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ON REALLOCATING ECONOMIC OPPORTUNITY:

RENT SEEKING CLARIFIED

by

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ON REALLOCATING ECONOMIC OPPORTUNITY:

RENT SEEKING CLARIFIED ¹

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I. Institutional Change

The recent interest in rent-seeking behaviour offers an occasion to seek greater clarity with respect to collective action that is traditionally regarded as being of only two types. The conventional view is that collective action is either for the purpose of increasing economic efficiency or it merely redistributes income. One form of collective action--rent-seeking-- is generally regarded as encompassing the second of these reasons; more specifically, rent-seeking occurs when political entrepreneurs utilize scarce productive factors not to increase the output of goods and services but rather to increase their income at the expense of consumers or other producers [Krueger, 1974, Bhagwati, et al, 1984]. A recent book on "neoclassical political economy" [Colander, 1984] is concerned with the study of those activities that are regarded as being directly unproductive (or DUP). Such directly unproductive activities

...represent ways of seeking profits (income) by undertaking directly unproductive activities...that...yield pecuniary returns but produce no goods or services that enter a conventional utility function directly or indirectly. Insofar as such activities use real resources, they result in a contraction of the availability set open to the economy. Tariff seeking lobbying, tariff evasion, and premium seeking for given import licenses...are all privately profitable activities. However, their direct output is zero in terms of the flow of goods and services entering a conventional utility function [Bhagwati, Brecher, and Srinivasan, 1984 pp. 17-18]

It is here that we might begin to look for clarification and elaboration of the orthodox distinction between collective action and institutional change that is thought to be pie expanding, as opposed to collective action and institutional change that is "merely redistributive." Imagine two possible situations: (1) shoe manufacturers organize to lobby for import restrictions on cheaper Italian shoes; and (2) mine laborers organize to lobby for greater mine safety. Both activities are examples of collective action to modify existing institutional arrangements. Moreover, both activities give the appearance of being strictly redistributive in that the import restriction redistributes income from consumers of shoes to domestic manufacturers, and increased spending for mine safety does not obviously increase the output of marketed goods and services (mine output), but merely makes miners better off "at the expense" of owners of mines or consumers of coal by causing prices to rise from their current level. However, these two activities—as metaphors for large classes of collective action—have several important conceptual differences that will illuminate the matter of rent seeking in collective action.

At the intuitive level, the action by domestic shoe manufacturers to remove cheaper imports from direct competition is a strictly pecuniary act in the interest of market share and stable profits within the context of a higher-cost production system. In the case of mine safety we have an issue that is dominated by social attitudes and preferences about acceptable work conditions; satisfactory work conditions in the 1800's are obviously different from those in the late 1900's and it is this dynamic dimension of social attitudes that will be seen to differentiate the two types of collective action. That is, collective action to restrict cheaper imports, if

successful, will result in a redistribution of economic advantage in favor of domestic shoe manufacturers. Collective action to modify the safety of the workplace, if successful, will result in a reallocation of economic opportunity in favor of coal miners. The conceptual and empirical distinction between institutional transactions that redistribute economic advantage and those that reallocate economic opportunity requires that we give explicit recognition of—and incorporate into our analysis accordingly—the social welfare function and the social utility function. If this is done it will be seen to suggest that there are really four types of possible outcomes from collective action to alter institutional arrangements: (1) some institutional changes will increase productive efficiency; (2) some institutional changes will reallocate economic opportunity; (3) some institutional changes will redistribute income; and (4) some institutional changes will redistribute economic advantage.² In the following analysis it will be shown that rent seeking is present in the latter case only. The discussion will be concerned with collective action (outside of established markets) that has as its purpose the alteration of existing institutional arrangements. Such institutional arrangements define individual and group opportunity (or choice) sets. Collective action to modify institutional arrangements will here be referred to as institutional transactions [Bromley, 1987].³

A. Institutional Transactions that Increase Productive Efficiency

The most familiar type of institutional transaction is that which alters opportunity sets in a way that leads to an undisputable increase in the monetized net social dividend; the establishment of new mining law and water law in the western United States would be an example of this form of institutional change, though there are many others that could be cited. Prior

to the new mining law there was great confusion about the exact boundaries of various claims, there was uncertainty over enforcement of claims, and the enforcement costs were unnecessarily high [Libecap, 1978]. Each miner had something to gain by a more careful articulation of the property rights in minerals, even though a few of the more belligerent might have preferred the anarchy of the status quo. We might depict this situation with the aid of Figure 1. Here we see two production possibility frontiers, one indicating the possible production of minerals and all other goods and services under poorly specified mining laws (A), and under the improved institutional environment (B) detailed by Libecap. There can be little doubt but that the development of a more comprehensive mining law contributes to productive efficiency as the economy moves from point Q to Q*, lowering the cost of minerals in the process.

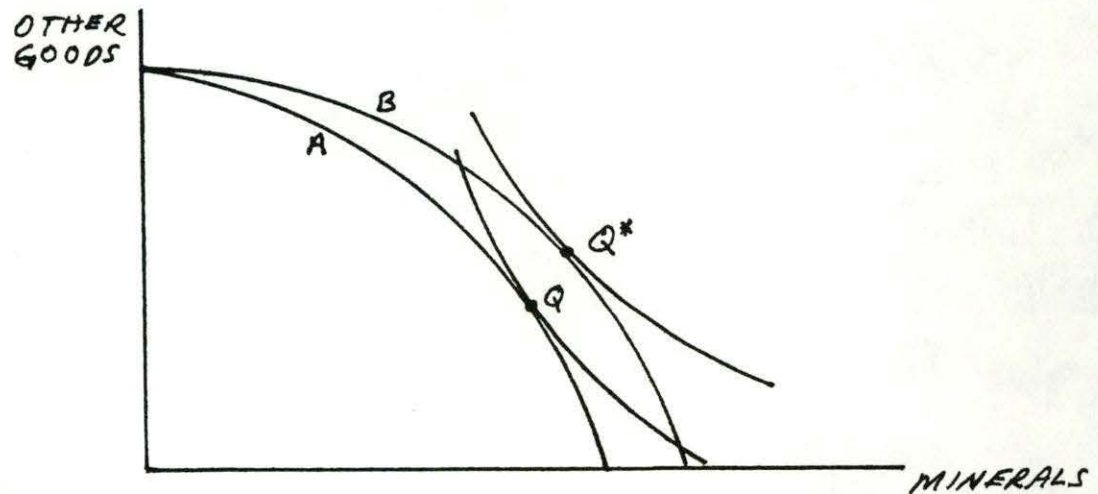


Figure 1. Productive Efficiency Through Institutional Change

Institutional transactions of this sort find their origin in our notion of conventions, and the coordination problem [Lewis, 1969; Ulmann-Margalit, 1977]. Here, most participants in an economic situation recognize that some system of property is preferable to no system (which is really a system of

"might makes right"). But a system of mineral law is quite different from a convention about driving on one side of the road or another, for the simple reason that different structures of mineral law will redound differentially to the advantage (and the detriment) of various participants in the mining process. It is for this reason that a structure of institutions in the current example will be informed by conventions to the extent that most participants share dominant preferences for an efficient and "workable" system that maximizes the net revenue of the aggregate of mines. As the potential gains from violating the convention increase we will see an evolution into a structure of entitlements such that the rights and duties of each participant are clearly spelled out. Indeed, it is the very instability of conventions in the mining case that drove the system toward a structure of entitlements; the gains to one or several participants from deviating from the convention were sufficiently large that a more structured and enforceable system was required. Institutions as entitlements rather than as conventions provided the solution to the problem of anarchy in the new mining area. And the evolved institutional structure led to clear increases in production from the mines.

B. Institutional Transactions that Reallocate Economic Opportunity

The second class of institutional transactions is concerned with the reallocation of economic opportunity. Recall that production possibility frontiers obtain their meaning from the underlying structure of resource endowments and technique available in an economy; the production possibility frontier must be understood to reflect the prevailing institutionally defined production possibilities. There are infinitely many frontiers, each depicting a different structure of technical ability and institutional arrangements in the economy. For instance in Muslim societies where women are, for the most

part, not involved in the commercial sector, the production possibilities frontier will be different from a situation in which female participation were more complete. The institutional arrangements that determine the nature and magnitude of the commercial workforce will determine the position and shape of the production possibilities frontier. In Figure 2 the production possibilities between coal and oil are depicted for an economy under two different safety regimes in coal mining. The two frontiers depict that tradeoff under coal mining conditions that are "safe" (S), and under conditions that are "non safe" (NS).

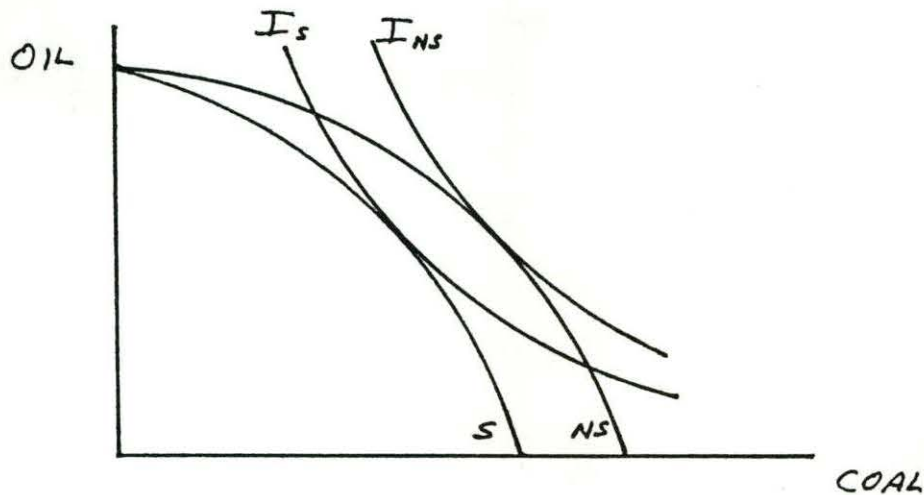


Figure 2. Two Safety Regimes in Coal Mining

To understand the institutional change under consideration here it will be necessary to move beyond production possibilities frontiers and on to the domain of utility. We start by recognizing that the safety conditions in a coal mine represent the deliberate result of the expenditure of funds for that purpose, as opposed to funds spent only for the production of coal. There is a production surface, as it were, for both coal and for safety conditions; with a given total expenditure, more spent on safety means less available for the extraction of coal. We can depict this as in Figure 3.

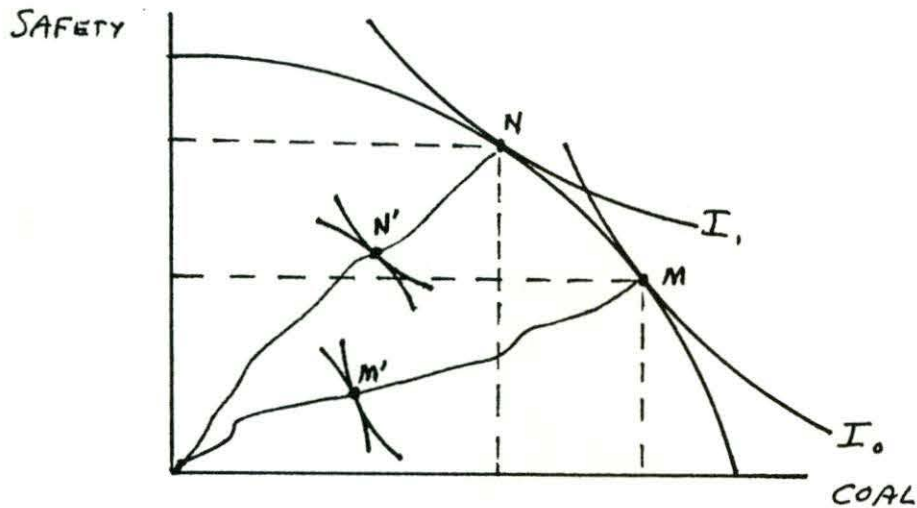


Figure 3. Institutional Choice in Coal Mining

We see now, in contrast to the story of Figure 2, that greater safety in coal mining does not imply moving to a lower social indifference curve, but rather implies a different family of social indifference curves. Recall that social indifference curves are derived from a social utility function of the form:

$$U = U(x, y, \dots, m) \quad (1)$$

where (x, y, \dots, m) reflects the bundle of goods and services available in society. This bundle of goods includes, in addition to coal, and widgets, and other private goods purchased in commodity transactions, the constellation of public (and/or collective) goods such as literacy, environmental quality, the net wealth position of members in society, the general state of human health, and work conditions of factories, farms, and mines. All of these constitute the general level of satisfaction of individuals in a society and so the position of the social indifference map must be seen as a reflection of prevailing attitudes about this full consumption set. Citizens "consume" more than just private goods purchased in commodity transactions; we also "consume"

collective goods "purchased" in institutional transactions. If social attitudes about child labor, the distribution of income, slavery, or general safety conditions in mines are such that these situations do not represent much concern, then we would have one family of social indifference curves as depicted by I_0 in Figure 3. On the other hand, as attitudes change about these matters then preferences for safety and humane working conditions will change and be depicted, perhaps, by a mapping structure such as I_1 . Note that points M and N are both Pareto-optimal points since they lie on society's production possibilities frontier; both are productively efficient output combinations of coal and safety, as are all possible points along the frontier. Moreover, both points are socially efficient given particular social objectives. Additionally, every point on the frontier, by being Pareto optimal, is also Pareto non-comparable.

The social utility function (U) is a "collectivised" set of preferences based on the expression of choices through current collective mechanisms. Arguments in this function, and the weights attached thereto, are a reflection of the goods and services deemed pertinent by the citizenry. The mapping of I_0 and I_1 reflect a combination of two forces: (1) changing preferences about mine safety in the social "consumption bundle"; and/or (2) different weights assigned to miners vis-a-vis non-miners in the social welfare function (W).

Each of the two denoted bundles (M and N) has associated with it a contract curve in exchange space where we might depict, for two individuals, various levels of satisfaction arising from the available quantities of coal and general safety conditions in the mines. Recall that one need not be a miner to have preferences for safety conditions, just as one does not need to use natural areas as a precondition to preferences about how wilderness areas are protected and managed. Each of these two contract curves will map into

(or yield) a utility possibility frontier in utility space. Two are shown in Figure 4. Curve N^{\sim} is derived from output bundle N in Figure 3, while curve M^{\sim} is derived from bundle M. The two individuals in Figure 4 have decidedly different preferences regarding the output of coal and the working conditions in mines. The utility of Curmudgeon (U_c) reveals that coal availability and price matter much more than working conditions. On the other hand the utility of Benevolent (U_b) indicates that rather more significance is attached to the conditions under which coal is mined. The point N^* in Figure 4 corresponds to the combined utility levels shown as point N' in Figure 3, while M^* corresponds to point M' in Figure 3.

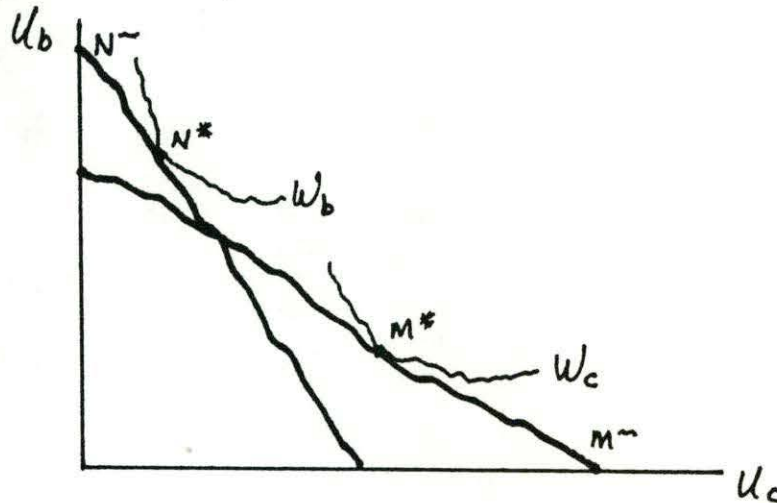


Figure 4. Mine Safety and Social Welfare

We can now see that judgments about institutional choice require knowledge of the social welfare function as well as of the social utility function; recall that the social utility function of equation (1) is specified in terms of the bundle of goods and services (including public and/or collective goods), while the social welfare function is specified in terms of the utilities of the members of society:

$$W = W(U_a, U_b, U_c, \dots, U_i) \quad (2)$$

The social welfare function is a collective choice rule that aggregates over the preferences of members in society. It should be understood to have a very special role in the problem of collective choice. Sen specifies four types of issues that are relevant to social choice: (1) the aggregation of individual interests to arrive at collective decisions; (2) the aggregation of individual judgments to arrive at collective decisions; (3) the aggregation of individual interests to arrive at welfare judgments; and (4) the aggregation of individual judgments to arrive at welfare judgments [Sen, 1982]. The use of a social welfare function as in Figure 4 is concerned with the fourth problem—the aggregation of individual judgments to arrive at a collective welfare judgment. That is, the exact positioning of the social welfare function in Figure 4 is a problem of deciding how to aggregate individual judgments of their own welfare into some collective rule. This requires that collective judgments be made on the strength and relevance of judgments made by the individuals in society—in this case Benevolent and Curmudgeon. To put it somewhat differently, whose interests will count as we aggregate their respective judgments about welfare? If it is decided that the judgments of Benevolent are more relevant for collective choice (an indirect ratification of the interests of Benevolent) then we would suggest that the social welfare function is properly depicted by W_B in Figure 4. Or, if it is decided that the judgments of Curmudgeon are more relevant for collective choice (again, an indirect ratification of the interests of Curmudgeon) then we would suggest that the appropriate social welfare function is depicted by W_C . To recognize the prior role of the social welfare function in matters of collective choice and institutional change is not to deny the empirical difficulties in ascertaining its exact nature. But every society acts in ways that give implicit—if not explicit—structure to such an aggregating device.

Regardless of which is chosen (including an infinity of those not depicted in the Figure), judgments regarding institutions cannot be made until that choice has been taken. Once a social welfare function has been defined based on the expressed and/or tacit actions of a polity, then one can work backwards through all of the conventional welfare theory to derive the optimal allocation of factors of production, the optimal output bundle in society, and the optimal allocation of goods and services among individuals. But the problem is precisely one of knowing the appropriate social welfare function to inscribe in Figure 4. And that is what the political process is essentially about; determining whose interests shall be catered to, and indirectly whose judgments about their individual welfare will carry the most weight in the aggregation process toward collective welfare judgments, and ultimately collective decisions about what it is "best" to do.

The reallocation of economic opportunity is seen, therefore, to be an ongoing process of redefining individual and group opportunity sets in response to the changing nature of attitudes and preferences in society as a whole. It is not something driven by the relentless pursuit of productive efficiency for the simple reason that for any given structure of institutions there are infinitely many productively efficient points along production possibility frontiers; and there are infinitely many institutional possibilities as well. The only place to start is with a prior determination about the nature of the social welfare function.

C. Institutional Transactions that Redistribute Income

A different type of institutional transaction is one whose explicit purpose is to change directly the distribution of income. We should not assume that the prior examples were driven by such concerns, although the

structure of the mineral entitlements and of the safety regime in mines will certainly have an impact upon the ultimate distribution of income. However, the recognition of a need for a new institutional structure over minerals is driven by the recognized need for order and stability in the expectations and behaviours of the participants rather than by desires to redistribute income. And the need for institutional change in coal mining is driven, I suggest, primarily by social concern for working conditions in mines, not the relative wealth position of laborers and mine owners.

In the case of collective action to redistribute income however, imagine a situation in which collective action is promoted to revise the income tax laws out of concern for an existing income distribution that seems "too favorable" to the rich, and "too hard" on the poor. The mechanism chosen is that the marginal tax rate for the wealthy is raised significantly, while a number of the poor are removed from the tax rolls altogether. We can depict this with the aid of an Edgeworth box where the monetary impacts of this change are depicted, as we do in benefit-cost analysis, in terms of altered consumption over time. The shaded areas represent extremities of the distributional possibilities that have been determined to be socially unacceptable. The status quo distribution is given by point D , while the new altered distribution is shown as point D^* . This is illustrated in Figure 5.

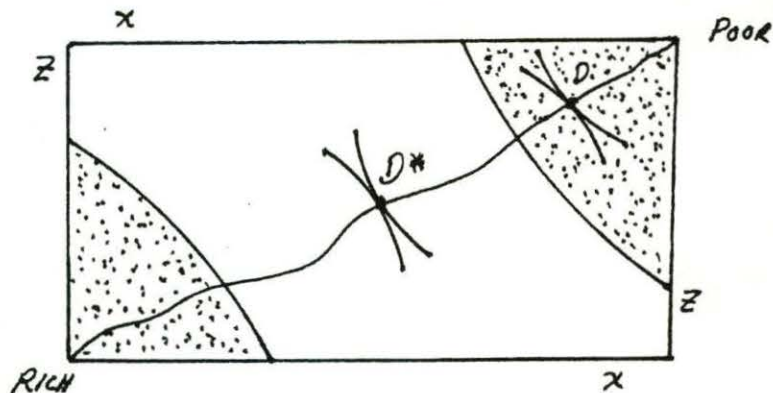


Figure 5. Institutional Change Modifying Income Distribution

We know that the contract curve in exchange space maps out all points that are Pareto optimal and that the curve also defines all points that are considered efficient in exchange. Hence the various points along a contract curve are Pareto non-comparable and we have no clear way to rank the social states defined by D and D^* . But societies are constantly undertaking actions that alter the distribution of income, and the matter can be understood by making reference to the quote above from Bhagwati, et al. regarding DUP activities. That is, DUP activities seek to improve the economic position of someone by actions that yield "pecuniary returns but produce no goods or services that enter a conventional utility function directly or indirectly [Bhagwati, Brecher, and Srinivasan, p. 18]." The relevant point here, however, is that collective action to redistribute income is driven by individual and group utility functions that give weight to the net wealth position of different members of society. That is, members of a society are not indifferent to the wealth position of their compatriots and so actions that are taken to modify ultimate wealth positions derive from individual utility functions. There are, to be sure, no conventional "goods and services" that enter such utility functions, but the distribution of income—like environmental quality—is a public good that clearly appears in individual and aggregate utility functions. We could regard this situation in terms of Figure 6 where we see a social recognition that the satisfaction of the poor (U_p) is now given greater weight than that of the rich (U_r); W_p is the new social welfare function. The existence of W_p would imply the enactment of policies such as changes in marginal tax rates such that a move from D to D^* in Figure 5 would arise. Notice that while there are efficient and inefficient ways—administratively—to alter the ultimate distribution of income there is no "efficient" or "inefficient" distribution of income without

a prior specification of social objectives regarding income distribution.⁴ But the original motivation for direct income redistribution, coming as it does from a prior respecification of the social welfare function and the social utility function, implies that such collective action does not meet the conditions of rent-seeking behaviour.

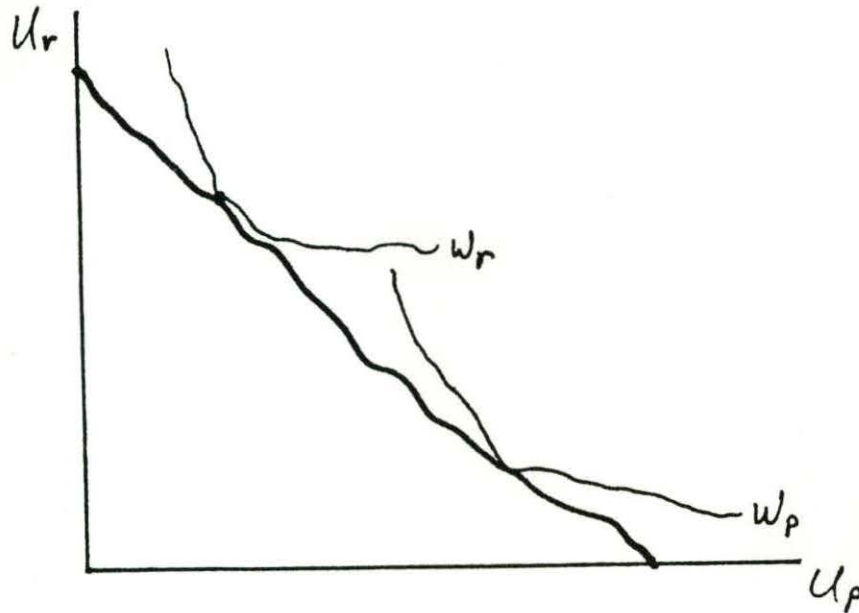


Figure 6. Social Welfare Functions for Two Possible Income Distributions

D. Institutional Transactions that Redistribute Economic Advantage

We come, finally, to that class of institutional transactions that is concerned with the strict redistribution of economic advantage in society; rent seeking exists when scarce resources are used both to alter the product mix in society, and to compete for the rents that are thereby created. Assume a situation in which labour is the only scarce factor available in some fixed magnitude (L^*). There is one good produced according to the production function $Y = aL$ where a is the average and marginal product of labour. A second good is imported at a fixed price P (in terms of Y). Individual consumers have identical and homothetic tastes represented by a set of

indifference curves that reflect both individual and "social" preferences. The free-trade equilibrium would then be given as in Figure 7, where the domestic production of Y is OF, and domestic consumption is measured along that same axis. At point F there are no imports nor any exports and so total consumption equals total production (OF). We call FM the consumption possibility locus, but here it also represents the relative prices of Y and the imported good M.⁵ If community preferences are given by U_1 then social efficiency is found at point C. Free trade is "optimal" since the domestic price ratio given by MF (which also equals the marginal rate of transformation between consumption of Y and imports) is also equal (at C) to the marginal rate of substitution in consumption. Imports are OM^* , consumption of Y is OF^* , and F^*F of Y is exported.

Now allow an import restriction to be imposed so that M is reduced to M^{\sim} , and as a result the domestic price of imports will rise (DD). The cost is really a welfare loss in moving from U_1 to U_2 . Less of the domestic production is being exported ($F''F$), and more is being consumed (OF^{\sim}) because imports are restricted. But the restriction on imports gives economic value to those fortunate enough to have import licenses and so there evolves competition to acquire such licenses, or to protect licenses already held. This is the rent-seeking behaviour that uses scarce resources to yield a new equilibrium. Such point will be reached at the same level of imports (OM^{\sim}) but there will be a smaller total production of Y (say, OF'') arising from the devotion of resources to obtain valuable import rights, a reduced level of consumption of Y (OF'), and less available for export ($F'F''$).

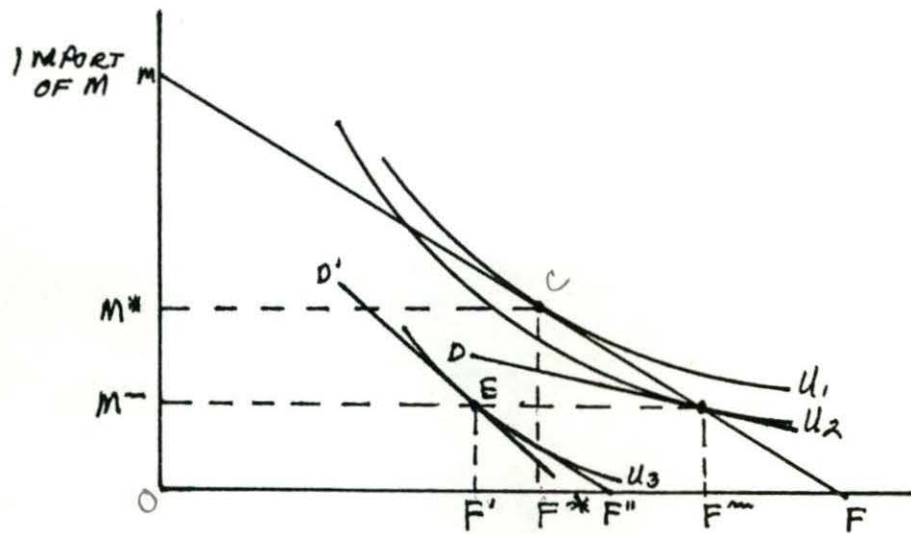


Figure 7. Import Restrictions and Rent Seeking

Conventional analysis would have us treat this rent as a redistribution from consumers to whomever was fortunate enough to receive it. However, the situation is more serious in light of the realization that some of the scarce labour resources will be allocated not to the production of Y but to the securing of licenses or shares of the restricted imports. The long-run equilibrium will occur at a point such as E where utility will be U_3 . We can recast this model in more familiar terms by referring back to the problem of cheaper Italian shoes being restricted from the market. There is a "free-trade" production possibilities frontier, and there is one reflecting the allocation of resources toward the maintenance of import restrictions on Italian shoes. These are denoted as F and R in Figure 8. Notice that the vertical axis, although labeled "Italian Shoes", requires some explanation. That is, Italian shoes are clearly not "produced" domestically and hence one might wonder how we can depict a production possibilities frontier depicting the marginal rate of transformation of domestic shoes into Italian shoes. Recall that the "production" of Italian shoes is, in a sense, represented by

the outflow of foreign exchange to Italy to purchase shoes and so represents a resource cost to the nation in terms of some other goods forgone; the rate at which Italian shoes can be "transformed" into domestic shoes is depicted as the rate at which these forgone goods (an opportunity good as it were) could be transformed into domestic shoes.

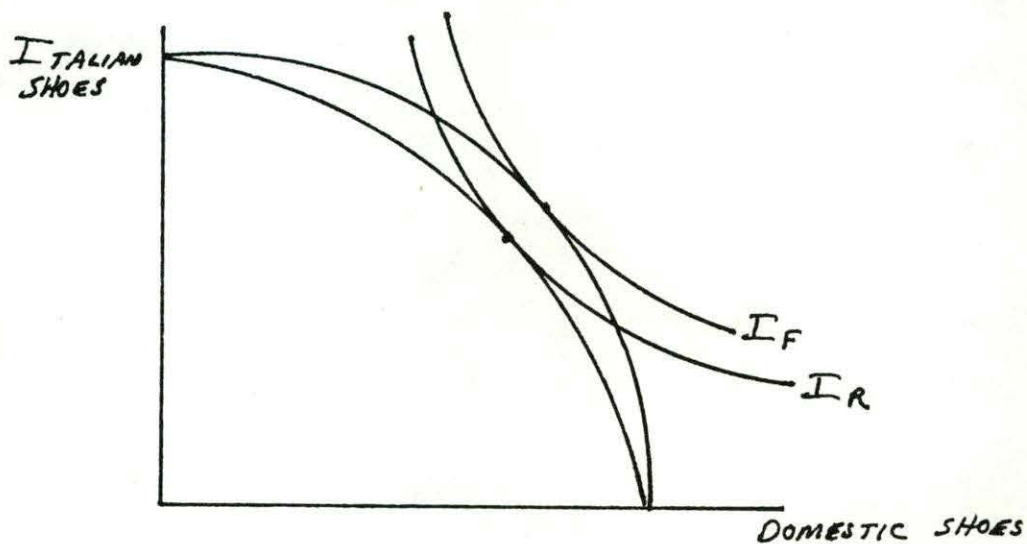


Figure 8. Import Restrictions

We see, therefore, that an institutional change resulting in the imposition of an import restriction alters the social production possibilities frontier from F to R , and results in a change in the relative prices of the two goods under consideration, and a corresponding loss in utility for society. Notice that the difference between institutional change that redistributes economic advantage and that which reallocates economic opportunity is to be found in the nature of the social utility function. In the mine-safety problem we had a family of social indifference curves that revealed social efficiency to be consistent with greater safety conditions in mines (I_1 as opposed to I_0 in Figure 3). In the matter of import restrictions

on Italian shoes there is no social utility function that reveals such restrictions to be socially desired and therefore social efficiency is not achieved with the restrictions; in Figure 8, I_F and I_R belong to the same family of social indifference curves, whereas I_0 and I_1 in Figure 3 are members of two different families. The mine-safety problem is capable of becoming analogous to the shoe-import problem if mine workers were able, through collective action, to achieve something for which there is no argument in the social utility function. Imagine that labourers, through threat of a crippling strike, were able to extract work concessions that maintain wages at their current level, but reduce the work day from 8 hours to 6 hours. This could be depicted in a modified Figure 2 to show a new (interior) production possibilities frontier (S') that would yield reduced production and also a loss in social utility. We see this in Figure 9 where I_S and $I_{S'}$ (in contrast to the indifference curves in Figure 2) belong to the same family of social indifference curves. This is a redistribution of economic advantage rather than a reallocation of economic opportunity.

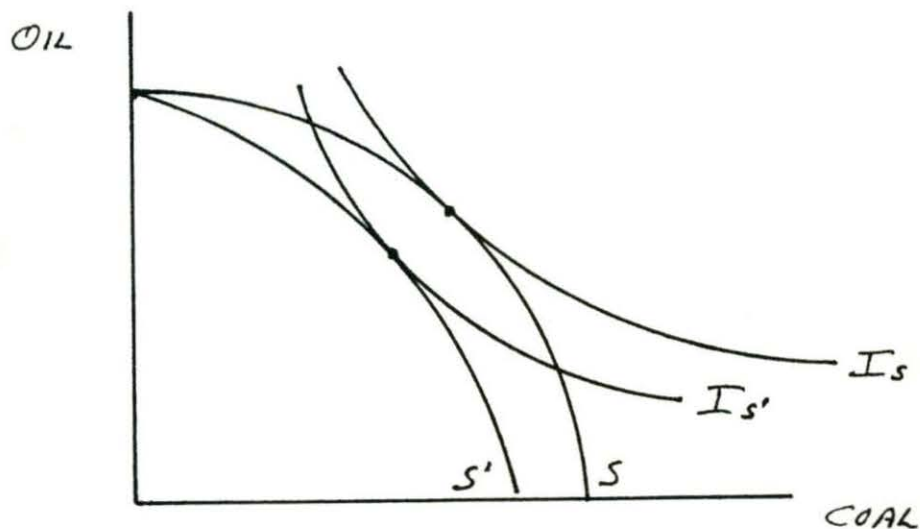


Figure 9. Redistribution of Economic Advantage

II. Economic Opportunity and the Status Quo

The distinction between institutional change that reallocates economic advantage and that which reallocates economic opportunity is seen to derive from an explicit recognition of social preferences and hence is manifest in the aggregating mechanism across members of society (the social welfare function), as well as the relevant consumption bundle as depicted by the social utility function and its associated social indifference curves. The social utility function reflects—with the proper separability assumptions—an aggregation of the individual utility functions of members of society. As we move in Figure 2 from one regime of mine safety to another, two phenomena are present: (1) social preferences for mine safety are changing relative to other goods and services in the consumption bundle; and (2) the weight given to coal miners in collective choice is altered vis-a-vis others in society. The social indifference curves shown there (I_S and I_{NS}) belong to different families and so have no meaning relative to one another. This is shown in Figure 5. The question that arises concerns the relative importance of these two effects. That is, does this reflect a change in the collective balance—the political process—that is the source of the social welfare function which determines who gets to choose? If so, then a different constellation of preferences will be expressed without there being any necessary change in those preferences. Or, is the change driven by a new recognition of—and acceptance for—the need to make the work place safer without any change in the aggregating process across members of society? Here coal miners have not been accorded any new political legitimacy, rather all members of society come to realize that excessive deaths and accidents in coal mines ought to be avoided if at all possible.

The matter of change would then need to be addressed—how do we know if it is "correct" to improve mine safety? If social preferences are indeed conducive to increased mine safety, how much is enough? What decision rule ought to be used? The choice process will be shown to depend, critically, on the status quo safety regime in mining. Consider a status quo institutional arrangement that implies no liability on the part of mine owners for accidents that lead to injury or death to miners—a situation that was quite normal in the early days of the coal industry. If we wished to depict, in a standard manner, the mix of labour and capital in mining it would appear as in Figure 10. Here we see that the relative prices of capital and labour will imply an efficient use of each at K_0 and L_0 . Under the status quo institutional arrangement labourers assume the full risk of work-related accidents and as such there is no incentive on the part of mine owners to invest in unnecessary or "inefficient" safety precautions; as long as labour is abundant relative to jobs in the mines (or elsewhere) the mine owners will have an incentive to preserve the status quo.⁶ We would be inclined to look at this situation and pronounce it as an "efficient" use of labour and capital in the mine.

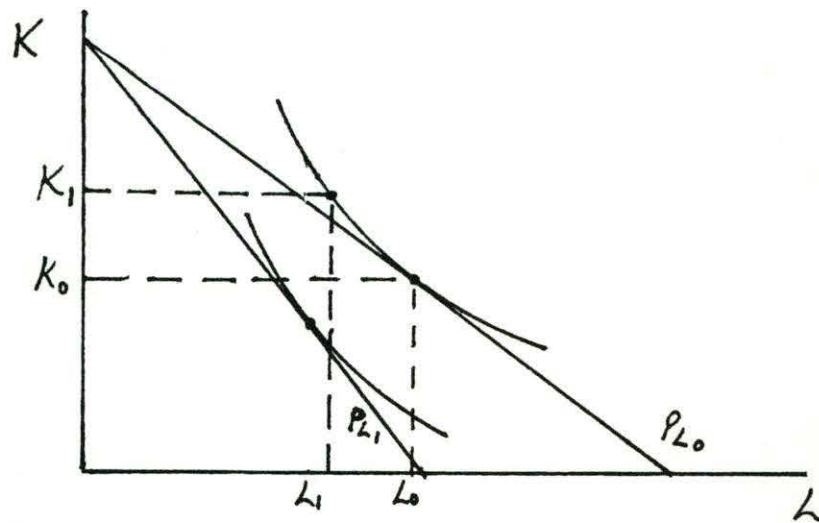


Figure 10. Labour Use Under Two Institutional Regimes

Let us now imagine a different institutional arrangement, one in which labourers hold a property right in their future labour power—such right obligating the mine owners to contribute to an annuity per unit of time worked so as to indemnify any workers or their survivors in the event of an accident. In the language of entitlements the mine owners formerly had privilege and the labourers had no rights with respect to their (the labourers') future income stream [Bromley 1978, 1986, 1987; Commons 1968]. The new structure of entitlements is one of rights on the part of labourers, and duty for mine owners to indemnify those rights if necessary. Leaving aside for now the process by which this new institutional arrangement might be sought by the labourers (and opposed by the mine owners) we can imagine a new relative cost of capital and labour that could be depicted in Figure 10 by the line P_{L1} . Now it seems that the "efficient" mix of labour and capital has been altered by this new institutional arrangement. Those who felt that the status quo was the proper institutional structure will be quick to note that these new relative factor prices mean that mine output is reduced (Q_1 as opposed to Q_0), and that if the former output is to be restored it will now require relatively more capital and less labour (K_1 and L_1). But, of equal importance, there is now an economic incentive for the mine owners to invest in safety equipment that will reduce the probability of accidents. That is,

$$P_{L0} = \text{wages}$$

while

$$P_{L1} = \text{wages} + \text{annuity}$$

where the annuity is determined by the probability of accidents. If the mine owners can reduce accidents there is a tradeoff in the size of the annuity that must be contributed for every hour's work in the mines. Now we can see that there will be a related efficiency calculation of the optimal level of investment in mine safety; the mine is now producing two products as it were,

coal and a certain set of working conditions. Because safety can be thought of as a "non-productive" expenditure that must be undertaken, the investment in safety (its cost) will be balanced against the benefits of safety to the mine owner (a reduction in the required annuity contribution to the miners' fund). Since the benefits of safety represent to the mine owners annuity payments that are no longer required in their previous magnitude, we can also view the marginal benefits of safety as an opportunity cost; the mine owners either invest in safety or they pay an annuity. At very low levels of safety the annuity cost will be high, but as the mine owners spend more on safety we know that the required annuity contribution will fall.

Recall the status quo institutional arrangements in which mine owners carried no responsibility for the accidents to labourers. There was a significant "demand" for safety on the part of labourers in the sense that their families had long-run financial needs whether or not the labourers were fit and able to work. But this demand was not an "effective demand" in that there was no institutional arrangement that would obligate the mine owners to recognize the interests of the labourers. In institutional transactions we have demands without any legal recognition (claims), and we have demands that carry legal recognition (entitlements). In terms of the situation here the status quo institutional arrangements gave labourers a claim reflecting their interest in greater mine safety, but no entitlement. Under the new institutional arrangements the workers have an entitlement to a different working environment and this means that their demand for greater safety is now given recognition and protection.

There are those who will find the greater merit in the status quo structure of entitlements; they will lament government "interference" in the labour market for miners, they will denounce the bureaucratic meddling in the

affairs of mining, and they will suggest that the new higher implicit wage will result in reduced employment opportunities for miners. The question is, therefore, whether there are any arguments within economic theory that one might marshal to inform the debate over mine safety and the matter of reallocating economic opportunity? It is plausible to suggest that we could prove, if only we had better data, that a safer mine is also a more efficient mine. The difficulty with this line of argument is obvious. If the status quo is one of "unsafe mines", and it requires the agreement of mine owners (or those politicians beholden to the interests of mine owners) to make them safer, then the burden of proof is on the labourers (and those representing their interests) to show that safer mines are also more efficient mines. As long as mine owners doubt that, and are able to stall institutional change in search of yet better evidence, the status quo carries considerable inertia.⁷

The issue is precisely one of how we choose to define efficiency, and which point—the status quo or some alternative institutional arrangement—will provide the basis for our efficiency calculation.⁸ Who will speak for the miners? Are we to assume that they have no legitimate claim unless they can bribe the mine owners to invest in greater safety? It seems worthy of our analytical attention that labourers should have to purchase by bribe something which an alternative legal environment would grant to them free. Under the status quo, if they are unable to raise enough money against future earnings to bribe the mine owners into providing a safer work place, some would then suggest that the status quo must be optimal as it stands. The absence of an effective demand for greater mine safety—or the inability to meet the necessary reservation price of the mine owners—is taken as sufficient evidence of the efficiency, and, by implication, optimality, of the status quo.

The difficulty of relying on benefit-cost analysis of institutional change is that the status quo institutional environment defines what is a relevant cost. In the absence of action on behalf of miners by the state those costs of an accident borne by labourers are simply not relevant to the decision calculus of the mine owners; such inconveniences to labourers and their families are merely Pareto-irrelevant externalities. The conventional distinction between allocative efficiency and redistribution forces us to search in vain for terminology to describe the mine safety problem. Is it selfish "rent seeking" and mere income redistribution? Is it a move toward allocative efficiency? There will be those who would suggest that the potential compensation test of Kaldor and Hicks provides just the mechanism whereby such change can be evaluated.

The standard approach to the problem under discussion here would be to determine whether or not the potential gainers from a change would be able to compensate those who had lost from such a change. If such compensation were possible, even though it does not actually occur, and if there is then any residual for the potential gainers after their hypothetical compensation to the losers, then the change satisfies the conditions of a potential Pareto improvement. Consider the following expression V to reflect the discounted present value of the change under discussion:

$$V = -C_M + \sum_{i=1}^T \frac{(B_t - C_t)_M + (B_t - C_t)_L}{(1+i)^t} \quad (3)$$

where:

V = net present value of the change

C_M = the initial costs for increased safety made in $t = 0$

$(B_t - C_t)_M$ = increased net income accruing to mine owners arising from the higher morale and productivity of labourers

attributable to the new safer working conditions

$(B_t - C_t)_L$ = increased net income accruing to labourers arising
from the new improved safety conditions

i = social rate of time preference

If there is to be an economic surplus leading to an institutional change we would require that the following condition be met:

$$\sum_{t=1}^T \frac{(B_t - C_t)_L}{(1+i)^t} > C_M - \sum_{t=1}^T \frac{(B_t - C_t)_M}{(1+i)^t} \quad (4)$$

In other words, the present-valued net benefits to the labourers must exceed the present-valued net benefits to the mine owners for having made the expenditure in greater safety. If this condition holds then it represents a potential Pareto improvement and we would regard aggregate efficiency to be thereby enhanced. We can also express this condition as:

$$PVNB_L > C_M - PVNB_M \quad (5)$$

The problem is, of course, with the idea of ascertaining exactly how much labourers will benefit by various levels of safety, and also what will be the ultimate impact on the net benefit stream over time to the mine owners. Moreover, being content with potential as opposed to actual compensation relieves us of the practical difficulties associated with the presence of transaction costs that fall differentially on the labourers as opposed to the mine owners. That is, the status quo requires that the labourers initiate the expensive and tedious process of gathering information about the costs and benefits of safety measures, the negotiation of a new safety regime, and the enforcement of that regime. It is unlikely that the mine owners would pay any of these costs and so the workers would be required to incur additional

expenses in order to alter an institutional environment that only they seem to dislike. When transaction costs are admitted to the analysis condition (5) becomes:

$$PVNB_L - TC > C_M - PVNB_M \quad (6)$$

This illustrates that the presence of transaction costs will serve to act as a deterrent to change that must be initiated by the labourers. Finally, reliance on the potential Pareto improvement means that we do not need to fuss about exactly how it is that the labourers are to acquire the necessary capital to compensate the mine owners.⁹ But these operational and empirical problems are minor compared to the conceptual problem that gives inertia to the status quo structure of entitlements, even assuming that our interest is confined to potential, as opposed to actual, compensation.

Consider the alternative status quo institutional structure, one in which labourers have an entitlement to their future income stream and so the problem is one of attempting to determine whether or not it is a potential Pareto improvement to alter that structure. We would still be interested to know about the present-valued net benefits from the two situations, but now it is unlikely that any initial investment comparable to the C_M from equation (6) would be required. That is, if the safety conditions in the mine are to be changed it would not imply the expenditure of funds to destroy the safety measures in place. Rather, the existing safety devices would simply be allowed to deteriorate and, over time, to become ineffective. The absence of these initial costs would mean that the problem would be formulated as one in which safety conditions would be allowed to deteriorate if

$$PVNB_M - TC > PVNB_L \quad (7)$$

That is, if the present-valued net benefits to the mine owners, less their necessary transaction costs (since it is they who would be interested in

altering the status quo), were in excess of the loss to the labourers. But how are we to measure the present-valued net benefits to the labourers and the mine owners? The answer requires that we return momentarily to the situation in which the status quo institutional arrangement is one of no safety precautions in the mines. Recall that the conventional efficiency calculation would be to see if the value to the labourers of enhanced safety were in excess of the required safety investments (C_M) plus the present-valued net benefits that would accrue to the mine owners ($PVNB_M$). This latter component ($PVNB_M$) may be positive or negative. If it is positive it would imply that the annual operating costs of the new safety equipment were more than offset by the value of the annual increase in coal production made possible by a more satisfied work force, and fewer shutdowns because of safety-related problems. If it is negative it would imply that the annual operating costs of the new safety equipment exceeded the incremental value of coal that could be produced.

So the estimation of C_M is seen to be a strict engineering problem, and the estimation of $PVNB_M$ is concerned with the annual stream of coal produced (its economic value that is) net of the increased annual costs made necessary by the safety devices now in place. Under either institutional arrangement, that is, regardless of whether we start with a "risky" mine or a "safe" mine, the estimate of $PVNB_M$ would be the same; there is no reason to suppose that it would differ under either institution. This can be seen by noting that it consists of two elements: (1) changes in coal output; and (2) changes in the operating and maintenance (O & M) costs of the mine. The O & M costs would increase for the "safer" mine constituting a cost element in $PVNB_M$, while the increased value of coal production could either exceed these new costs or fall short of them. If we assume that a safer mine leads to an increase in coal

production because of higher morale and fewer shutdowns for safety concerns then the change to a safer mine would reveal $PVNB_M > 0$.

Starting from a "safe" mine and considering an institutional change to allow it to become less safe would then be seen to represent a "benefit" to the owner of not being required to incur the O & M costs, and a "cost" to the owner of a reduction in the value of mine output owing to low worker morale and more frequent interruptions of work because of marginal working conditions. Either way the components of $PVNB_M$ remain unchanged, although in the one instance $PVNB_M$ may be positive (since it is a net value), and in the other negative.

But what of the conceptual problems with $PVNB_L$? We have already seen that the laborers have a demand curve for safety, derived--as with all demand curves--from both their utility functions and from their income position. That is, we ask what they would be willing to pay for increased safety in the workplace and regard this as their private value of increased safety. Their total willingness to pay for increased safety would be regarded as the area under their demand curve for increased safety. If we are considering an institutional change as regards greater mine safety then this discounted willingness to pay on the part of laborers becomes $PVNB_L$. It is this magnitude that will then be compared with the necessary investment costs (C_M) and with the magnitude of $PVNB_M$. Referring back to equation (5), or (6) if we want to regard transaction costs, it is a potential Pareto improvement if those conditions are met; if not then it is "inefficient" to improve upon mine safety.

Let us now start from a status quo of a "safe" mine and enquire about the conditions under which it would be efficient for there to be less safety. Under this starting position the question that is relevant to the labourers is

rather different from the one that was relevant under the other status quo. That is, we no longer ask about their demand for safety (what they would be willing to pay) but ask instead what they would require by way of compensation to forego that which is legally theirs (a high degree of safety). We have, therefore not a demand curve which will give us total willingness to pay for safety, but a reservation curve that illustrates what they would require in compensation to give up the status quo safety regime; the reservation curve maps their reservation price at each level of possible safety, commencing with the status quo.

The reservation curve depicts how the labourers view the increased psychic and financial costs of diminished safety in the work place, and the area under the curve is the total willingness to accept compensation for having to work in conditions that are less safe than the status quo. Unlike the demand curve for safety, which depicts how much they would be willing to pay for greater safety, the reservation curve is not dependent upon their current level of income but rather upon their more genuine (that is, unmodulated by their current income) preferences for safety. There is some theoretical evidence to suggest that willingness to pay will be "close to" willingness to accept compensation when the wealth effects as between the two situations are "small" [Willig, 1976]. In cases such as mine safety, where the total income of the labourer is derived from exposure to a particular safety regime, it would be difficult to disregard the wealth effects; the two measures of consumers' surplus would likely be very different and so our decision rule for institutional change is seen to have two different forms depending upon from where we start. Under the status quo of no safety procedures (or investments) in the mines the conceptual and empirical base of $PVNB_L$ is the laborers' willingness to pay for greater safety (WTP). Under the

status quo of "safe" mines the conceptual and empirical base for $PVNB_L$ is the laborers' willingness to accept compensation in order to work under more tenuous conditions (WTA). We thus have the following:

Case I: Unsafe Mine

Here the decision problem concerning whether or not there should be an institutional change to make the mine more safe would be formulated as:

$$V = WTP_L - (C_M - PVNB_M) \quad (8)$$

and an institutional change would meet the potential Pareto improvement condition if:

$$WTP_L > C_M - PVNB_M \quad (9)$$

Case II: Safe Mine

Here the decision problem concerning whether or not there should be an institutional change to make the mine less safe would be formulated as:

$$V = PVNB_M - WTA_L \quad (10)$$

and an institutional change would meet the potential Pareto improvement condition if:

$$PVNB_M > WTA_L \quad (11)$$

We can combine equations (8) and (10) to form:

$$PVNB_M - WTA_L = WTP_L - C_M - PVNB_M \quad (12)$$

which simplifies to:

$$WTA_L = C_M - WTP_L \quad (13)$$

This means that the two status quo institutional arrangements would end up with the same ultimate level of safety only if the necessary investment cost in moving from the unsafe conditions (C_M) were equal to $WTA_L + WTP_L$. That is, equation (11) is satisfied only if:

$$C_M = WTA_L + WTP_L \quad (14)$$

In the absence of this rather heroic assumption, the status quo institutional structure will dominate the final institutional structure. The Coasian suggestion that the initial structure of rights makes no difference for the ultimate outcome is thus seen to be a very special case indeed.

III. Conclusions ¹⁰

The elaboration of collective actions that are traditionally regarded as furthering economic efficiency or merely redistributing income is seen to entail two additional forms—one that reallocates economic opportunity, and one that redistributes economic advantage. Rent-seeking behaviour is seen to be present in the latter case only. Social utility is an expression of preferences over the economic mix of goods and services (both private and collective/public) and the tradeoffs implied by those preferences. From Sen we might say that here we are concerned with the aggregation of individual interests to arrive at collective decisions. Social welfare, on the other hand, is the expression of current judgments over the appropriate roles of individuals and groups in determining that very aggregation of individual interests; it is the aggregation of individual judgments to arrive at welfare judgments for the collectivity.

Collective action and the institutional transactions that result therefrom are thus seen to have four possible motivations and outcomes. Those that result in economic efficiency are not based on changes in either the social utility function or the social welfare function. They are motivated by changes in relative scarcities (prices) rather than by changes in preferences, attitudes, or tastes. Collective action and institutional transactions that

directly redistribute income are based on changes in the social welfare function rather than changes in relative scarcities or changes in the utility of society's product mix. Institutional transactions that reallocate economic opportunity may arise from either changes in social utility relations, or changes in social welfare considerations. If via the former, then changing preferences for safety, changing income effects, or a shift in attitudes are candidates. If via the latter then the impetus comes from a change in the "weight of authority" (or political legitimacy) as between owners of capital and owners of labour.

Finally, institutional transactions that redistribute economic advantage are not based on the specifications of a social welfare function, nor are they based on new forms of a social utility function. Rather, certain members of the polity are able to countermand prevailing conceptions of both social utility and social welfare in order to improve their relative position. The process of social choice allows dysfunctional institutional change when economic advantage is redistributed. Unlike the first three types of institutional change—each of which makes a positive contribution to social welfare—those which redistribute economic advantage are strictly redistributive of welfare. Rent-seeking, as a special class of redistributive institutional change, further compounds the problem by reducing total social welfare.

A related aspect of the development of two additional types of institutional transactions is that it calls into question the venerable concept of "market failure" as a precondition for collective action. The mine-safety example illustrates that the "efficient" outcome very much depends upon where one starts in terms of presumed entitlements. But the idea of market failure as a necessary condition for collective action suggests that no

change is justified unless it can be deemed Pareto safe--and Pareto safety is a function of the status quo. Moreover, market failure logic suggests that the resulting collective action be labeled "government intervention" into the market. When the state mobilizes its resources to make society safe and inexpensive for for all manner of commerce it is, apparently, doing what is expected of it. But when the state shows an interest--in response to articulated social pressure--in mine safety, child labour, or toxic chemicals in drinking water then that is government "intervention."

Rather than a market/market failure/government intervention metaphor I suggest that we start with the concept of individual and group opportunity sets that are defined--determined--by the institutional arrangements in society. These institutional arrangements consist of both conventions and entitlements. The problem of collective choice arises when the existing institutional arrangements are found wanting in the face of new technical opportunities, with the recognition of new tastes and preferences, with the acquisition of new knowledge, or with the realization that one party is made to bear unwanted costs. The essence of modern society is that of conflicting interests, of particular patterns of interaction, and of particular outcomes. Individuals have interests that they will hope to articulate as claims in the hope of acquiring entitlements. It is the struggle for legal sanctions to have one's interests given protection by the state that is the stuff of collective action. The motivations for--and results of--collective action cannot be restricted to contributions toward economic efficiency or else redistributions of income. On the contrary, most collective action is probably in the interest of reallocating economic opportunity, or it is dedicated to the redistribution of economic advantage.

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NOTES

1. An earlier version of this paper was presented at a conference on the Economics of Institutional Change and Design in Vienna, Austria, June 2-4, 1987. I am grateful to several participants for comments that have helped me to clarify the argument--Christoph Badelt, Henry Hansmann, Richard Nelson, Douglass North, and Burt Weisbrod have been especially helpful. I have also benefitted from comments by John Braden, Mike Carter, Jean-Paul Chavas, Ian Hodge, Chris Nunn, and Harold von Witzke. Finally, seminar participants at the Universities of Cambridge and Reading have been helpful in clarifying the points being made.
2. These four classes do not preclude the possibility of certain institutional changes having more than one type of effect.
3. My treatment of institutions is consistent with that of Matthews 1986; Lewis 1986; North and Thomas 1970; Schotter 1981; and Ulmann-Margalit 1977.
4. There will be, at the margin, an incentive effect in taxes such that the production possibilities frontier may be affected by tax rates, but these differential production possibilities should not be confused with judgments about social indifference curves.
5. In the original Krueger model the replacement of production of Y by importation and distribution of M displaced resources and so the consumption possibility locus was convex rather than linear. We do not lose any analytical power by assuming here a linear FM.
6. Of course if a miner is injured or killed the mine owner will always have the opportunity to console the widow with small (or even large) gifts. But this act of charity is precisely that and as long as it remains voluntary it is not regarded as a marginal factor cost to the owner.
7. We find a similar situation in the current arguments over the health aspects of smoking. In spite of what most regard as convincing evidence, the tobacco interests are adamant that the data are not conclusive. This "uncertainty" is then used to oppose institutional change regarding smoking in public places; the plea is that we must wait for better evidence before we infringe on the (presumptive) "rights" of smokers.
8. Some may well protest to the effect that the Coase Theorem "proves" that the outcome will be invariant with respect to the status quo structure of rights. To deal with Coase on his own terms, Coase invokes two assumptions that assure this happy result. He first assumes that transaction costs are zero; in such instances of zero information costs, zero contracting costs, and zero enforcement costs it follows axiomatically that the "outcome" will be

identical since there can be no residual unbargained gains from trade. Secondly Coase assumes away wealth effects of the two institutional regimes. For related arguments see Dahlman 1979.

9. This problem is usually dismissed by asking that the reader assume "perfect capital markets."

10. I am particularly grateful to Chris Nunn for helping me to summarize my argument here.