10-1992

Compensation and Political Feasibility: Facilitating Welfare Improving Policies

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Abstract
There is a broad consensus among economists, policymakers, and informed citizens that free-market economics do not preclude many inefficiencies in resource allocation. There are many circumstances where policy interventions have the potential to achieve a "Pareto improvement" in the sense of making some people better off without making others worse off. The challenge to any particular market-oriented society is to design those mechanisms, organizations and institutions that identify the limitations of free-markets and result in those reforms that seek Pareto-improved outcomes.

Keywords
Agriculture, Policy, Welfare, Pareto improvement

Disciplines
Agricultural and Resource Economics | Agriculture | Economic Policy | Social Welfare

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GATT Research Paper 90-GATT 19
October 1992

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This material is based upon work supported by the Cooperative State Research Service, U.S. Department of Agriculture, under Agreement No. 89-38812-4480.

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture.

This paper is forthcoming in *GATT Negotiations and the Political Economy of Policy Reform,* edited by Gordon C. Rausser. Berlin: Springer-Verlag.

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COMPENSATION AND POLITICAL FEASIBILITY: FACILITATING WELFARE IMPROVING COALITIONS

Richard E. Just, Gordon C. Rausser, and David Zilberman

1. INTRODUCTION

There is a broad consensus among economists, policymakers, and informed citizens that free-market economies do not preclude many inefficiencies in resource allocation. There are many circumstances where policy interventions have the potential to achieve a "Pareto improvement" in the sense of making some people better off without making others worse off. The challenge to any particular market-oriented society is to design those mechanisms, organizations and institutions that identify the limitations of free-markets and result in those reforms that seek Pareto-improved outcomes.

Several phenomena have been identified that lead to suboptimal performance of competitive markets. Traditional welfare economics has identified externalities and public goods as sources of "market failure." Without adequate intervention, competitive markets may lead to the excessive generation of those goods responsible for negative externalities and the underprovision of goods resulting in positive externalities. An incomplete set of risk markets is another potential reason for suboptimal behavior.

In general, limited or incomplete information is a major reason for imperfect market performance. Moreover, Simon (1957) identified bounded rationality in order to formally recognize that humans have limited ability to store and process information. Traditional welfare economics has also isolated monopolistic behavior as sources of imperfection, calling for antitrust regulation in some instances and public sector regulation where a "natural monopoly" is warranted. To these possible sources of market imperfections, other phenomena including ill-defined property rights, principal-agency distinctions, asymmetric

information, moral hazard, and adverse selection can, under various circumstances, can be added to the list.

In a seminal piece, Coase (1960) elaborated on the role of property rights in explaining suboptimal performance of market economies. He argues that ill-defined property rights and liability rules lead to misallocations of resources. In a world of zero transaction costs, a well-functioning legal system and a clear definition of entitlement allow economic agents to achieve efficient resource allocation by private negotiations. Of course, we do not live in a world of zero transaction costs. Stiglitz (1985) has used imperfect informational frameworks to argue that, even when economic agents are rational and property rights are well defined, resource allocation may be inefficient. In this framework, scarcity and unequal distribution of information explains various inefficiencies in resource allocation as well as many of the observed institutional and contractual arrangements that have emerged. In many cases, information deficiencies lead to market failure; therefore, the design of policy interventions must consider screening and monitoring possibilities to obtain desired outcomes.

The above approaches view the market as the dominant mechanism for resource allocation. Inefficiencies that arise are the result of limitation in the *economic man* and the undesirable properties of informational, legal, and technological structures. Recent theories of political economy introduce a new source for inefficiency, namely, political failure, and a new factor affecting resource allocation, *the government.* As Aaron (1989) noted in his recent Ely lecture, we must design and implement policies that are not only robust economically but politically as well.

In the neoclassical Arrow-Debreu model, there is one weighting scheme that affects prices and quantities; and this is the distribution of wealth. Political economy models introduce another element—distribution of political power—that affects resource allocation through legislation and executive branch policies. Wealth and political power are not unrelated; wealth actually may be used to obtain political power. Still, the distribution of

economic and political power may be sufficiently different for the political system to substantially modify the outcomes of the pure economic system.

Political and economic considerations often lead to policy choices that are suboptimal from the standpoint of first-best outcomes but are, nevertheless, implemented to enhance the welfare of groups with substantial political power. In this second-best world, how can conventional welfare analysis be modified to isolate political-economic coalitions that will sustain welfare-improving policy reform? Can policy reforms be sustained without the simultaneous institution of compensation schemes that effectively counter the obstructionist activities of powerful interest groups? Both of these questions will be investigated in this chapter by modifying and extending the standard tools of welfare economics employed in Chapter 1. In contrast to other studies in this volume, a complete political-economic framework which admits both political and economic markets will not be pursued. No attempt will be made to explain government behavior. Instead, we will recognize that policy reforms that seek to improve efficiency of resource use can only be implemented if some account is taken of the distribution of political power and institutional feasibility. In essence, the proposed framework will modify standard efficiency analysis by identifying policy options that improve efficiency and are politically feasible. It will extend standard analyses by formally incorporating institutional mechanisms that sustain policy reform through the implementation of compensatory transfer schemes that assist in the formation of supporting political coalitions.

2. Foundations of Modified and Extended Welfare Analysis

Traditionally, the analysis of economic welfare has focused on measurement of the welfare of producers and consumers. Producers' and consumers' welfare is usually measured by producers' and consumers' surplus (Currie, Murphy, and Schmitz 1971). In traditional economic welfare analysis, if a policy makes the sum of the two surpluses increase it is

pronounced a Pareto-preferred policy even though one group suffers a loss because the other group's position is improved more than the first group loses. In this sense, traditional welfare economics has focused primarily on economic efficiency and only secondarily on equity. The validity of such a practice assumes that lump sum transfers among groups are both politically and institutionally feasible as well as costless.

In reality, costless lump-sum transfers are rarely, if ever, possible. Agencies incur costs in administering transfers. And, in many circumstances, the behavior of individuals is affected by their wealth which, in turn, is affected by transfers. If so, economic efficiency is altered by a transfer scheme and the sum of producers' and consumers' surplus is no longer a valid measure of the associated change in efficiency. What this means is that policy analysis cannot separate the problems of maximizing the size of the pie and distributing the pie. The two must be considered simultaneously.

Problems of political feasibility and/or institutional bottlenecks must be basic components of any operational analysis of economic policies. Political considerations imply that many alternative economic policies are not feasible or cannot be sustained without the simultaneous institution of compensation schemes that meet the distributional concerns of various special interest groups. With reforms and the implementation of compensation schemes comes the need for new institutions to ensure that the reforms are sustained and the compensation schemes are effectively administered. Accordingly, institutional feasibility and associated costs must also be integrated into the modified and extended analysis of economic efficiency.

To incorporate political and institutional considerations, conventional economic welfare analysis of public policy must be extended. In this section, we first consider how institutional feasibility modifies the tradeoffs that would otherwise be possible with lump-sum transfers. Political feasibility is then incorporated and several alternative criteria are considered to complete the framework for analyzing policy reforms.

2.1. Institutional Feasibility in Economic Welfare Analysis

The problem raised by nonexistence of true lump-sum transfers where redistribution must be accomplished by compensation schemes that alter economic efficiency is represented in Figure 1. Here, the economic welfare of two groups are depicted—group X on the horizontal axis and group Y on the vertical axis. Suppose that the current state of the economy resulting from current policies and resource endowments is at point A. Now consider a change in policy—for example, a reduction of producer subsidies in agriculture—that would result in a move to point B. By this change, group X (producers) becomes worse off and group Y (consumers) becomes better off.

According to the criteria of traditional welfare economic practice, the improvement in economic efficiency of this change would be evaluated according to the difference in the broken lines with slope -1 that run through points A and B—evaluated on either axis. For example, the change in the sum of welfare across both groups is from W_0 to W_1. Movement along the broken lines assumes costless lump-sum redistribution. Thus, the most efficient policy can be selected and then the welfare can be redistributed according to other criteria.

Figure 2 represents the same two policy alternatives but assumes that redistribution must be accomplished through specific mechanisms that fail to admit lump-sum transfers. For example, points along the curve B_1 may represent the welfare tradeoffs that are feasible between the two groups by paying producers an initial once-and-for-all compensation payment for the loss of subsidies. In the case of the United States, the necessary funds for compensation and the costs of administering the scheme could be financed from general income tax revenues. In this context, it is important that the welfare tradeoffs incorporate the institutions and their associated costs through which the compensation is to be achieved. Movement along the curve B_1 represents changing the level of compensation. These tradeoff curves can bend upward because income taxation becomes increasingly distorting as the amount increases, because producers receive decreasing benefits due to the necessary intertemporal reallocation of income, etc.

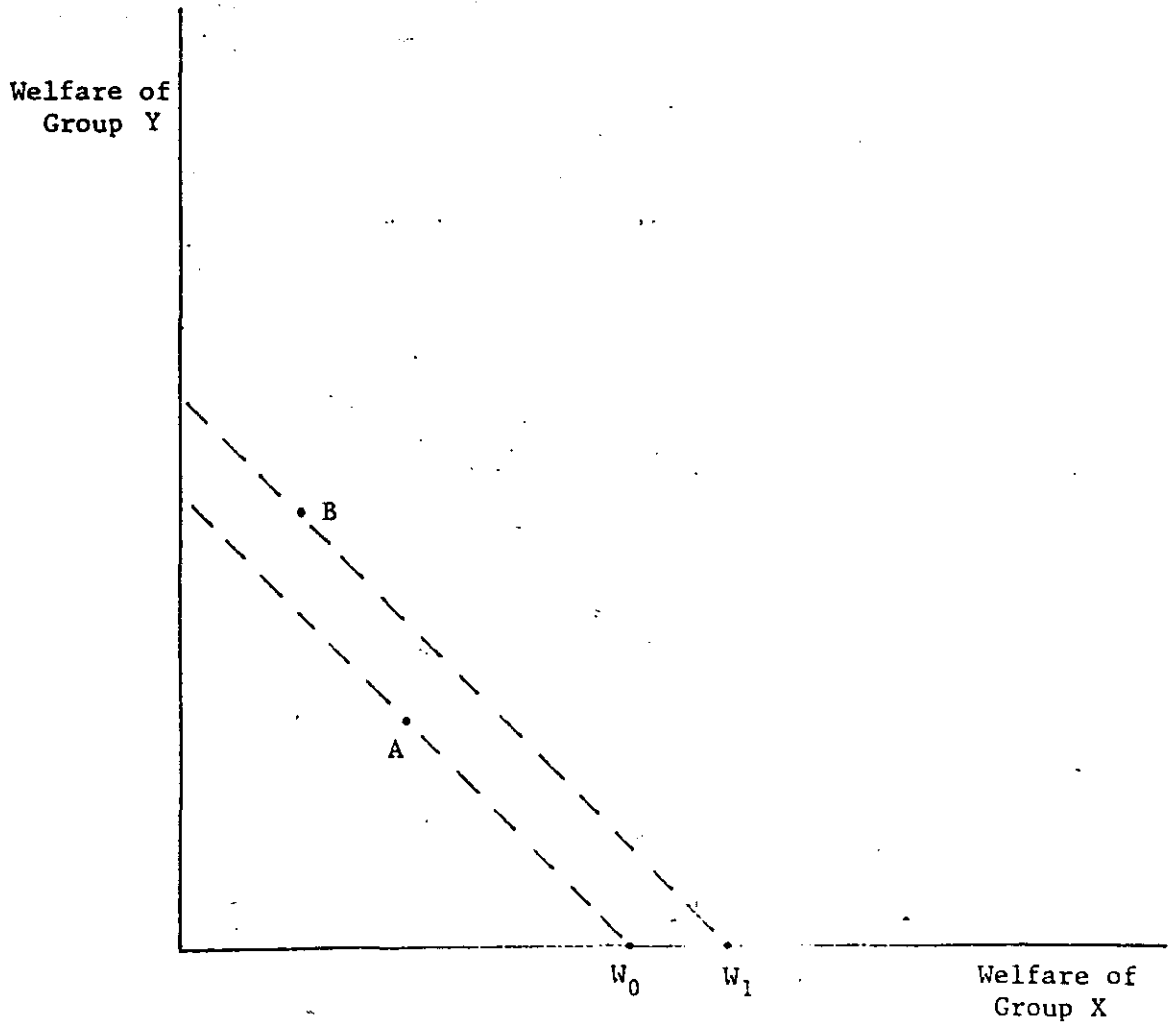

Figure 1. Comparison of Policies with Lump-Sum Redistribution

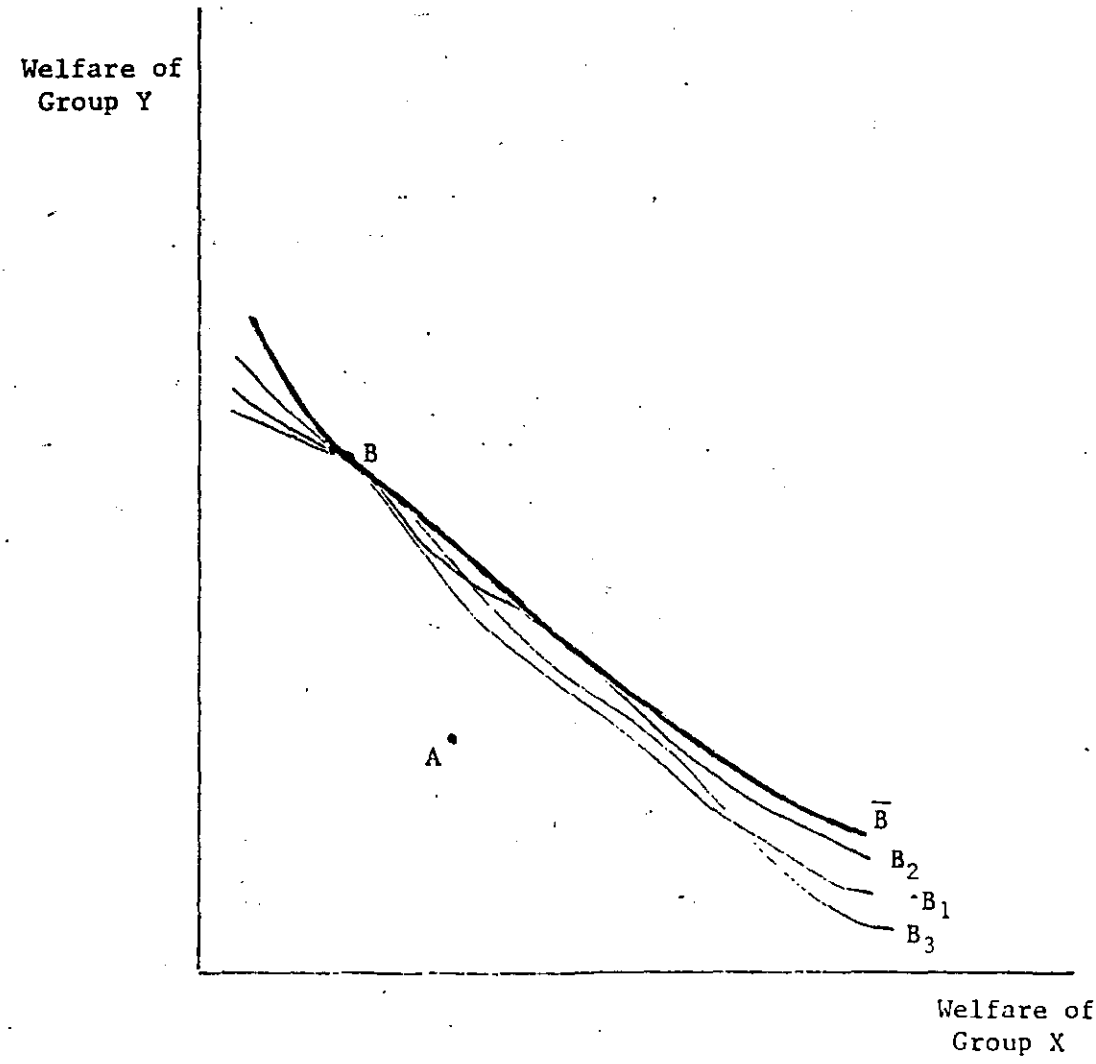

Figure 2. Comparison of Policies with Institutionally Feasible Redistribution

In reality, there may be many alternative mechanisms or compensation schemes whereby the distribution of benefits from policy B can be altered. Each would have a tradeoff curve such as B_2, B_3, ..., which would reflect the change in welfare for each group given the particular institution's set up or use, its costs, and the way those costs are financed (e.g., income taxes, producer levies, etc.). Once all such compensations schemes are identified and evaluated, one can find the envelope curve, $\bar{B}$, which represents the best redistributions that can be attained under policy B given all compensation possibilities. Policy B would be preferred to point A if the envelope curve, $\bar{B}$, passes above and to the right of point A.[1]

2.2 Political Feasibility in Economic Welfare Analysis

Political forces play a major role in comparing types of policies, compensation schemes, and their outcomes. To incorporate these forces, first note that certain types of policies may not be politically acceptable. For example, an export tax is illegal under the U.S. Constitution so such a policy could not be considered as a policy B for improving upon the current state A. Second, certain types of compensation schemes may be politically unacceptable because of their implications for certain special interest groups. For example, financing compensation for farmers (even partially) by direct reduction in social security payments may be politically unacceptable even though other schemes that indirectly reduce the real income of social security recipients may be politically acceptable. For purposes of later politically feasible considerations, all such politically unacceptable compensation mechanisms should be ignored in constructing the envelope curve $\bar{B}$ in Figure 2.

Aside from these considerations, a criterion function must be superimposed on the analysis. This is demonstrated in Figure 3. Again, point B represents a policy alternative to the current policy A. The envelope of institutionally feasible redistributions under policy B is represented by $\bar{B}$. Now consider indifference curves associated with criterion functions such as the curve P. This curve runs through point A and is defined such that all points above it are politically preferred to point A and all points below are not. To be politically preferred

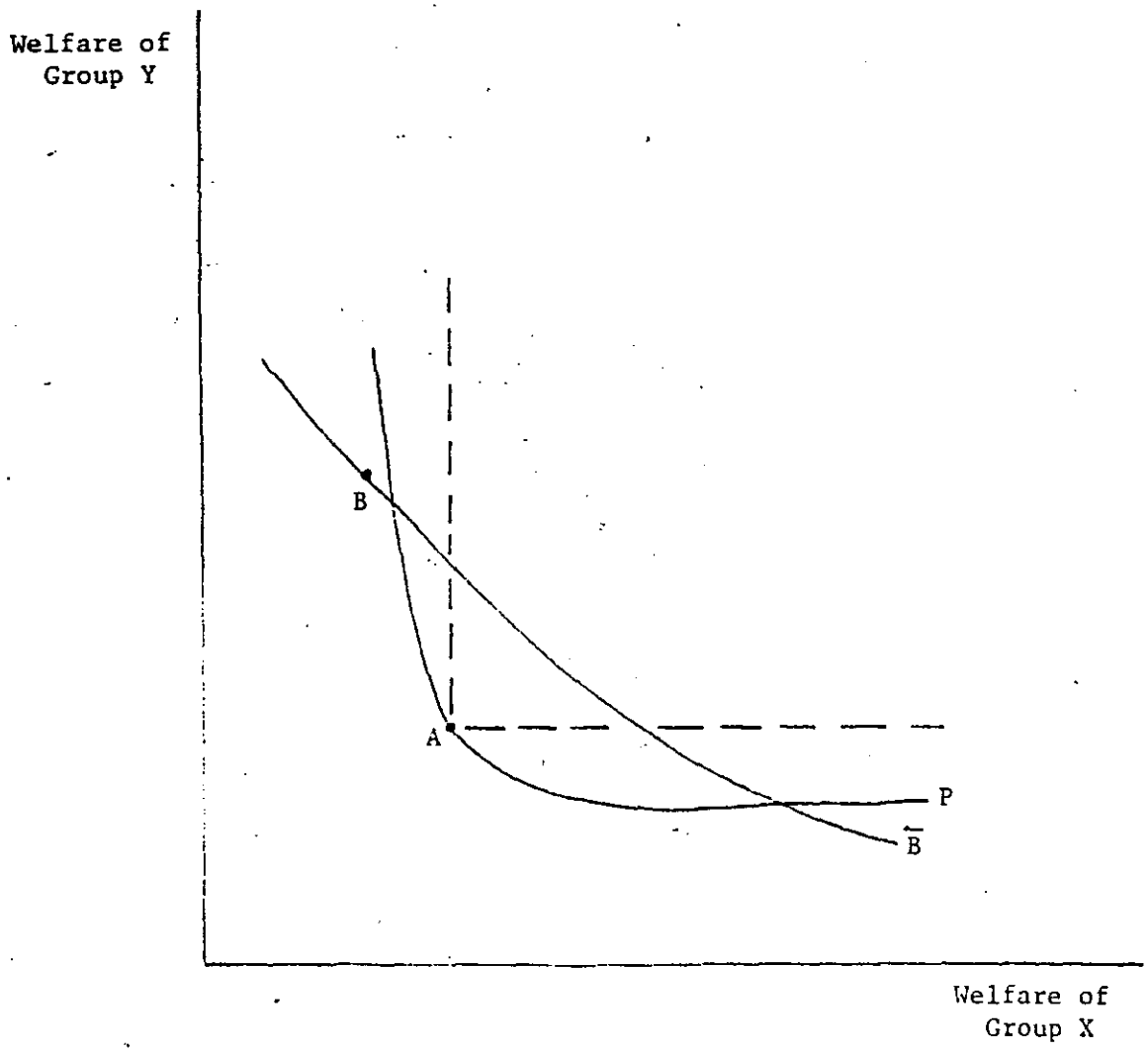

Figure 3. Joint Consideration of Political and Institutional Feasibility of Alternative Policies

means that policymakers as a group would not only choose outcomes above the curve over the current situation at point A but also that outcomes above the curve would be politically sustainable, i.e., opposition from certain interest groups would not develop such that the policy would be reversed or altered once instituted.

In Figure 3, policy B would be both institutionally feasible and politically preferred to point A if and only if the envelope curve, $\bar{B}$, of institutionally feasible redistributions has some segment above and right of the political indifference curve P which passes through point A. This segment is represented by the heavy segment of the curve, $\bar{B}$, in Figure 3. Only points on this segment (and points both above P and below $\bar{B}$ associated with inefficient compensation schemes) merit substantive consideration. Points along this segment do not necessarily satisfy the criteria for a Pareto welfare improvement. Only the points on this segment that are both above and right of point A (the points between the two broken lines extending from point A in Figure 3) would constitute a Pareto improvement, i.e., would have one group better off without the other being worse off. Of course, some portions of the heavy segment represent alternatives where one group is hurt but by a small enough amount relative to the other's gain that the resulting outcome is politically stable and preferred.

2.3 Optimization in Policy Selection

In traditional economic welfare analysis of public policy, the criterion for policy selection is maximization of social welfare. Social welfare is represented mathematically by a social welfare function that is a function of each individual's or group's welfare. The exact form of this function has been the subject of considerable debate, and agreement has not been reached. The traditional criteria associated with potential compensation based on producers' and consumers' surplus, in effect, assume that social welfare is the simple sum of all individuals' welfare. From society's point of view, one dollar is just as valuable in one person's hands as another's. Some (e.g., Rawls 1971) have purposed functions on moral and

philosophical grounds that are heavily oriented toward income equality, e.g., the welfare of society is defined by the welfare of the least well-off individual. Others view the public-sector criterion function as determined by the political institutions or constitution currently in place which makes this criterion function essentially synonymous with the political preference function (Buchanan and Tullock 1975, Rausser and Freebairn 1974, Zusman 1976).

For purposes of discussion, we assume here that a social welfare function as well as a political preference function can be used to evaluate alternative policy reforms. This suggests that several alternative criteria that could be used to evaluate policy reforms. One possibility would be to maximize social welfare, S, subject to institutional and political feasibility. Another would be simply to maximize political preferences, P, subject to institutional feasibility and then examine the implications for social welfare. Yet another possibility would be to maximize political preferences subject to institutional feasibility and a constraint that social welfare not violate some prespecified value.

These three alternatives are represented in Figures 4, 5, and 6. In all three figures, the current state is represented by point A and the outcome under an alternative policy is represented by point B. Institutionally feasible redistributions of point B are represented by the curve, $\bar{B}$; and the indifference curve associated with political preferences passing through point A is represented by the curve P.

Figure 4 considers the maximization of social welfare subject to political and institutional feasibility. Note that only points both above P and below or on $\bar{B}$ are both politically and institutionally feasible. Thus, the object is to choose the point among this feasible set that attains the highest social indifference curve. Following standard assumptions where social indifference curves do not cross and higher curves lie upward and to the right, point C will be the optimum if the social indifference map contains an indifference curve such as S_1 where the social indifference curves are less steep than $\bar{B}$ and thus tend to favor group Y. Point D will be the optimum if one of the social indifference curves such as S_2 has a tangency to the segment of CE of $\bar{B}$. Point E will be chosen if the social indifference

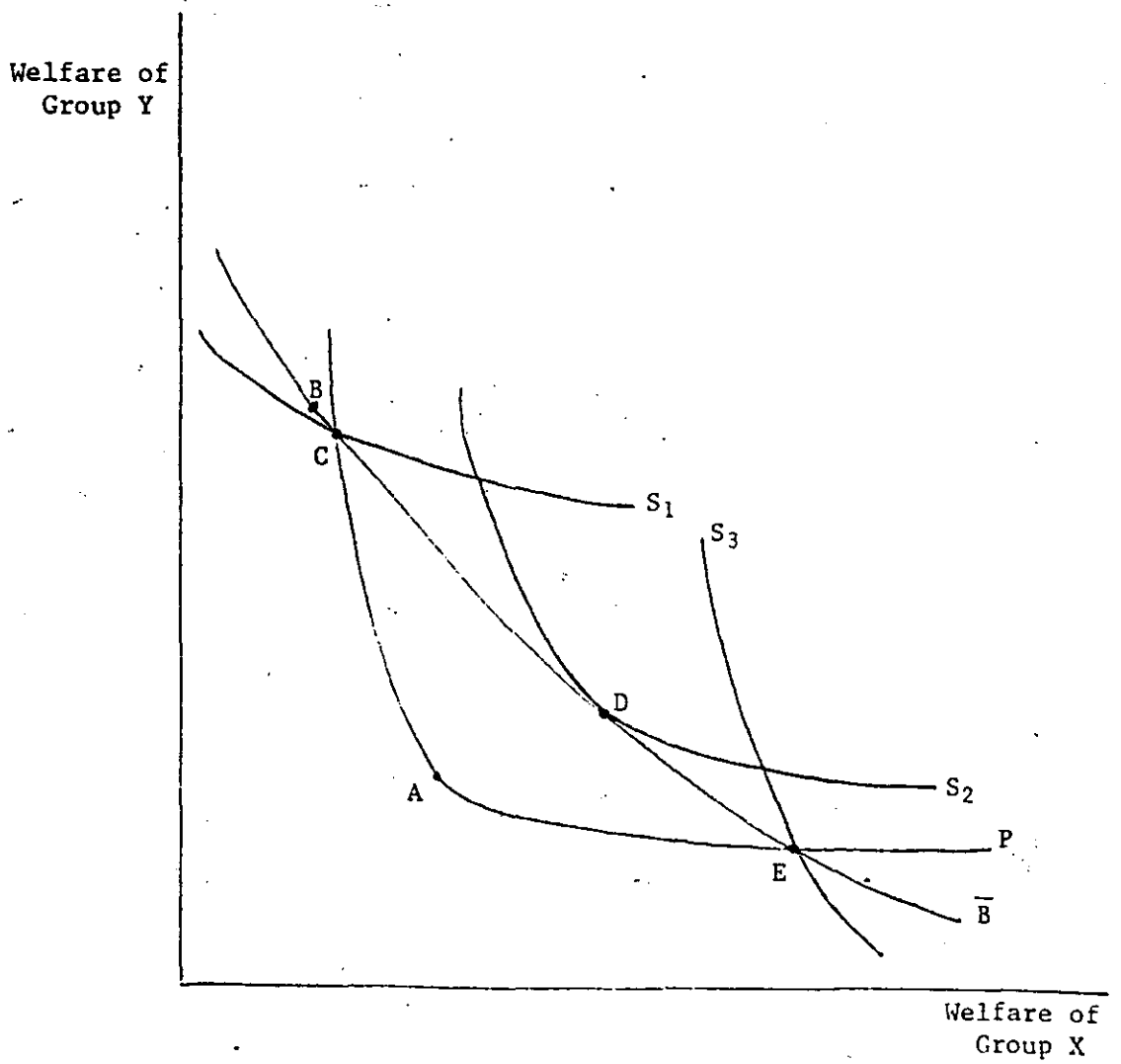

Figure 4. Maximization of Social Welfare Subject to Political and Institutional Feasibility

map contains an indifference curve such as S_3 which runs through point E with steeper slope than $\bar{B}$.

Figure 5 represents the case of maximizing political preferences subject to institutional feasibility. The curve, P', represents another political indifference curve defined similarly to P that is just tangent to $\bar{B}$ at point F. By the standard properties of an indifference map, such a curve must exist and have a tangency point, F, between points C and E on $\bar{B}$.

In many circumstances, the improvement of social welfare would also be an improvement according to political preferences and vice versa. However, this need not be the case. For example, improvements in social welfare do not correspond to an improvement according to political preferences in the cases of social indifference curves S_1 and S_3. In fact, if social welfare were maximized only with respect to feasible institutional redistributions and without regard to political feasibility, then politically inferior outcomes would result in these cases. This demonstrates one reason for the political inadequacy of traditional welfare economics.

To demonstrate the potential incompatibility, Figure 6 shows how social welfare can be lost if political preferences are pursued only with regard to institutional feasibility and without regard to social welfare consequences. This happens when social values are in conflict with political preferences. In Figure 6, political preferences are heavily oriented toward group Y, i.e., an improvement for group Y is considerably more valuable than an equal improvement for group X. This orientation is somewhat extreme in the sense that the tangency or political optimality point tends to move left on higher indifference curves (such as from point A to point F). This might occur when group Y is heavily concentrated and organized and, thus, can bring considerable political pressure to the policy process as opportunities arise.

On the other hand, the social welfare function is relatively more heavily oriented toward group X (the indifference curve S running through point A is more steeply sloped than the political indifference curves). With one of the more egalitarian welfare functions, this could occur if group X were a relatively poor group compared to group Y. The result is that the

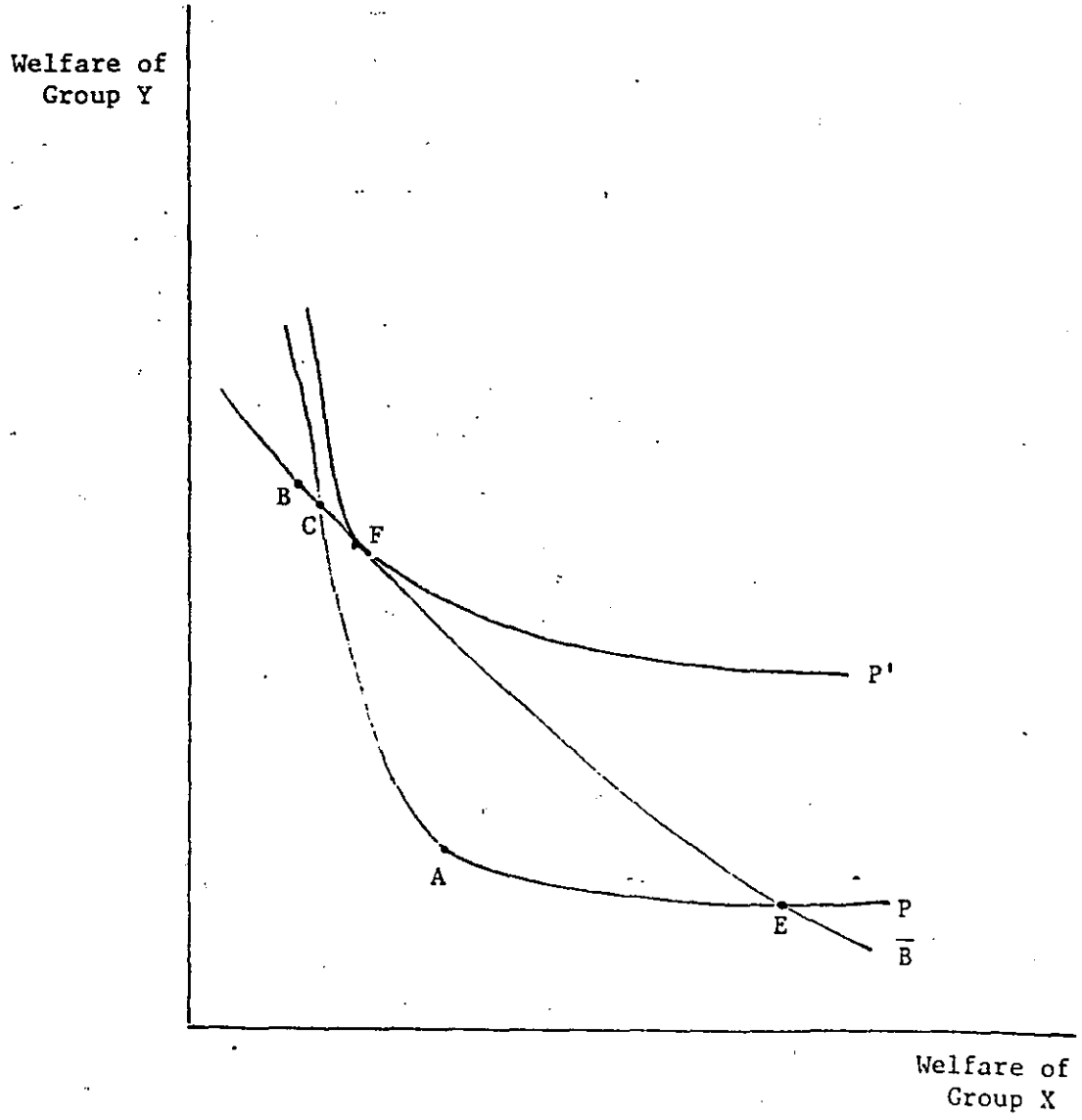

Figure 5. Maximization of Political Preferences, Subject to Institutional Feasibility

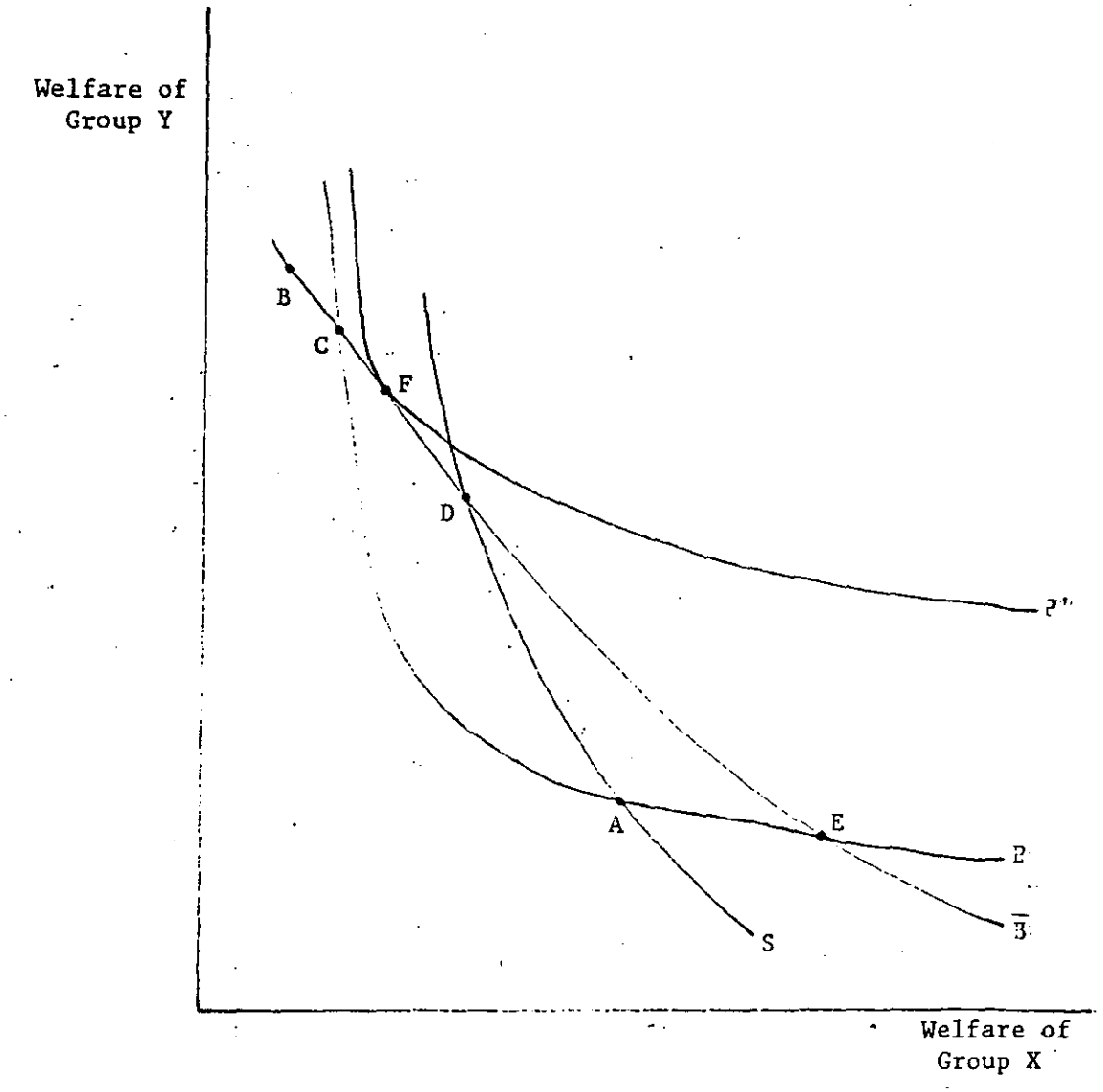

Figure 6. Conflict of Social and Political Values

point of political preference optimality under policy B, which occurs at point F, is at a lower level of social welfare than is point A. Thus, maximizing political preferences can actually reduce social welfare.

To avoid this possibility, one criterion is to maximize political preferences subject to institutional feasibility and a constraint that social welfare not be reduced. In the case of Figure 6, this results in choosing point D. This point is on the institutionally and politically feasible segment CE of $\bar{B}$ and attains the same social welfare as the initial point A but maximizes political preferences subjct to the stated constraints.

The above treatment does not attempt to resolve which of these three criteria to use in policy formulation but, rather, to point out that significant differences may exist among choices under the three criteria. Because the concept of a social welfare function is illusive and difficult to measure, it is easy to disregard. Moreover, it has little, if any, predictive power in explaining what a particular government might do in the context of policy reform. Nevertheless, in a prescriptive sense, greater awareness and sensitivity to situations where social welfare and political interests may be in conflict can help to identify cases where social welfare can be improved while satisfying political and institutional concerns.

3. Endogenous Preferences, Dynamic Adjustment, and Uncertainty

Several generalizations must be recognized before any of the above criteria can be employed to assess policy reforms. One such generalization is the dynamic implication of adjustment and change over time. Dynamic considerations in the measurement of conventional economic welfare for individual groups has been investigated and the associated methodology has been developed (Just, Hueth, and Schmitz 1982). However, dynamic generalizations can also amplify the differences between political and social preferences. Consider, for example, the case where policies and compensation schemes are selected to maximize political preferences only with respect to institutional feasibility. Then policy

changes will tend to improve the well being of strong political groups. Eventually this will tend to lead to further inequality and greater failure to satisfy social welfare criteria if the two are in conflict. In other words, political and social preferences will tend to diverge. On the other hand, if policy choices are made to maximize social welfare subject to political and institutional feasibility, then *less powerful* groups can be served. If this economic strengthening of the weaker groups also strengthens them politically, then the eventual dynamic outcome is to cause political and social preferences to converge.

Some observers have argued that rent seeking in a capitalist economy can eventually cause social and political preferences to diverge to the point of collapse of the political structure. Accordingly, a large and discrete correction may be required from time to time when the divergence between political and social preferences gets too large. Because of the discrete nature of such adjustments, the costs and associated inefficiencies can be substantial so the long-run consequences should be kept in mind in formulating short-run policies. Yet another, and perhaps more realistic, alternative is that certain watchdog special interest groups can be successful in limiting the divergence between political and social preferences. In any case, the dynamic effects of the criteria of policy selection on the distribution of political power and the ultimate conflict of social and political values is an important issue for policymakers to bear in mind. Moreover, any successful compensation schemes must take into account these dynamic effects of policy selection criteria

3.1 Uncertainty

Another important generalization needed in the framework of section 2 is uncertainty. In reality, policymakers and economic analysts may have a limited understanding of the tradeoffs. Many unknown factors may cause actual outcomes to be considerably different than anticipated at the time of policy formulation. This can be true both with respect to the impacts on welfare of various interest groups aand by unanticipated reactions by special interest groups.

The problem of uncertainty is demonstrated in Figure 7. The welfare of the two individual groups is measured on the respective axes by certainty equivalents (the expected real income discounted for risk). Rather than representing institutionally feasible tradeoffs from the expected new policy outcome at point B with a single curve, this figure represents, say, a 90 percent confidence band around the expected tradeoff curve. In other words, given uncertainties about how the economy operates and how individuals are affected, policymakers can only be 90 percent sure that the actual effects of a compensation scheme will fall between the two curves, $\bar{B}_L$ and $\bar{B}_U$. There is a difference between the two curves at point B because the initial outcome of the new policy is uncertain. The difference between the two curves likely widens in moving away from point B because the effects of various compensation schemes introduce further uncertainties.

In addition to uncertainty about the institutional feasibilities, policymakers also have uncertainty about political reactions and the resulting political sustainability of policies and compensation alternatives. This uncertainty is also represented in Figure 7 by a confidence band. Instead of a single curve representing political indifference associated with point A, a 90 percent confidence band is represented by the area between the curves, P_L and P_U. These curves may be tangent at point A representing known political acceptability of the status quo but diverge in moving farther away from the current situation because greater uncertainty about political fallout is associated with larger changes.

For the uncertainties represented in Figure 7, the range of feasible choices must be less than in the case of certainty if some minimal level of confidence in the outcome is to be maintained. For example, suppose a specific compensation scheme operated at a particular level produces a 90 percent confidence outcome as represented by the segment, $C_L C_U$. Then policy B with this particular compensation scheme would be both institutionally and politically feasible with 90 percent confidence if and only if the segment $C_L C_U$ lies everywhere above P_U.

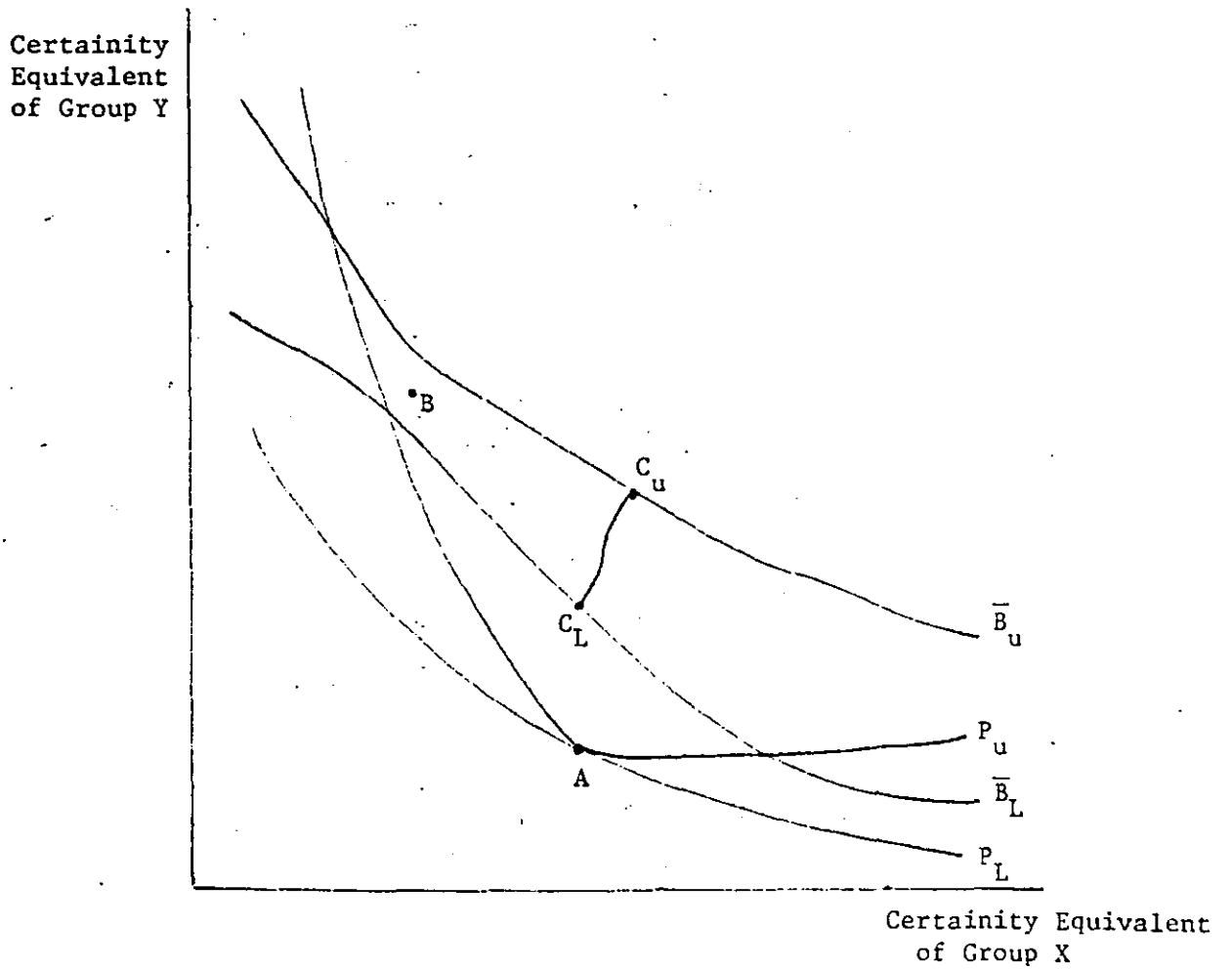

Figure 7. Uncertainity in Policy Formulation and Compensation

Noting that the confidence band on institutionally feasible tradeoffs through compensation diverges in moving away from point B and that the confidence band on political indifference diverges in moving away from point A, it is clear that greater uncertainty tends to cause acceptable policy/compensation schemes to favor the status quo (be close to point A) and involve smaller magnitudes of compensation (be close to point B). In other words, when policymakers recognize their limited understanding of the underlying economy, they will tend to change policies less than otherwise.

4. ALTERNATIVE COMPENSATION SCHEMES

The "possibility frontiers" of sections 2 and 3 are partially based on the design of compensation schemes. Accordingly, a critical component of the extended welfare analysis is the structuring of compensation mechanisms. Historically, compensation schemes have been used frequently as elements of programs and policies intended to provide public goods or advance public objectives. For example, establishment of transportation facilities or military bases have involved voluntary or involuntary (confiscation) land transfers with compensation to the owners. Tax incentives are used to induce enterprises to invest in certain activities (e.g., oil drilling) or locations (e.g., ghettos, low-income rural areas). Land grants were given in exchange for construction work on railroads. Severence pay and special early retirement arrangements are used as mechanisms to trim labor forces of public and private organizations. A developer who is granted an exemption from zoning or building codes may, in exchange, be required to construct a park or low-income housing.

Compensations are expenditures or foregone revenues that are made to facilitate a project and are not spent on goods purchased through normal market transactions. On occasion, compensation is given in situations where owners of property rights are forced to transfer these rights (for example, when land is confiscated for construction of public facilities). In other situations, compensation recipients do not give up property rights but may

be losing income, amenities, or asset values as a result of a policy or project. Such compensation may occur when a project or policy causes pecuniary externalities (reducing a price of output or increasing prices of inputs) that negatively affect the compensated party. The compensations are not necessarily equal to the actual loss; they are not determined according to welfare economic formulae but, rather, reflect political forces. In these situations, the receipts of compensation do not have a property right but have other types of entitlement.

The entitlements that are behind many compensation arrangements are sometimes vaguely defined and are protected by the current political landscape. For example, many of the existing farm programs are based on the notion that farmers are entitled to *fair prices, fair income,* or some notion of *fair returns*. Recent frameworks have been advanced that view commodity policies as compensation for government activities (research and development, extension) that have increased welfare overall but have adversely affected farmers (see Chapters 3 and 5 in this volume). Exact measures of *fair income* and *fair prices* are not well defined or agreed upon; hence, the design and implementation of a compensation scheme is not an easy task.

There are, of course, many other problems that must be faced in the practical implementation of compensation. Determining fair compensation under uncertainty (ex post versus ex ante), reducing moral hazard concerns, specifying eligibility, articulating less politically powerful interest groups, financing compensation, and designing credible threats all make the implementation of compensation schemes difficult to structure. In this section, each of these issues are considered in turn.

4.1 Ex Ante Versus Ex Post Compensation

One effective way to reduce the uncertainty borne by policymakers in evaluating institutional and political feasibility is to condition compensation on the occurrence of events that are unknown at the time of policy formulation. For example, a transfer payment to farmers in lieu of future government program subsidies could be formulated such that the

payment would be small if future free-market prices turn out to be high and vice versa with low future prices. Such a scheme constitutes ex post compensation because the amount of payment is determined after random events are realized. It reduces political uncertainty in the above example in the following way: If future prices turn out to be high, then government transfers to farmers are reduced; this situation tends to generate political support from farmers. On the other hand, this situation would tend to generate political opposition from consumers if the large subsidies were paid to farmers at a time when consumers are suffering from high food prices. Similarly, conditioning large transfers on the event of low prices would tend to placate farmers interests; this situation is also less likely to aggravate consumers.

A useful consideration with respect to ex post compensation relative to ex ante compensation is that it enables a spreading of risk between government and the private sector that can reduce the overall cost of risk for society. In the above example, the risk faced by both farmers and consumers is reduced because the ex post compensation rule makes them better off when they are in an unfavorable situation and worse off when they are in a favorable situation. At the same time, government attains the many benefits of flexible policy discussed by Just and Rausser (1984).

In the case of ex ante compensation, transfers are made before the states of nature are realized and the value of some key variables are known. With this approach, the entitlement is to the expected levels of some key measures of performance, perhaps adjusted for risk. Use of ex ante compensation arrangements prevents moral hazard problems and reduces the monitoring and administration costs of implementation. The reduced transaction cost of ex ante compensation, viz-à-vis ex post compensation, is one reason that this approach is frequently employed by the public sector.

The ex ante compensation approach has, however, several drawbacks relative to ex post schemes. First, with ex ante compensation, the randomness facing the compensated agent does not necessarily decline. The mean income (or return) of the agent is increased by the compensation even though the distribution around the mean may not change. Ex post

compensation tends to reduce and even eliminate the randomness and variability of the income or return of the compensated agents. It is also likely to increase the income mean. When the mean income effect of the two compensation schemes is equal, economic agents that are risk averse favor the ex post rule that reduces their risk. In other words, the use of ex post compensation may offer risk-bearing cost saving.

A second advantage of ex post rules is that, with more information, they facilitate decision making. The decisions on whether to and how much to compensate are determined after the state of nature is revealed, not before. One basic tenet of the economics of information is that, even under risk neutrality, efficiency is increased as more information is used by decision makers. The difference in the use of information under the two decision rules leads to different choices; and they make the resource allocation and choice under ex post rules superior.

4.2 Moral Hazard and Monitoring

Entitlements to compensation are often affected by the actions of the recipients. This can, of course, give rise to *moral hazard* problems. When producers know that they will be compensated for low market prices, they will fail to adjust their production. Similarly, the literature on pollution control (Baumal and Oates 1974) has shown that, when firms are paid (subsidized) for reducing their pollution generation, some may actually increase their pollution to be entitled to larger payments. To prevent these moral hazards, compensations should not be based on activities that can be manipulated by the recipients of the compensation.

Second, when entitlements are based on incomes or returns, determination of actual compensation levels requires *monitoring*. Recipients of compensation have a strong incentive to overstate their losses; accordingly, effective compensation mechanisms must be designed around easily verifiable and observable variables. Monitoring is a resource-consuming activity that sometimes requires a staff of claims adjusters and formal surveillance

mechanisms. Improvements in computerized data management has reduced the cost of monitoring and allows the expansion of verifiable compensation schemes. For example, there is growing evidence that the availability of aerial surveillance data on land-use patterns and growth status of crops over time has improved the effectiveness of crop insurance and drought-protection schemes.

4.3 Eligibility

A third issue in the design of actual compensation relates to *eligibility*. In a policy-reform context, compensation is based on hypothetical losses of groups who benefit from current programs. The determination of the hypothetical loss is guided by economic principles but may require specific details about the individuals and their activities, especially when the compensated population is heterogeneous.

There is an obvious conflict between eligibility stated in terms of actual activity levels and reducing moral hazard . To reduce moral hazard problems, past behavior may be used to determine eligibility. But, again, individuals may realize that present behavior may partially influence eligibility in the future and behave accordingly. The main challenge in designing a compensation scheme relates to discriminating among individuals so as to yield a good approximation of the hypothetical loss while minimizing moral hazard problems.

The compensation of groups with considerable political clout may be greater than the loss they incur as a result of a policy reform while other groups who incur losses may not be compensated at all. Changes in the distribution of political power and preferences are likely to influence the weight given to losses of different groups and thereby alter the level of compensation. Affirmative action presents an obvious example of a policy that attempts to compensate for past discrimination. Farm workers in California have attempted and, to some extent, succeeded in using their political power to alter agricultural labor legislation and public research agenda in ways that serve their interests. Some of the strict environmental

regulations of the present may be in response to the inattention to the environmental consequences of policy measures and agricultural practices in the past.

4.4 Formation and Articulation of Political Interest Groups

The extent to which social welfare interests can be served depends on the possibility of organizing new political groups that can support and sustain outcomes consistent with social welfare improvement. When a policy that is socially preferable is not politically feasible, it is because the groups helped thereby are not organized sufficiently to represent their political interests relative to the groups that are harmed. If this organization can be provided, then the socially preferable change can be instituted and the groups helped thereby can be organized to make the change politically sustainable.

The problem that must be considered, however, is that if such an organization is feasible and economical then why has is not occurred previously? A common reason is that the transactions costs of organization are too large. This tends to be the case with large groups and small individual effects. On the other hand, these conditions also tend to make such organizations have public good characteristics (some of the individuals helped by the organization can receive the benefits even if they do not participate). In any case, when transactions costs are important, they must be weighed against the social benefits of the changes under consideration. If the transactions costs of organization are greater than the increase in social benefits that could be attained without regard to political feasibility, then a socially suboptimal policy that is politically feasible may be the best alternative.

4.5 Financing Compensation and Credible Threats

For most policy reforms there will be winners and losers. Given an initial estimate of the distribution of gains and losses, the government could present to the different groups a proposed compensation and associated financing burden. If sufficient support arises, legislation could be introduced that executes the proposed reform and compensation scheme.

If support does not arise, the government could conduct a *willingness-to-pay* exercise by requesting that groups proposing the suggested compensation scheme say how much they are prepared to pay (winners) and receive (losers) for cooperation. The key question at this juncture is whether the amount available for compensation from winners is sufficient to tempt enough losers such that adequate political support exists to implement reform. If the political power of groups who support the reform plan is sufficient, the process is completed. If this is not the case, a search must begin for an alternative supporting coalition.

For the process to generate credible threats, groups must be subject to exclusion from any supporting coalition. In particular, the compensation scheme should be designed to encourage groups to accept the distribution of burden and transfers in the first round of the negotiation process. Losers that do not agree may be harmed in subsequent stages by not being compensated, while gainers that decline to support the scheme may suffer by being forced to pay the assigned compensation scheme if legislation is passed without their support. Formally, suppose there are K losers and J winners. Let L_k denote the loss of group k (expected loss under this neutrality or the certainty equivalent under risk aversion) and G_j denote the gain of group j, where k = 1 ... K;j=1, ... J. If $\sum_k L_k < \sum_j G_j$, group k will receive L_k and group j will pay $\left(G_j / \sum_j G_j \right) \sum_k L_k$.

In the above structure, if total gains exceed the total losses, a compensation scheme can be internally financed. Suppose, however, that all parties do not accept this compensation scheme. Instead, suppose

$j = 1, J_1$ accept the plan;

$j = J_{1+1}, J$ reject the plan;

$k = 1, K_1$ accept the plan;

and

$k = K_{1+1}, K$ reject the plan.

If those who accept the plan, $J = 1,J_1$ and $k = 1,K_1$, have sufficient political power, the proposed compensation scheme can be implemented. If not, one approach is to ask each group who rejected the proposed compensation scheme to submit their respective willingness to pay. If these amounts are W_j and R_k, the funds available for financing compensation would be G_j from $j = 1,J_1$ and W_j from $j = J_1,J$ and the demands for compensation would be L_k from $k = 1,K_1$ and R_k from $k = K_{1+1},K$.

Based on the willingness-to-pay responses, the next stage could consist of formulating a compensation plan where all the groups from $k = 1,K_{1+1}$ will be compensated and where some groups from $k = K_{1+1},K$ will be compensated such that the total compensation does not exceed the total willingness to pay by gainers and the political power of the supporting group is sufficient to implement the proposed reform.

If the willingness to pay does not exceed the minimum cost required to finance the compensation scheme, a third round could be conducted with the purpose of raising the contribution of winners. Negotiation could continue until a solution is obtained or the process is terminated because political support of the actual compensation cannot be achieved. This process assures that losers accepting the proposed compensation in the first round actually receive the agreed-upon levels while other groups that bargain risk losing compensation. This design provides a credible threat and increases the incentive for losers to support the proposed reform.

The above algorithm presumes that the benefits of any proposed reform are sufficiently concentrated such that specific interest groups can be identified. If benefits are widely dispersed, however, the burden of financing any compensation scheme could be placed upon the general population. The actual financing could occur through general tax revenues or could take the form of long-term governmental debt to mitigate short-run potentially undesirable macroeconomic effects or temporally concentrated tax burdens.

Many alternative designs also exist for the losers of any particular policy reform. Compensation will be incurred only when these losers are sufficiently concentrated and have

some political influence. Of course, compensation to these groups does not have to be equivalent to the capitalized loss under reform. In many instances, these capitalized losses will be difficult to estimate and subject to error.[2] Compensation at these levels should effectively counter the opposition to proposed reforms. However, expenditure minimizing compensation schemes can be constructed which result in payments to losers that are just sufficient to mitigate any politically obstructionist strategy they might pursue. This leads to partial compensation schemes that reflect the distribution of political influence among both concentrated losers and concentrated winners. Finally, compensation schemes can be "in kind" transfers, as demonstrated in Chapters 3 and 5 of this volume.

5. CONCLUDING REMARKS

The purpose of this chapter has been to develop operational formulations that can be used to assess policy reforms. Three alternative formulations were specified:

- Maximization of social welfare subject to institutional and political feasibility.
- Maximization of political preferences subject to institutional feasibility.
- Maximization of political preferences subject to institutional feasibility and minimal levels of social welfare.

We have argued that political and institutional considerations must be explicitly recognized in the design and evaluation of sustainable policy reforms. In particular, the focus of this chapter has been on *politically feasible* compensation mechanisms for groups within a particular country that may be harmed by policy reform.

A particular country's policy reforms, motivated by trade liberalization or otherwise, can entail substantial adjustment cost, especially in highly protected sectors. In many Organization for Economic Cooperation and Development (OECD) countries, one of the most highly protected sectors is agriculture. In the case of the United States, much of agriculture is highly capitalized with equipment and land; and, thus, reduced protection will cause the value

of these assets to decline (Rausser 1990). Reform proposals can include policies for facilitating adjustment and for providing compensation to those disadvantaged by reductions in the level of protection.

Compensation of losers must be considered, in part, to prevent obstructionist political tactics. Since policy reform may generate benefits to other groups, it would, indeed, be desirable if these beneficiary groups have, or could acquire, some influence in the policy reform process. To the extent that these winners are concentrated and can be identified, they can share in financing the burden of compensation. Regardless, to sustain any policy reforms that might be implemented, means must be found to placate obstructionistic coalitions.

For each of the three alternative formulations considered in this chapter, there are many operational problems that must be faced in the implementation of actual compensation. Determining eligibility and interest group representation, fair compensation under uncertainty (ex post versus ex ante), financing compensation, designing credible threats, and reducing moral hazard concerns, all make the design and implementation of compensation schemes difficult. Various means for managing these concerns have been outlined in this chapter. In subsequent chapters (especially Chapters 3, 5, and 6), conceptual formulations are constructed for explaining mixes of policies, some of which involve creative compensation schemes. In these subsequent conceptual formulations, the focus will be on endogenous political-economic determination of policy mixes. In contrast, the current chapter has been largely concerned with prescriptive criteria that can be used to evaluate specific discrete policy reforms.

Footnotes

[1]To simplify the discussion here, we only consider comparison of policy B to the single point, A, represented in the figures. This assumes that policy A is defined by the various redistribution schemes that are currently in place. In reality, one could also consider institutionally feasible redistributions of the point A just as for policy B. In this context, policy B would be clearly preferred to policy A only if its envelope curve of institutionally feasible redistributions were everywhere above that for policy A. This concept is similar to Samuelson's (1956) analysis of utility possibilities frontiers.

[2]Only when market valuations of assets reflecting the effects of policy reform are continuously available is it possible to get precise estimates of the amount of "capitalized losses."

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