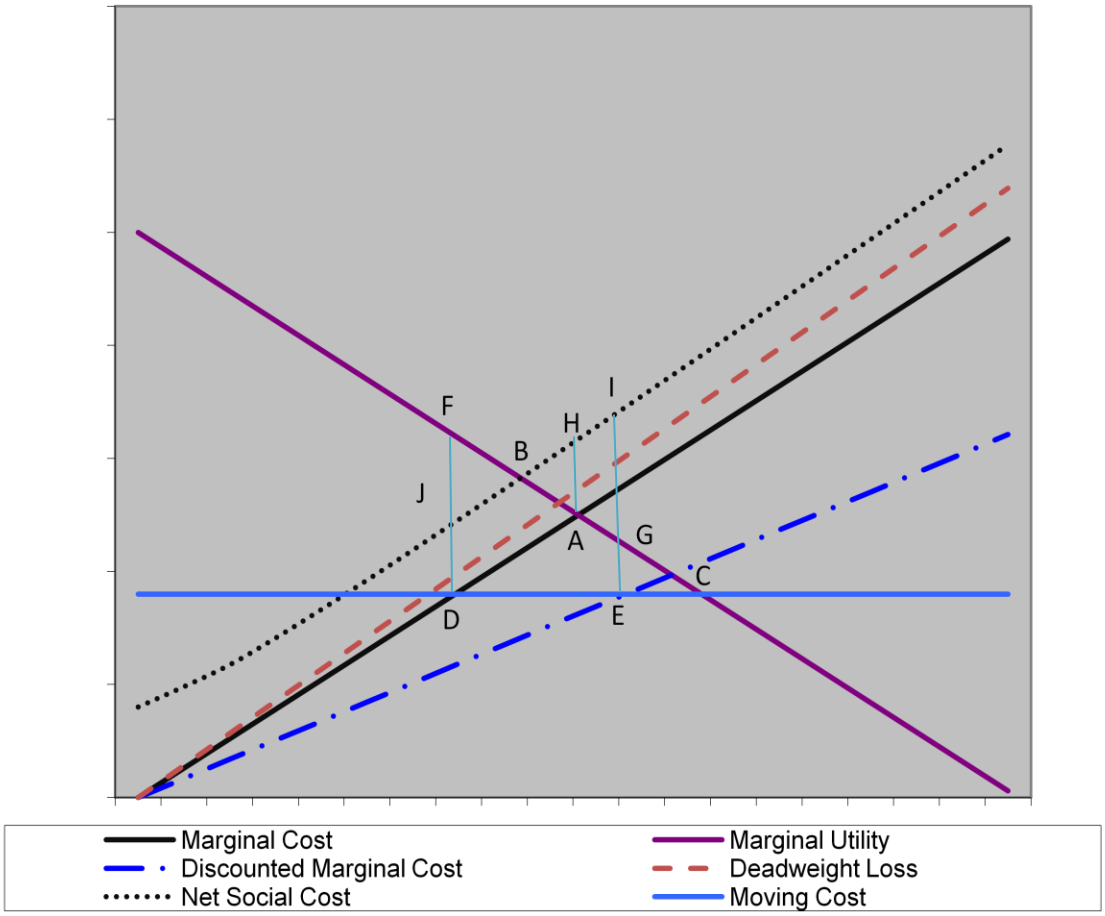


Figure 2



[1] We leave aside here questions about the usefulness of median voter theory generally; for more detailed examination of how criticisms of median voter theory affect Weisbrod's rationale, see Krashinsky 1986, Kingma 1997, and Galle 2011.

[2] We emphasize that the point is that subsidies make charity more affordable relative to the costs of relocation, and not as compared to the costs of local government. Local government, too, is subsidized in some instances, such as for U.S. taxpayers not subject to the alternative minimum tax. (I.R.C. § 164). But this additional subsidy has only minimal effects on our model: § 164 changes the amount of public goods demanded by the median voter, but we simply take the median voter's position as exogenously given.

[3] These suggestions assume that the federal structure is constitutionally mandated while subsidies for charity are optional. If, as might be plausible, there is some flexibility in the design of the federal architecture, then additional policy possibilities are opened.

[4] The median voter would be willing to produce another unit of the good where the marginal utility of that unit is $U_m' < \frac{\frac{\partial c}{\partial g} + \frac{\partial c}{\partial g}\delta_1}{p_1}$. In that case, *i*'s cost would also be only her proportional share of the tax cost of the good. However, by assumption the median voter's marginal utility is lower than his proportional tax cost – otherwise he would have voted to impose taxes to produce the good. That leaves *i* to pay the full cost on her own.

[5] This form of the equation assumes, without loss of generality, that the subsidy is paid out of the national treasury (as is the case with U.S. federal subsidies for charity under I.R.C. § 170), rather than by jurisdiction one alone. $\frac{\partial u_i}{\partial g} \leq \frac{\partial c}{\partial g}$ is the ideal case because any subsidy is strictly welfare-decreasing when $\frac{\partial u_i}{\partial g} >$. In that latter instance, *i* would have purchased the good anyway, but society has incurred some deadweight losses to provide her with a subsidy. (Sherlock & Gravelle 2009). Note that this implies that unless the subsidy amount can be adjusted to every individual and every public good, subsidies will necessarily produce some unneeded deadweight losses.

[6] Obviously, in the real world there are not an infinite number of jurisdictions, offering unlimited combinations of public goods. Thus, the reader can conceive of "moving costs" as including trade-offs between the existing set of goods offered in j_1 and those that will be bundled together with the public good in question in j_2.

[7] This form of the equation assumes for expositional simplicity that all other goods, and the individual's proportionate share of the tax cost for them, are held constant. We similarly assume that jurisdiction two is a closed economy, so that none of the tax cost or resulting deadweight losses can be shifted to another jurisdiction.

We also assume for simplicity that *i* does not receive a deduction for the cost of government in jurisdiction two. Such a deduction is ordinarily available under the U.S. tax code (I.R.C. § 164), although often it is effectively unwound by the alternative minimum tax. In any event, the only effect of allowing a deduction for the cost of local tax in jurisdiction two would be to decrease somewhat *i*'s costs of moving; the predictions of the model are unchanged.

[8] Equation (6) appears to omit *i*'s cost of paying for the good. However, on our assumption that the good is already in production in jurisdiction two, *i*'s tax contribution reduces the tax paid by others, netting out to a welfare cost of zero. *I*'s relocation might actually slightly reduce the total cost of producing the good, if her presence allows a lower tax rate and thus a diminished deadweight loss.

Equation (6) also includes no term for any negative externalities. This reflects two assumptions. The first, as described in the main text above, is that local externalities can be eliminated through relocation. To the extent that relocation does not entirely eliminate externalities, as in the case of deadweight losses from discouraging labor, the assumption again is that the good is already in production in jurisdiction two. *I*'s decision to relocate does not affect whether or not those externalities exist.

For similar reasons, equation (6) also does not factor in externalities affecting citizens outside j_2.

[9] However, moving may also eliminate positive externalities for other jurisdictions. But in many cases these will be zero, since for the marginal effect of *e* to be non-zero, there must be externalities derived from the production of an additional unit of the good over and above those already produced by j_2.

[10] More precisely, *i* will move when her expected surplus from all incremental purchases is higher in j_2 than j_1. But that calculation is complex, and does not affect the core intuitions of the model.

[11] The deadweight loss resulting from society's purchase at cost *c* is only $d\alpha c$, rather than dc, because only the subsidy portion of the payment need be financed through taxes. The remainder of the cost is paid directly by citizen *i.*

[12] This integral abuses notation a bit; the point is that the summation is from the point on the marginal utility curve where *m* intersects the marginal cost curve to the equilibrium point, where marginal cost and utility intersect.

[13] More precisely, since in the absence of subsidy there is no deadweight loss, the social surplus is BFJ, increased by the area between the deadweight loss curve and *i*'s cost curve.

[14] Strictly speaking, only a portion of the net social loss is caused by the geographical distortion. Some of the loss (represented in figure 2 by the triangle between the subsidized and unsubsidized marginal cost curves) results from the substitution effect in favor of the good caused by the subsidy. But this distinction is unimportant for policy purposes.

[15] In addition, the model abstracts away from two other factors that may be of some relevance. For one, it assumes that there are no redistributive effects, but of course redistribution is one of the classic goals of charity. Our only point here is that the current conventional wisdom, in which sub-national redistribution is assumed to create inefficient deadweight losses but charity does not, paints an incomplete picture of the relative merits of the two mechanisms.

Second, and we think less significantly, the model also presumes that the purchaser's welfare does not depend on the source of the good. Admittedly, some purchasers may have a "taste" either for private or public production, but it is controversial whether such preferences should count in the welfare function. It might be argued that any "warm glow" feelings that accompany the provision of charity (see, e.g., Bernheim & Rangel 2005, Kaplow 2008), may be dependent on the form of the institution that provides the good, although there is no persuasive account in the literature for why this should be so. For example, if voluntariness is a component of warm glow, then it is unclear why the decision to move somewhere to take on an added tax burden does not sufficiently demonstrate voluntariness. School districts may be as much of a status symbol (see Glazer & Konrad 1996) as donor plaques.

[16] For discussion of empirical efforts to measure crowd out, see Kingma & McClelland (1995), Gruber & Hungerman (2007).

Of course, crowd-out could be eliminated with a 100% government matching grant, but prevailing subsidy rates are generally much lower.

[17] As before, the predictions of the model are unchanged if we account for the possible deductibility of taxes paid to jurisdiction two. Deductibility may reduce crowd-out to some extent, but assuming that taxes in both jurisdiction one and two would be deductible, the relative appeal of moving is unchanged.

[18] As Kaplow (1995) notes, if government sets subsidies after observing demand, and this is known by donors, then donors may act strategically to extract a larger subsidy.

[19] This assumes that subsidy levels are held constant across different goods. If subsidies are increased selectively in order to account for potential crowd-out, then these increases may offset any cost-effectiveness benefits enjoyed by crowd-out goods.

[20] Other efficiency stories, such as those suggested by Kaplow (1995, 2008) and Diamond (2006) are also incomplete to the extent that they do not currently include the possibility of welfare-reducing geographical distortions.

[21] Whether localities in fact free ride on production of any particular public good with inter-jurisdictional spillovers is a complex and difficult question. See Galle & Leahy (2009).

[22] We are grateful to Louis Kaplow for this point.

[23] For a more comprehensive response to the bias argument, see Galle 2011.