

Equalizing Opportunities for
Human Development
(in One Country)

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Inter-American Development Bank

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Foreword

One of the functions of the Poverty and Inequality Advisory Unit is to contribute to building knowledge in the areas of poverty reduction and the pursuit of social equity. This study develops a framework to investigate the optimal allocation of a country's fiscal resources to help equalize opportunities for human development. Roemer argues that the proper role for policy is the pursuit of equality of opportunities as opposed to equality of outcomes. Because outcomes reflect the combination of a person's socioeconomic background and effort, the role of public policy is then to equate results conditional on effort. A stylized model formalizes this argument and provides insights on policy rules to equalize opportunities within a one country framework. The paper provides interesting reflections on political economy issues and suggests extending the framework to provide guidance to development institutions on the optimal allocation of lending resources across member countries with different socioeconomic conditions as to equate their opportunities. This is an interesting paper that attempts to integrate in a practical way concerns about equality of opportunity and individual responsibility and provide a useful analytical framework.

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Abstract

In the past twenty-five years, egalitarian political philosophers have acknowledged the importance of injecting personal responsibility into egalitarian theory. In brief, the ethically attractive objective is to equalize opportunities for desirable conditions, such as health and earning capacity, rather than equalizing health status or earning capacities, across the members of a society.

I propose that educational achievement, quality adjusted years of life (QALYs), and income are the three most important inputs into human development, and I then outline precisely how a country can use its national budget to equalize opportunities among its citizens for educational achievement and for QALYs, and can use its fiscal system to equalize opportunities for income. I present the results of two of these computations for the United States. The paper next addresses the political feasibility of implementing such programs. It concludes with a discussion of the data that are necessary to perform these computations, and of the problem of equalizing opportunities *across countries* for human development.

Contents

Equality and Responsibility	1
The Theory of Equal Opportunity	3
EOp Policy for the United States	7
Political Feasibility	10
The Necessary Data	12
Internationalism	13
Tables and Figures	14
References	19

Equality and Responsibility

In the last twenty-five years, since the publication of John Rawls's *Theory of Justice*, a lively discussion has taken place among philosophers on the question: If one is an egalitarian, what exactly should one desire to equalize? The simplest, and most naive response, would be welfare as the economist thinks of it – for if individuals desire to maximize their welfares, then it might seem that the social planner, or the impartial observer who is committed to equality, should seek to equalize welfare levels across individuals. All the main participants in the philosophical discussion I have alluded to agree that equalizing welfares (assuming one could do so, which among other things presumes that there is an interpersonally comparable measure of welfare) is not an attractive ethic. The reason is, briefly, that such a goal would ignore the ethically important input of individual responsibility.

Let me illustrate with an example. Suppose society has provided each of two citizens with some social resource, such as education. The citizens come from similar backgrounds and are similarly talented. One squanders the social resource, the other uses it efficiently – in this case, let us say that one plays hooky and the other studies assiduously. The consequence is that the lazy character ends up badly off and the industrious one well off. Were society now to equalize their welfare levels, it would have to shift more resources to the lazy one. But that seems unfair, for it means that the industrious in the society will end up with a smaller share of social resources than the lazy ones. If, by hypothesis, both the lazy and industrious citizens had equal capability and potential, this would be unfair. One might say that equality of welfare would produce exploitation of the industrious by the lazy.

In other words, equality of welfare as an ethic contravenes the view that, at least to some extent, persons are justifiably held accountable for their

behavior. It violates the view that those who act responsibly deserve to be better off, other things equal, than those who act irresponsibly. Of course, it may be a subtle problem to decide when an individual has acted irresponsibly, but for the moment, let us ignore that problem. The view I propose here, and that I claim all participants in this debate have affirmed, is that *if* Adam and Beth are similarly situated, and Adam acts irresponsibly while Beth acts responsibly, then it is ethically acceptable, even desirable, that Beth be better off in outcome than Adam.

Rawls's attempt to deal with this problem was to say that distributive justice does not require equality of welfare, but rather equality of primary goods, where primary goods are resources, like education, that all people require to succeed with their own life plans. But there were a number of inconsistencies with Rawls's solution to the problem, into which I cannot delve here. In brief, his construction of the veil-of-ignorance thought experiment muddled the distinction between responsibility and circumstance, and some of the goods he included as primary, such as income, are the joint output of responsible effort and other inputs, and as such, should not be in the list of things to be equalized across persons.

Other participants in this debate were Amartya Sen (1980), who advocates the equalization of capabilities; Ronald Dworkin (1981), who advocates the equalization of resources; Richard Arneson (1989), who advocates the equalization of opportunities for welfare; and G. A. Cohen (1989), who advocates the equalization of access to advantage. These equalisanda all have technical definitions in the writings of their authors, which do not exactly conform to everyday usage.

I have tried to capture what I think are the best insights in this discussion in a theory of equality of opportunity, which begins with the metaphor

that an equal-opportunity policy entails 'leveling the playing field.' Imagine that citizens in a country are competing for various important goods, which are the key inputs into human development, such as education, health and income. It may seem narrow to formulate the pursuit of such goods as a competition, but I do so because the pursuit of such goods involves competition both in the market for income, and in the political arena for the resources that are needed to produce these goods.

What are the troughs and mounds in the playing field that should be leveled off to render that competition fair? I say they are the disadvantages and advantages, respectively, that people suffer or enjoy in that competition, which are due to circumstances beyond their control. Examples of such circumstances are: the socioeconomic status of the family a person comes from, a person's race and sex, and a person's degree of native talent. Consider the educational achievement of a person. It is produced from three kinds of input: first, her circumstances, in the above sense; second, the effort she applies during the process of schooling; and third, the financial resources devoted to her education. I say equality of opportunity has been achieved when the educational achievements of citizens are perfectly predicted by their efforts, and independent of their circumstances. That is, an equal-opportunity policy entails devoting social financial resources to the education of citizens in such a way that

individuals with disadvantaged circumstances are compensated to the extent that effort alone becomes the input with respect to which educational achievement is sensitive.

It may be difficult to decide exactly what factors in society and human biology constitute the relevant circumstances, and exactly how to measure effort, but I will argue that there are some simple decisions one can take on these questions that will give us a good first approximation to the solution of the knotty philosophical problems. My plan is, first, to formalize the equal-opportunity objective that I have just outlined, with a model which can be used, given the appropriate data, to compute equal-opportunity policies. Second, I will propose that the ethically correct policy for human development at the national level consists in applying this model to equalizing opportunities for three objectives: educational achievement, health and income. Third, I will present results of the computation of two of these policies (those regarding education and income) for the United States. Fourth, I will offer some remarks on the political feasibility of my proposal. I will next comment briefly on the data that are needed to compute such policies. Finally, I will comment on the limitations imposed by the 'one country' constraint in my title and will conclude with a proposal for how to compute an ethically attractive allocation of international aid resources.

The Theory of Equal Opportunity

Suppose that we desire to equalize opportunities among citizens for achievement of a specific objective – educational achievement, or quality adjusted years of life (QALYs), for instance. We first must delineate the set of circumstances beyond the person's control that affect the relevant outcome. For most of this paper, I will take the socioeconomic status of her parents as the person's sole circumstance. Obviously, we could include other circumstances, such as sex and race or ethnic background, and even native talent.

We now partition the relevant population into *types*, where a type consists of all individuals with the same circumstances. For instance, if we define the socioeconomic status of the family by the level of education attained by the parents, then we could approximate by saying there are three types: those whose parent had some tertiary education, those whose parent had some secondary education at most, and those whose parent had only primary education. This is, of course, an approximation to what would ultimately be desirable for a type classification.

Let us suppose the objective for which we are trying to equalize opportunities is earning capacity, or the wage a person is capable of earning. We take education to be an instrument. Our goal, then, is to use educational policy, financial and otherwise, to render it the case that an individual's wage level is a function only of his effort, and not of his type.

Let us denote a particular educational policy by ϕ , which might be a particular distribution of educational resources in the country among primary, secondary and tertiary educational institutions. There is a class of fea-

sible policies, given the budget constraint: if E is the educational budget of the government, let us call this class of policies $\Phi(E)$. At any feasible policy ϕ in $\Phi(E)$, there will ensue a distribution of wage levels eventually earned, in each type – these are the wage levels earned by young adults who attended schools financed under policy ϕ . We can denote by $v^t(\pi; \phi)$ the average wage level of individuals at the π^{th} centile of the wage distribution in type t , when the policy was ϕ . Figure 1 presents a hypothetical picture.

In the figure, v^T , v^S and v^P stand for the wage levels of individuals in the three types – those whose parents had Tertiary education, Secondary education and Primary education, respectively.

At the policy ϕ of figure 1, opportunities have not been equalized: for at every centile of the wage distributions by type, those who come from T families do better than those who come from S families, who do better than those who come from P families. Figure 1 will be the qualitative picture, at present policy, for virtually every country in the world.

I now argue that equality of opportunity requires using policy to squeeze these three graphs together along their vertical axis. To do so, I will first argue that, to a first approximation, a good ordinal measure of a person's degree of effort in the educational process is the centile at which she sits on the wage distribution of her type, *if it is the case* that the policy ϕ entails about the same level of resource support for all members of the type. The argument is very simple. Recall that I stated earlier that the outcome, in this the wage level of a person, is determined by

three inputs: his circumstances, his effort and the resources devoted to his education. Now within a type circumstances are constant; and by hypothesis, the policy ϕ entails the same resource expenditure on all members of a type. Therefore, what variation there is in achievement must be due to the variation of effort. Hence, a person's degree of effort is captured, under these assumptions, as his centile on the wage distribution of his type. In particular, a person's observed wage-distribution centile is also his effort centile. Thus, we have deduced a measure of effort without ever having to observe effort which, in reality, is a complex, multidimensional thing.

This example shows that the choice of circumstances is a substantial one, in the sense that everything which positively affects the wage level and is not captured in circumstances shall be implicitly declared to constitute part of responsible effort. Since typically our choice of the set of circumstances will be minimal, we shall always err on the 'conservative' side, of attributing too much to effort.

Next, I will argue that the centile measure of effort is a good *intertype comparable* measure of effort with the caveat on effort explained in the last paragraph. Suppose we could compute distributions, by type, of measures of actual kinds of effort (such as how much time a person devotes to his studies, and so on). We would doubtless observe that these distributions of effort differ across types. Generally speaking, more advantaged types will have 'better' distributions of effort, with higher means. Now the distribution of effort is a *characteristic of the type*, not the characteristic of any individual, and since we wish to compensate persons for their type, we should compensate them for being in types with bad distributions of effort. This means that, when comparing the effort levels of two persons in different types, we must adopt a measure which factors out the goodness or badness of the distribution of effort in the types to which they belong. The centile measure fills the bill. In adopting it, we are

agreeing to calibrate the degree of a person's effort by comparing him to others with his circumstances. Individuals who each sit, for instance, at the 70th centile of their effort distributions, but are in different types, are deemed to have expended the same *degree* of effort. Therefore, the equal opportunity policy consists in equalizing, to the extent possible, the achieved wage levels of individuals *across types* but at *given centiles* of the wage distribution.

We next formulate this problem mathematically. Suppose we fix for the moment a given centile of the wage distribution, π . To achieve our objective, we would find the policy ϕ that solves the program:

$$\text{Max}_j \text{Min}_t v^t(\mathbf{p}; \mathbf{j}), \quad (1)$$

such that $\mathbf{j} \in \mathbf{F}(E)$.

That is, we use policy to maximize the minimum wage level across types, at the centile π of the wage distribution. The solution to this problem will be a particular policy – call it ϕ^π .

This, however, only solves our problem for one centile: what we need is a policy that equalizes, or maximins, wage levels across types at every centile. Now there is no such policy, for we have completely determined the policy just by concentrating on one centile. That is, if we solve program (1) for each π in the interval $[0,1]$, we will generally get a continuum of different policies.

We require some second-best approach. My proposal is that we create an aggregate objective function, in which we weight the objective function of the π^{th} effort slice of the population by its size, and then form a social objective function by adding up. Thus, our program becomes:

$$\begin{aligned} & \text{Max}_j \int_0^1 \text{Min}_t v^t(\mathbf{p}; \mathbf{j}) d\mathbf{p} \\ & \text{s.t. } \mathbf{j} \in \mathbf{F}(E) \end{aligned} \quad (2)$$

I call the solution to this program the *equal opportunity policy*, denoted ϕ^{EOp} .

Roughly speaking, the equal-opportunity objective function is *egalitarian* across types, but *utilitarian* across effort levels. That is, for a fixed effort level, it concentrates on maximizing the outcome of the members in the worst-off type, but within a type, it gives equal weight to the welfares of those at every effort centile. There is, thus, every effort made to eliminate the effect of circumstances, but no effort made to eliminate the effect of effort, on outcomes. Having said this, it will come as no surprise that the EOp program always recommends a policy that is less egalitarian than the bowdlerized¹ Rawlsian policy, that maximins outcomes across the whole population, and more egalitarian than the utilitarian policy, that maximizes the average outcome of the population.

In general, at the equal-opportunity policy, the three wage curves will look like figure 2. They will intersect. In fact, there is a simple geometric interpretation of the EOp program: it calls for maximizing the area under the lower envelope of the three wage curves, the area that is shaded in figure 2.

Let us now specialize to the case of human development, as promised earlier. I said that, rather than trying to equalize the levels of education, health and income across citizens, the ethically defensible objective is to equalize opportunities for education, opportunities for some health objective, like quality adjusted years of life, and opportunities for income. In the above examples, I have taken wage-earning capacity as a measurable proxy for educational achievement.

¹ Bowdlerized, because Rawls recommended maximin primary goods, not outcomes.

If we take the budgets for education and health to be fixed at E and H , and if we know the functions $h^T(\pi; \psi)$, $h^S(\pi; \psi)$ and $h^P(\pi; \psi)$, which measure the expected quality adjusted years of life at centile π of the distributions of those expectancies at health policy ψ , in the three types, then with respect to health, the equal opportunity policy is the solution of the program:

$$\begin{aligned} & \text{Max}_j \int_0^1 \text{Min}_t h^t(\mathbf{p}; \mathbf{y}) d\mathbf{p} \\ & \text{s.t. } \mathbf{y} \in \mathbf{Y}(H) \end{aligned}$$

where $\Psi(H)$ is the set of feasible budgetary health policies given budget H . What is the relevant effort with respect to the objective of quality adjusted years of life? Clearly, it is what we call lifestyle (that is, whether the individual smokes, eats too much fatty food, etc). Thus, the EOp health policy will hold individuals responsible for the variation within type of lifestyles, but not for the variation *between* types of lifestyle. If people who come from less educated families smoke more than people who come from well-educated families, that difference will be compensated for in the EOp policy.

Finally, suppose that incomes (which are not the same thing as wage levels) are represented by $y^T(\pi; \tau)$, $y^S(\pi; \tau)$, and $y^P(\pi; \tau)$, where τ is a tax-and-transfer policy, drawn from some feasible set of policies $T(R)$. Here, R may be government revenue, and the fiscal policies are the class of revenue-neutral policies that produce a given amount of tax revenue R . In this case, $y^t(\pi; \tau)$ is the average post-fisc income of individuals in type t at policy τ at the π^{th} centile of the post-fisc distributions of income. Then the equal-opportunity tax-and-transfer policy is the solution of the program:

$$\begin{aligned} & \text{Max}_j \int_0^1 \text{Min}_t y^t(\mathbf{p}; \mathbf{t}) d\mathbf{p} \\ & \text{s.t. } \mathbf{t} \in T(R). \end{aligned}$$

Thus far, I have assumed that the health and education budgets are given. We could, more generally, assume that the total budget is given, but solve for an optimal allocation of the budget between health and education as follows. Suppose the planner has an assessment that the best index of human development is a particular increasing function of education, as proxied by the wage-earning capacity of the individual, and health, as proxied by expected QALYs: say $F(v, h)$. Then the program the planner solves is:

$$\text{Max}_{E,H} F(V^e(E), V^h(H))$$

where $V^e(E)$ is the value of

$$\text{Max}_j \int_0^1 \text{Min}_t v^t(\mathbf{p}; \mathbf{j}) d\mathbf{p}$$

$$\text{st. } \mathbf{j} \in \mathbf{F}(E)$$

and $V^h(H)$ is the value of

$$\text{Max}_j \int_0^1 \text{Min}_t h^t(\mathbf{p}; \mathbf{y}) d\mathbf{p}$$

$$\text{st. } \mathbf{y} \in \mathbf{Y}(H)$$

all subject to $E + H = R$.

EOp Policy for the United States

In this section, I report the solutions of two of the above EOp programs for the United States. First, let us consider the equal-opportunity educational finance policy. The educational budget in the United States is approximately \$2500 (in constant 1989 dollars), per student in primary and secondary schools. My collaborator Julian Betts and I² partitioned our sample, taken from the NLSYM, into four SES types: those individuals whose more educated parent had, respectively, less than eight years of schooling, between 8 and 11 years of schooling, secondary schooling but no more, and some tertiary education. Call the population fraction of these four types $\omega_1, \omega_2, \dots, \omega_4$. We took the *policy* to be a vector of per capita expenditures (x_1, x_2, x_3, x_4) satisfying the budget constraint

$$\sum_t \omega_t x_t = 2500.$$

where x_t is the amount per capita to be spent on the education of type t students. Using the NLSYM data set, which contains information sufficient to allow us to estimate econometrically all the functions v^t , we computed the equal opportunity policy, which turns out to be:

$$\begin{array}{ll} x_1 = \$4,770 & x_2 = \$3,030 \\ x_3 = \$2,220 & x_4 = \$530 \end{array}$$

First, observe that in the EOp policy, we spend about nine times as much on the most disadvantaged type as on the most advantaged type, per capita. The fact that this multiple is so large is explained by the very low elasticity of future wages with respect to educational spending, a statistical fact that is still not fully understood by labor econo-

mists. Note also that, in the EOp policy, the two most disadvantaged types receive more than their per capita share, while the two most advantaged types receive less than their per capita share. Finally, contrast the compensatory nature of the EOp policy with what I call the *equal resource* policy, in which we spend the same amount on all students.

Figure 3 shows the graphs of the four v^t functions at the EOp policy. Notice that we succeed in fully equalizing opportunities for the three more advantaged types, in the sense that their wage functions virtually coincide at the EOp policy. But the most disadvantaged type remains an outlier.

The reader might remark that it would not be politically feasible to implement a policy calling for spending nine times as much public money on the education of low SES students as on high SES students. I will return to the question of political feasibility later. Besides questioning political feasibility, the reader might well also ask: What would be the aggregate cost of implementing such a policy? We can measure this by estimating how much the total wage bill would fall (that is, by how much GNP would shrink) were the EOp policy implemented. In fact, we shall compare the total wage bill under the EOp policy to the wage bill under the equal resource policy. The answer is that the wage bill would actually *rise* by 2.4 percent under the EOp policy. In other words, the improvement in productivity of the less advantaged SES types, from the compensatory educational investment, would more than compensate for the loss in productivity of the more advantaged types.

One can, of course, take different definitions of circumstance and type than the socioeconomic definition I have given. In the United States, race is surely an important circum-

² For a full discussion, see Betts and Roemer (1998).

stance. We recomputed the EOp policy, now taking race and SES as the two characteristics of type. More precisely, we characterized each individual in the NLSYM sample by his race and the level of education of his parent, which we now take to be simply High (parent graduated high school) or Low (parent did not graduate from high school). Consequently, we have four types: LB, HB, LW and HW. The EOp policy turns out to be

$$\begin{array}{ll} x_{LB} = \$12,910 & x_{HB} = \$9,410 \\ x_{LW} = \$2,530 & x_{HW} = \$910. \end{array}$$

Thus, EOp calls for spending about 13 times as much on the low black type as on the high white type. What is particularly interesting here, I think, is that EOp calls for spending almost four times as much on the high black type as on the low white type. This seems to be a sharp indication that being black is associated with a kind of economic disadvantage much more severe than coming from a family where the parents are poorly educated. Figure 4 presents the graph of the four v^i functions at the EOp solution.

What would be the efficiency effects of implementing this policy, in terms of the size of the total wage bill? This time, the total wage bill would decrease by 2%.

Let me turn now to the tax and transfer system. What I shall report is collaborative work with Marianne Page (Page and Roemer, 1998). Here, we take the viewpoint that I discussed earlier, that the tax-and-transfer system of a country can be used to equalize opportunities for income. This time we used the PSID data set, which allows us to compute the pre-fisc and post-fisc income of households by type, where we again predicate type on the educational level of the parents of the individual in question. We endowed each individual with a quasi-linear utility function in income and leisure, with a constant labor supply elasticity (with respect to the wage) of η . Thus, increasing the marginal tax rate will engender lower labor supply at all wage levels, and hence less revenue

to redistribute to disadvantaged types. This is the trade-off.

Here, we partitioned the sample into three types: those whose parents had less than a high school education, those whose parent finished high school only, and those whose parent had at least some tertiary education. The policy this time is a linear redistributive income tax – that is, we do not predicate the policy on a person's type, just on her income. The results are reported in Table 1.

The effective marginal tax rate in the United States is only .210 at present, not counting social security taxes. The effective net transfer is \$3,074. With a 'conservative' (large) estimate of labor-supply elasticity, the EOp policy calls for raising the marginal tax rate by 5.5%, and raising the lump-sum transfer to \$4,400; the shrinkage in GNP (the so-called efficiency cost) would be approximately .9%. With an optimistic (low) estimate of labor-supply elasticity, EOp calls for a marginal tax rate that is somewhat higher than we see even in the Nordic countries (76%), and the lump-sum transfer of \$18,000. The efficiency cost of this policy would be 3.6%.

Unfortunately, I have not yet studied the problem of using health finance policy to equalize opportunities for QALYs, so I have nothing to report to you on that front.

Let me summarize some of the qualitative features of these results. I began by saying that contemporary political philosophers have injected the issue of responsibility into egalitarian theory. To some, this might seem a retrograde move: after all, championing the importance of personal responsibility has historically been the most effective tactic of the antiegalitarian right. Nevertheless, anyone interested in human development must agree that hard work is an essential input into self-actualization, and there is a limit to what social policy can engender in that regard. We should provide people with the necessary inputs, but after that, the decision to work hard is up to them. The equal-opportunity

theory I have presented takes just this approach, that social policy should provide additional resources for those who are disadvantaged by circumstance, but after that, it is up to them.

Not so remarkably, if one grasps the theory, we derive not conservative social policy, but what most would call a quite radical policy recommendation. Instead of saying that equalizing opportunities requires spending

the same amount per capita on all students in the society, we say that society should spend nine times as much on its most disadvantaged types as on its most advantaged type. Those who fear that an acknowledgment of the ethical legitimacy of personal responsibility would attenuate compensatory transfers are quite wrong: indeed, I would argue, that acknowledgment endows such transfer policies with an increased legitimacy.

Political Feasibility

As I said earlier, it would seem to be politically infeasible to implement a policy calling for spending nine times as much on students from disadvantaged types as on students from the most advantaged type. This kind of targeted program is almost never popular with voters in democracies. The success of the most egalitarian welfare states in the world, the ones in Northern Europe, is predicated on the *universalism* of their policies, which has been key to democratic support. The kind of targeted policy that I presumed in the educational example should be looked at not as a realistic proposal, but as a normative experiment, which shows what equality of opportunity would require, ignoring questions of political feasibility.

An example of a policy in a developing country that would be more politically feasible, as an instrument for equalizing opportunities for wage earning capacity, is the allocation of the national education budget among primary, secondary and tertiary education. To the extent that one favors primary education, one favors the most disadvantaged socioeconomic types, for in developing countries, these students rarely go beyond primary school. One could, in principle (that is, with the right data) compute the EOp policy in the class of feasible policies, that is, all policies that allocate the national education budget among these three levels of school.

A second instrument with respect to education is the school-leaving age. By raising the legal school-leaving age from 14 to 16, say, one disproportionately affects the outcomes for the worst-off types, for it is they who leave school at the earliest possible age. This is, of course, a budgetary question: raising the school-leaving age costs money, both in terms of additional teachers, but also perhaps

due to subsidies that must be paid to poor teenagers to make it possible for them to stay in school longer.

Let us turn to healthcare policy. I suggested that the expected quality-adjusted years of life is an appropriate condition for which we should equalize opportunities. Recall that the obvious conception of effort, in this realm, is lifestyle quality: high effort means not smoking, engaging in safe sex, eating well and so on. Here, I can think of two kinds of policy that could be used as instruments in our equal-opportunity program, and are universalistic. The first is to direct health expenditures toward prevention and treatment of those diseases which especially affect the poor: malaria, tuberculosis, AIDS and so on. Of course, this is a universalistic policy, for it is not predicated on the type of any individual. The second instrument is expenditures on programs that educate people about healthy lifestyle: the sexual transmission of disease, the causal link between smoking and cancer, and so on. These programs, though universalistic, will bring the greatest changes in behavior to disadvantaged types, for those who are advantaged are already relatively attuned to the concept of a healthy lifestyle.

I shall conclude this discussion of political feasibility with what is perhaps the most important point. The theory of equal opportunity proposed here is consonant with the ethical views of the overwhelming majority of citizens in most countries. Surveys in many countries have shown that citizens support social transfers when the recipients are conceived of as 'deserving', in the sense that their unfortunate situation is not due to irresponsible behavior, but to bad luck or circumstances. Even in the United States, which has perhaps the most conservative

polity of all the OECD countries, citizens support welfare-state measures to help people who have tried hard but have failed through no fault of their own. Inversely, the voters react against the welfare state when they are convinced that its benefits are targeted to those with poor outcomes, *independently* of whether those outcomes are due to bad circumstances or luck, on the one hand, or low

effort, on the other. Thus, I claim there is already the ethical raw material, in perhaps every democracy in the world, to win the polity to support equal-opportunity policy. Doing so will require scholars who can explain the policy and politicians who can transmit the ideas clearly to voters.

The Necessary Data

It is not hard to indicate the *direction* in which social policy should move to equalize opportunities for educational achievement and wage earning capacity, quality adjusted years of life, and income, in developing countries: spend more on primary education and less on tertiary, spend more on treating diseases of the poor and less on treating diseases of the rich, and increase taxation of the rich. But to have a rigorous foundation for policy recommendation, which of course endows the policy with legitimacy, one needs to be able to compute the equal-opportunity policy, as I and my co-authors have done for the United States.

To solve the EOp program, one has to estimate the functions $v^j(\mathbf{p}; \mathbf{j})$, which requires estimating the distribution of outcomes (e.g., wages or QALYs) by type, conditional on policy. Sticking to the wage example, one needs to estimate the distribution of wages by type of person, conditional on what the policy of educational finance is. This means

one requires a panel data set which records the characteristics of the family the individual came from (e.g., parental education or income), the educational policy which the individual experienced, and finally the individual's wage at as a young adult. These data sets are available in many industrialized countries, but there are no developing countries which have them at present.

Similarly, in regard to health, one requires a data set which has information enabling us to calculate quality-adjusted years of life, by type of individual, and conditional upon what the health finance policy was during his life. Again, such data sets exist in only a few OECD countries at present.

Hence, I strongly advocate that funds be allocated for constructing such panel data sets in developing countries.³ In this call, mine is surely not a lonely voice.

³ Panel data sets are necessary because we need information on the parents of the individual, which one normally gets when the individual is young, and on his later economic and health outcomes, which materialize when he is older.

Internationalism

I have, until now, stuck to the ‘one country’ qualification in my title. However, it will not escape the alert reader or auditor that perhaps the most important circumstance in a person's life is the country in which she is born. Clearly, this is beyond the control of the person, and just as clearly, it is perhaps the best predictor of a person's eventual level of human development that one could choose, if one had to predict that condition for a randomly chosen person on Earth. Thus, an equal-opportunity view, applied to the society consisting of all human beings, would mandate massive transfers from rich nations to poor nations.

While it is unrealistic, at this point in history, to think that those transfers will materialize soon, we might ask, more modestly: How should the present total budget of international nonmilitary aid be allocated in order to equalize the opportunities among *countries* for poverty reduction or growth? Here, we would treat the ‘individuals’ of the Eop model as countries, which would necessitate defining types and effort of countries. A recent publication by the World Bank (1998) conceptualizes a measure of country effort as a set of specific practices that are associated with effective use of international aid. *Assessing Aid* essentially computes, econometrically, the functions $v^t(e,x)$ where v^t is the growth rate of a country with circumstances t , e is the degree of effectiveness (country effort) of its internal institutions and practices, and x is the fraction of its GNP which it receives in aid. Using a discrete version of the EOp objective (because we have only a finite number of countries, and so it is best to define effort quartiles instead of effort centiles), we could compute the distribution of the present international aid budget that would *equalize opportunities for growth* across countries. Indeed, since a larger score on the effort variable enhances the effectiveness of aid in generating growth, we could use as an allocative instrument a formula which awards

aid as a function of country effort. For instance, we could declare the class of policies to be allocation functions $ae + be^2$, where (a,b) is to be determined by the optimization exercise, and a country would receive aid per dollars of GNP in the amount $ae + be^2$. The set of policies (a,b) would be constrained by the requirement that the total amount of aid disbursed be equal to the present total international aid budget, comprised of bilateral plus multilateral aid. The policy recommendation would be to alter the distribution of international aid so that it aligns with the EOp recommendation.

Let me bring up one question that is bound to arise concerning this formulation. I have proposed to measure a country's effort by the effectiveness of its internal institutions and practices, as defined in *Assessing Aid*, thus implicitly holding the country accountable for developing those institutions and practices. But this means that citizens who live in countries with ineffective or corrupt institutions will suffer (their country would receive little or no aid) by virtue of political institutions over which they may have little control. This is perhaps unfortunate. Here, I can agree with the authors of *Assessing Aid*: those countries should receive advice from international agencies concerning institutional reform, but not financial aid, until their institutions become effective.

At least for the universe of democracies, I believe that the proposal is a good first approximation to what international equality of opportunity requires. For democracy brings with it not only accountability of politicians to voters, but accountability of polities to themselves. To the extent that a country is a democracy, its citizenry can be held collectively accountable for the social policies it has. If this premise is right, then my proposed measure of national effort is ethically sound.

Tables and Figures

Table 1. Using the Fiscal System to Equalize Opportunities for Income

	marginal tax rate	Lump-sum transfer	efficiency cost
observed policy	0.210	3,074	--
EOp policy, $\eta = 0.12$	0.265	4,392	.9%
EOp policy, $\eta = 0.03$	0.765	18,165	3.69%

Figure 1. Wage Levels as a Function of Effort for 3 Hypothetical Types

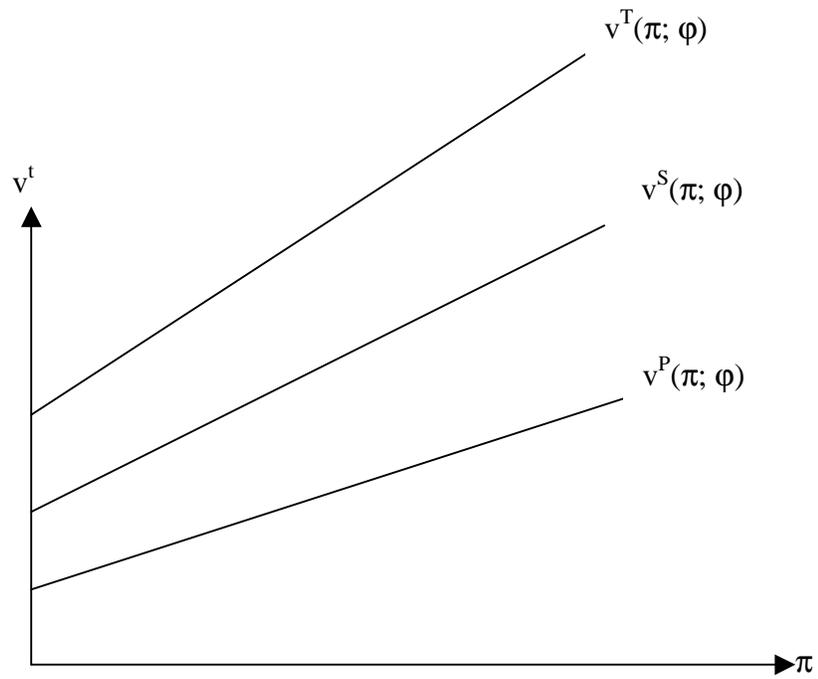


Figure 2. The Eop Policy Maximizes the Area under the Lower Envelope of the 3 v -curves

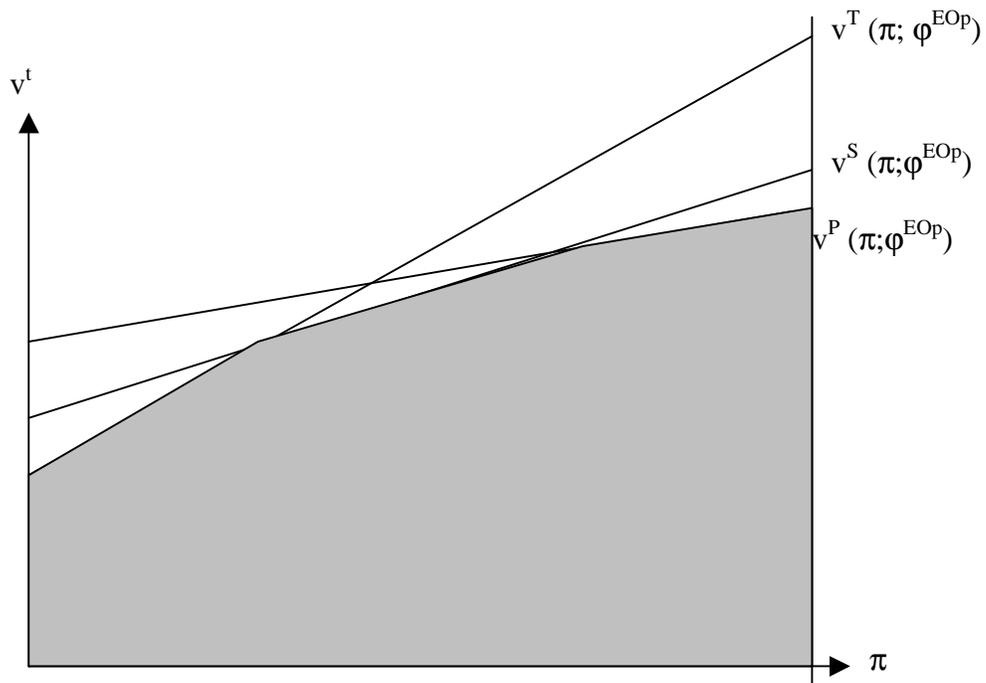


Figure 3. Wage Curves of 4 SES Types at the EoOp Policy

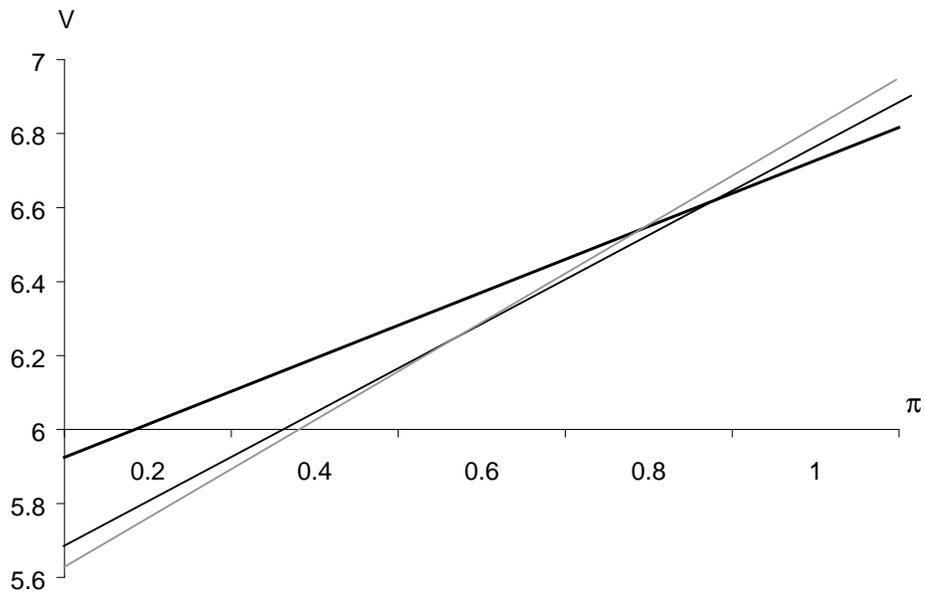
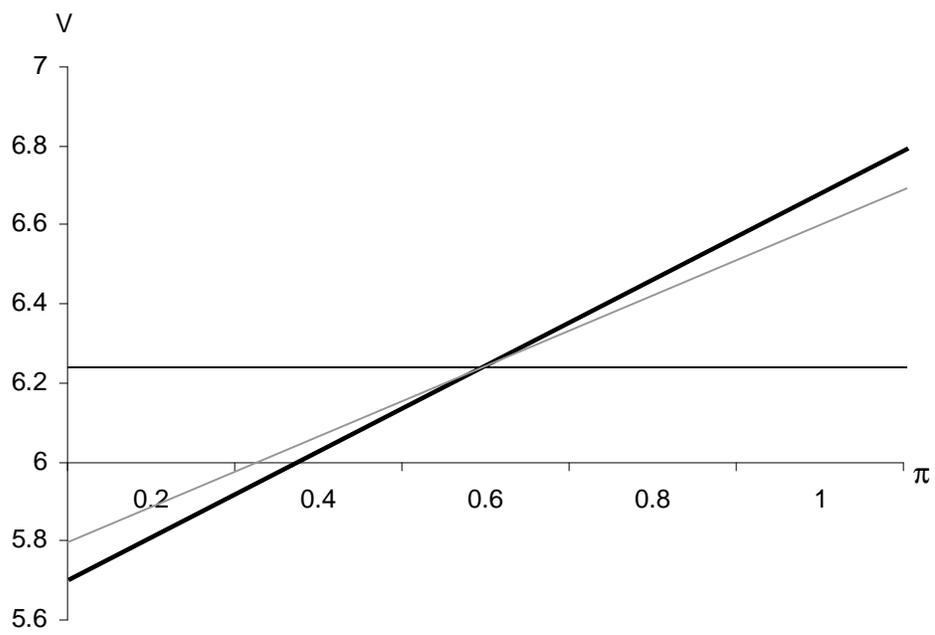


Figure 4. Wage Curves of 4 SES-race Types at the Eop Policy



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