Why Do Economists Favor Free Trade but Politicians Don't?

Koichi Hamada and Shyam Sunder

Yale University

(Preliminary Draft, November 2004)

In summary, Pareto would have the Ministry of Production choose $a_S = a^*_S$, compensate those who would otherwise be harmed by the choice and later consider how the residual might best be distributed.

Kemp and Pezanis-Christou (1999)

Economic theorists traditionally banish discussions of information to footnotes. Serious consideration of costs of communication, imperfect knowledge, and the like would, it is believed, complicate without informing. This paper, which analyses competitive markets in which the characteristics of the commodities exchanged are not fully known to at least one of the parties to the transaction, suggests that this comforting myth is false. Some of the most important conclusions of economic theory are not robust to considerations of imperfect information.

Rothschild and Stiglitz (1976, p. 629)

Agreement on the virtues of free trade as a means to advance the economic welfare of society is a well-known exception to economists' disagreements with one another on other matters of policy. Politicians, and the population at large, seem united in their opposition to free trade in most lands and times. Economists attribute the attitude of politicians to a lack of vision, wisdom, and leadership, while politicians dismiss the free trade arguments as simply academic—a euphemism for irrelevant. In spite of much debate, the arguments have changed little in the two centuries since Torrens and Ricardo proposed the theory of comparative advantage.

In this paper we propose to perturb this stasis by recognizing that serious *economic* obstacles exist in realizing the net gains from trade liberalization. Gains and losses of various agents and groups are unevenly distributed among them, and the information about their magnitude is inherently private. Such information is not truthfully

communicable to a central authority—whether domestic or international. Consequently, the realization of aggregate gains from trade is often blocked by winning coalitions in a democratic polity. The losses inflicted by the deadlock are immense, and the task of resolving this political economy problem cannot be dismissed as a mere detail. Implementation obstacles to free trade deserve a serious consideration as a problem of economic theory. This paper is a step in that direction.

We suggest that information asymmetry blocks the conversion of potentially-Pareto superior outcomes of free trade into Pareto superior outcomes through wealth transfers. Such asymmetry is not included in the standard lists of impediments to free trade. Here is an example of such a list:

> Clearly this theoretical model (of comparative advantage) omits several factors that sometimes apply in the real world: Workers and capital may not be able to be transferred painlessly from one industry to another. The clothing industry (in Southland) and wine-making industry (in Northland) may therefore exert political pressure (through industry associations and trades unions) to protect their industries. Governments also sometimes decide to provide subsidies or to erect import barriers to preserve domestic industries. Reasons other than political needs might include national prestige, or the wish to avoid being dependent on imports in case trade is disrupted – for example by war. (http://en.wikipedia.org/wiki/Comparative_advantage).

The frictional cost of transferring factors of production from one agent, industry or country to another is the main impediment here. Political opposition arises from the frictional costs. Government subsidies and import barriers are seen as obstacles in themselves. National prestige and military considerations are mentioned. This list does not include the problem of determining who should compensate who and by how much. We have not seen this problem mentioned in other such lists either.[1]

[1] Free trade is only one example of the class of problems in public economics to which these arguments are applicable. Any other propositions of welfare economics that require the combination of the market

Efficiency and Distribution in International Trade

The standard line of welfare economics was that the market mechanism, under classical assumptions such as the absence of externality and indivisibility, achieves the first order condition of welfare maximization and that a combination of transfers (which are assumed to be free) and competition will achieve the optimal point of one's social welfare function. Samuelson (1947) proves that the income dominance of the resultant state over the status quo implies that there exists a set of transfers that will make everyone better off. In international trade theory, this result is translated into the Pareto dominance of free over restricted trade. Can transfer payments, the *deus ex machina* of this long tradition, be operationalized as an economic mechanism?

Economic benefits of trade and liberalization may be large and positive, but they are rarely distributed equally across individuals or nations. There are many reasons for this uneven distribution. Different producers have different costs and technologies. Changes in prices of their factors or products affect each producer to varying degrees. Similarly, different consumers have different tastes and consumption bundles, and the effect of any changes in prices cannot, in general, be uniform across consumers. Virtually any policy change in real life generates winners and losers, and cross-sectional variation in the magnitude of advantages conferred and losses inflicted by the policy is the norm, not an exception.

The reliance on costly transfer payments originated in the common agency theory and its application to government. Dixit (1997) and Dixit et al. (1997) apply this theory to government, and possibly to international institutions, and maintain that a common

---

mechanism and transfers, such as public utility pricing, domestic poverty reduction and foreign aid, are also subject to the kind of criticism developed here.

agency will achieve the desirable state of affairs if transfers among principals can be made after the optimal state has been chosen by the agency. The willingness to engage in a joint action through a common agent is secured through the device of costless transfers across sectors of a domestic economy or across countries. The costless transfers enable an economy to achieve a Pareto optimal state through actions of its constituents. When we consider the costs of, or the obstacle to, such transfers, the picture turns more realistic and less promising. The difficulty of transfers within or across nations interact with each other, and seriously impair the governance system that may implement the policy (Hamada and Sunder 2004). The information problem of how much each group or a nation is willing to contribute, or accept, becomes inseparable from the incentive compatibility question. Each principal has incentives to exaggerate the loss (in order to claim a higher subsidy) or to minimize the gains (in order to pay less tax) from institutional changes.

Transfer Payments: From Potential-Pareto to Pareto Efficiency

John Stuart Mill (1839), Pareto (1894), Hicks (1939) and Kaldor (1939) all suggested the possibility of transfer payments transforming some policy action which are not Pareto improvements into Pareto improvements. In Hicks-Kaldor cost-benefit analyses of policy, potential for such a Pareto improvement is considered sufficient to justify the action; actual transfers are not necessary. Kemp and Pezanis-Christou's (1999) interpretation of Pareto (1894) is that he considered actual, not merely potential, payments necessary to support the action. This latter interpretation is closer to the compensation principle used in the common law ***[to be expanded on common law]***.

Though the difficulty of implementing lump-sum taxes and subsidies has been mentioned before, the link between transfers and information needed to carry them out has not. This is the important link we explore in this paper. A few important articles, in particular, Dixit-Londregan (1995) and Coate-Morris (1995) address the difficulty of implementing transfers and accordingly interact with our approach. Those articles are built from various building blocs which are not easily reducible to a simple summary. We shall try to highlight the elements that are related to our own approach.

Dixit and Londregan (1995) present a political competition model where transfer payments require additional expenditures. The building blocks of their model include the decision on whether or not to exit from an industry suffering under international competition and the resluting dynamic inconsistency issues. They demonstrate that the lack of sufficient correlation between political and economic characteristics of voters will force politicians to spend more than the total of net losses to voters (and to tax more than the total of net gains to voters). Accordingly politicians end up spending more than the intended transfers. Among the many ramifications of their model, it is possible to read, at least indirectly, our own central message: the amount of subsidies given to the constituents must exceed their losses because of asymmetry of information. However, to produce this result, our approach relies on only one of their many ingredients: the cross-sectional variation in economic characteristics of agents, of which politicians have only limited knowledge.

Coate and Morris (1995) focus on the credibility of politicians. Honest politicians will use the contributed funds for the stated purposes, but the dishonest will use them for other purposes as well. The public does not know which politicians are honest. Thus,

Coate and Morris (1995) pay attention to the information asymmetry between the politician and their constituents who do not know which politicians honestly represent their preferences and who do not observe the actions the politicians take. Under a game of asymmetric information between politicians and voters, Pareto improving transfer payments are substituted by pork barrel projects and wasteful expenditure. This work gives also an alternative reason why rent-seeking activities (e.g., Bhagwati and Srinivasan 1980 and Krueger 1973) prosper instead of straight forward give and take between politicians and their constituents. In our approach, politicians are ignorant about voter's characteristics; in their approach, voters are ignorant about politicians' characterietics.

Coate and Morris contrast Stigler's (Chicago) and the Buchanan's (Virginia) perspectives on the role of government in distributive politics. Stigler regards lobbying by pressure groups as a mechanism to inform the government about the constituent preferences, and thus help the latter make welfare-improving policy. The government as common agency shares some of this legacy. On the other hand, Buchanan focuses on what politicians know and the citizens don't, creating temptation for the former to act against the interests of the latter. Our own approach is closer to Stigler's (and even closer to Hayek's), and distinct from Buchanan's, in the sense that we assume the information asymmetry favors the constituents—they know about the gains and losses not known to the central authority. However, we also deviate from Stigler because the consequences of this information asymmetry are less benign than what Stigler posits (except in the case of his regulatory capture theory). As Rothschild and Stiglitz (1976) pointed out, such

asymmetries prevent efficient allocations that might otherwise have been achieved through free trade.

Our approach would be conceptually inapplicable to a political economy that can be modeled to comprise a representative consumer, a representative tax payer and a representative producer. When there exist producers with different costs, or consumers with different intensity for demand for a good, the representative model becomes inappropriate, and gains from free trade cannot be realized unless the transfer process can overcome the frictional costs of asymmetry.

Political Economy of Transfer Payments under Information Asymmetry

In a democratic polity, the chances of a potentially-Pareto policy proposal gaining approval depend not only on the magnitude of net excess of all benefits over all costs (assuming that all consequences can be reckoned in compatible units), but also on the distribution of these costs and benefits across the constituents.

In a political system where each constituent is entitled to one vote, a potential Pareto proposal could be supported by those who gain from its implementation. If the distribution of payoffs is skewed to the right, the number of voters benefiting from the proposal would exceed the number of losing voters, and such a proposal may gain approval of the majority. Conversely, a proposal with consequences skewed to the left would be rejected by the majority. A proposal with equal number of winners and losers will have the electorate hung between support and opposition. Thus popular support of a potential Pareto proposal is uncertain at best, and hardly more likely than 50/50 chance.

Suppose the cross-sectional frequency distribution of the consequences of the policy proposal is skewed to the right, which means that there are a small number of

parties who gain large amounts (relative to a symmetric, say normal, distribution). The greater the skew to the right, the more likely it is that, in spite of the positive mean, the majority will consist of losers and the proposal will lose out in a voting system. On the other hand, if the distribution is skewed to the left, with a small number of parties who each lose large amounts, such parties may actively campaign against the proposal while a large number of winners whose winnings are small will not have enough motivation to organize themselves in support of the proposal. Few voting systems are beyond the influence of money. The more concentrated the losses are among a small number of constituents, greater is their incentive to invest in a public opinion or legislative campaign to defeat the proposal. The more dispersed the gains are among a large number of constituents, weaker are their incentives to invest their time or money in public or legislative campaigns. The constituent incentives load the dice against approval of a potential Pareto policy proposal.

The transfers visualized by Mill, Pareto, Hicks and Kaldor, if implemented, could solve this problem. While Pareto refers to such transfers being meaningful only if implemented (see Kemp and Pezanis-Christou, 1999), Hicks and Kaldor had no apparent intent to implement the transfer scheme. If the total benefits of a proposal exceed its total costs, it is sufficient from their point of view to justify the action as socially desirable.[2] Cost-benefit analysis of trade theory has largely followed this line of thought (add reference).

[2] Perhaps a Rawlsian (1971) veil of ignorance is sufficient to make this potential Pareto criterion equivalent to Pareto criterion in expected value terms, as long as the individual constituents who are affected by the decision have not yet been assigned (or do not yet know) their respective roles at the time of the decision. On the other hand, **as** Rawls himself argued in a part of his book, without knowing their own situation, individuals may choose options that will maximize their payoff under the worst circumstances. Such choices will not support Pareto improving policy even under the veil of ignorance. We restrict our research design to settings in which individuals know their own situation when they make their decision.

Let us consider the political economy of implementing the transfers to realize the Pareto potential. Using Pareto's (1894) notation, let ζ be the sum of benefits to *n* constituents who gain, σ be the sum of losses to the *m* constituents who lose from the proposal. By definition of a potential Pareto proposal, $(\zeta - \sigma) \geq 0$, and there are many feasible solutions to tax some or all of the *n* gaining constituents and subsidize at least the *m* losing constituents so no individual would be a net loser after considering the tax or subsidy, and some would be better off.

The gains and losses to individual constituents are inherently private and cannot be reliably communicated to others or to a central authority. Hayek (1945) emphatically pointed to this fundamental problem of dispersed information in society about the same time when Hicks and Kaldor put forward their welfare criterion:

> …the "data" from which the economic calculus starts are never for the whole society "given" to a single mind which could work out the implications, and can never be so given.
>
> The peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. The economic problem of society is thus not merely a roblem of how to allocate "given" resources—if "given" is taken to mean given to a single mind which deliberately solves the problem set by these "data." It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge not given to any one in its totality. (pp. 519-520).

In an environment where the benefits and costs to individual constituents are private, implementation of potential Pareto proposals through tax and subsidy runs into the wall of information asymmetry. Let us consider some implementation schemes.

First consider the possibility that the central authority somehow (even though we do not know how it could) has the information about the total gains (ζ) and total losses (σ), and the identity of the *n* gainers and the *m* losers without knowing their individual gains and losses. The best the authority can do (given its information) is to impose a uniform per capita tax *t* ($\zeta / n \geq t \geq \sigma / n$) on the gainers and grant a uniform subsidy *s* ($s = tn/m$) to each loser. In the extreme case when all gainers gain identical amounts and all losers lose identical amounts, this method will translate the potential Pareto to Pareto solution. However, equality of gains and losses is an unlikely event, and in general, the average tax and average subsidy will leave many constituents worse off. Even this minimal information (and informationally infeasible) solution cannot make sure that after the tax and subsidy, the solution will be a Pareto improvement on the original situation. Depending on the cross sectional distributions of gains and losses, the transfer scheme does not necessarily cut the number of constituents who are worse off; this number may even increase. In most likely case of uneven gains and losses, this averaging solution will leave many losers after the taxes have been paid and the subsidies have been absorbed.

As a practical matter, with the information on gains and losses being private, the central authority cannot reliably learn about who the gainers and the losers are. The prospect of taxation on gainers and subsidy to losers will induce just about everyone to claim to be a loser deserving a subsidy. The central authority would not be able to verify the truthfulness of such claims. The amount of claimed losses that deserve to be made up by the central authority also would be beyond verification. Thus in the extreme case, no constituent will come forward as a winner who should be asked to pay a tax, and every constituent will claim to be injured by the proposed policy to the maximum plausible

extent deserving compensation. The central authority will collect no tax, and have to payout at least σ, and most likely considerably more, to get all constituents to accept the outcome as a Pareto improvement over the status quo. But this Pareto improvement is impossible because the central authority must balance its budget, and sooner or later must tax its constituents to collect the subsidies paid out.

If neither average nor "trust the constituents" approaches can realize the potential of Pareto improvement, perhaps there exist appropriately designed mechanisms that will induce the constituents to reveal the truth and allow such realization. Let us examine two possibilities: voluntary anonymous contributions/claims, and voluntary public contributions/claims from the constituents.

In the voluntary anonymous contributions/claims scheme, the constituents submit their proposed contributions to, and claims from, the transfer fund. The central authority publicly announces that the proposed policy will be implemented only if the excess of total contributions over the total claims is equal to or more than a specified amount; otherwise the policy proposal is shelved. Under this scheme, conditional on the proposal being shelved, the winners have incentives to contribute an amount up to, but no more than, their gains; and the losers have the incentives to claim an amount up to, but no less than their losses. If everyone submitted contributions/claims close enough to this personal margin, given a positive residual ($(\zeta - \sigma) \geq 0$), the proposal will be implemented. However, the expectation of the implementation will induce the winners to cut back on their proposed contributions and the losers to increase their claims. These changes may be large enough in aggregate to exceed the total residual and the proposal would no longer be implemented. Under what circumstances is it possible for the constituents to

arrive at a set of contributions and claims so the potential Pareto improvements are realized? It is possible that after some experience, constituents may be able to coordinate among themselves, even in presence of information asymmetry, to divide up the residual among them and implement the proposal?

With this in mind, we examine three possibilities: anonymous contributions/claims, public contributions/claims and negotiated contributions/claims. Later, we plan to add veil-of-ignorance mechanisms to this list (see fn. 2). Public and free form negotiation treatments will bring additional pressure to bear on individual constituents. However, given the information asymmetry and uneven distribution of gains and losses, it may not be possible for the constituents to assess who is being reasonable and who is not.

Theory and Evidence

The problem of implementing transfers to attain Pareto superior outcomes shares some elements with unitization in the oil industry and the more general public good problem. Libecap and Wiggins (1984, 1985) analyze the problem of leaseholders negotiating the unitization of oil and gas fields for the purpose of efficient (Pareto superior) production from the field. A unitized operation of an oil field is less costly and yields more oil than competitive operation of the fields by the individual leaseholders who may share the same underground pool of oil. Asymmetry of information about the share of oil pool that may lie under each lease makes it very difficult for the leaseholders to reach a unitization contract on the fractional ownership of a single production enterprise assigned to each leaseholder.

Ledyard (1995) surveys a large experimental literature on the public good problem. Private contributions to the production of public goods observed in laboratory environments are generally less than the Pareto efficient contributions. On the other hand, these contributions are generally more than what thenon-cooperative game theory would predict.

Both the unitization literature as well as experimental evidence on contributions to production of public goods are causes for pessimism about the ability of constituents to solve the transfer problem to realize potential Pareto solutions in practice. However, we cannot know for sure until we observe the behavior of economies designed to approximate such conditions. For this purpose, we conduct the following laboratory experiment.

Experimental Design

To examine the political economy consequences of information asymmetry for the implementability of lump sum transfer payments in trade negotiations, we design a simple market experiment.

There are n buyers, each with its own private reservation value given by ranked vector $\boldsymbol{v}$ and n sellers, each with its own private (variable) cost given by ranked vector $\boldsymbol{c}$. These agents are free to trade through a double auction[3]. Each buyer can buy at most one unit and each seller can sell at most one unit. Trades take place in whole units only. If buyer i buys a unit at price p, it has a net payoff of $(v_i\text{-}p)$, and knowing its own value v_i, it should not buy at a price above this value, and prefer a zero payoff instead of incurring a loss. If seller j sells a unit at price p, it has a net payoff of $(p\text{-}c_j\text{-}t)$, where t is tax per unit seller pays to government. Knowing this tax and its own cost c_j, it should not sell at a

[3] (describe double auction mechanism in summary form).

price below the sum of tax and its cost, and prefer a zero payoff instead of incurring a loss. Since the seller's costs are variable, its payoff is zero if it does not sell anything.

In Figure 1, the D is the demand function, S is the supply function, and the equilibrium quantity and price are given by *q* and *p* respectively. Area ABp defines the consumer surplus, area pBF defines the producer surplus, and EFBD = *qt* defines the tax collected by the government. There is plenty of evidence in the past experimental literature which suggests that after a few periods of trading experience, the outcome of such a market rapidly settles down to the predictions of Walrasian tatonnement. We shall replicate this setting in the lab as a benchmark for our experimental implementation.

If the taxation *t* were eliminated from the market, the equilibrium price should drop from *p* to *p'* and the equilibrium quantity should increase from *q* to *q'*. The share of surplus of every consumer who bought before removal of the tax should increase by (*p*-*p'*) and an additional (*q'*-*q*) buyers should enter the market and earn positive surplus. Similarly, the share of surplus of every seller should increase (since the drop in price will be no greater than the tax per unit), and an additional (*q'*-*q*) sellers should enter the market and earn positive surplus. It is clear that the removal of the tax makes every individual participant at least as well as as before the removal of the tax, and the total consumer and producer surplus increases by an amount greater than the taxation *qt*. This extra increase in surplus is given by area BCD.

In international trade theory, the argument is often made that if the net increase in surplus is positive, it should be possible to arrange a transfer between the winners and losers so everybody ends up being a winner, or at least there should be no losers and some gainers.

The main treatment in the experiment is to allow the participants to find a way to make such a transfer payment (tax *qt*) from the gross gainers to gross losers played by the government in this experiment in such a way that nobody is left worse off. Before trading in each period, the traders will be asked to agree to make enough voluntary contributions towards the transfer payment fund (>= *qt*) so the tax would be withdrawn. There are several possible mechanisms for such collective decision making:

1. Anonymous voluntary contributions towards the transfer fund.
2. Public voluntary contributions towards the transfer fund.
3. Open negotiations through computer communication on contributions
4. Imposition of a flat tax (*qt/n)* on all participants by majority vote.
5. Decision on tax and subsidy vectors by majority rule after discussion in the committee of the whole.
6. Election of a person by majority rule who shall have dictatorial powers to impose his/her decision on taxes to be paid (or subsidies to be received) by various individuals.

In this experiment we examine the efficacy of the first three of these possible institutional arrangements—anonymous voluntary contributions, public voluntary contributions, and public voluntary contributions following negotiations—in implementing the potential Pareto decision. At the time of designing this experiment, we do not expect that any of these institutional arrangements will succeed in finding a solution to the transfer problem. We believe that the most likely outcome is that the status quo (Pareto inferior solution with tax *t* in place) will persist through the experiment. We

choose public voluntary contributions as the first mechanism to test because we believe that it has a greater chance of success in implementing liberalization than the alternatives.

Column 2 of Table 1 shows the reservation values of six buyers ranging from 302 to 232, evenly spaced at intervals of 14 (also see Figure 2). Column 4 shows the reservation costs of six sellers ranging from 250 to 300 evenly spaced at intervals of 10. The equilibrium price of this market is in range 270-274 (average 272) and the equilibrium quantity is 3 units. Column 5 shows the equilibrium share of surplus of the six buyers and Column 8 shows the equilibrium share of surplus of the six sellers. Only the three highest valued buyers (30+16+2 = 48) and the three lowest valued sellers (22+12+2 = 36) have non-zero shares of surplus; the others are not able to trade in equilibrium. Note that the equilibrium shares of the total surplus extracted (48+36 = 84) are uneven.

Suppose the seller cost includes a tax of 72 units, and a total of 216 units (72 x 3) is collected in equilibrium. A policy proposal on the table could remove this tax if the participants would contribute 216 voluntarily. With the removal of the tax the cost of every seller drops by 72 units and the new costs are shown in Column 3 ranging from 178 to 228, evenly spaced at intervals of 10. Equilibrium price of this market is in range 228-232 (average 230) and the equilibrium quantity is 6 units. All six buyers now earn a positive share of the surplus ranging from 72 to 2 (see Column 6), the share of surplus of every buyer increases (see Column 7) and the aggregate surplus of the buyers rises by 174 (from 48 to 222). All six sellers now earn a positive share of the surplus ranging from 52 to 2 (see Column 9), the share of surplus of every buyer increases (see Column 10) and the aggregate surplus of the buyers rises by 126 (from 36 to 162). The last two

columns show the net change in the surplus of the individual traders if the revenue loss of 216 was charged evenly across all traders. Eight of the twelve traders are better off than in the status quo, and the other four are worse off.

In a benchmarking session, we conduct a double auction among the 12 traders. This sessions consists of five periods with tariff (Eq.P = 272, Eq. Q = 3) followed by five periods without tariff (Eq.P = 230, Eq. Q = 6). Since experiments of this type have been conducted by others (add reference), we expect the market prices and allocations to rapidly settle down in the neighborhood of Walrasian equilibrium predictions.

Each of the three subsequent sessions is conducted with a fresh batch of 12 inexperienced subjects. These sessions abstract away from the double auction trading mechanism (assuming that with and without the tariff, the market will approximate the Walrasian prediction) and concentrate on the transfer mechanism to implement the trade liberalization.

Each session consists of three parts (A, B and C), and each part has ten periods. In Session 1, the three parts are presented in order A, B and C as shown in Figure 3. In Session 2 the order is B, C and A, and in Session 3, the order is C, A and B. Each subject learns from his/her computer screen (see Figure 3) two different profit figures: T Profit (taken from Column 5 or 8 of Table 1) is the default payment to the subject. NT Profit (taken from Columns 6 or 9 of Table 1) is the gross profit of the subject (instead of T Profit) if the voluntary contributions of the subjects add up to 216 or more. Each subject's voluntary contribution is subtracted from NT Profit to calculate the amount actually paid. At the end of each period, the net profit of the subject is transferred to the Profit Record Sheet (see Figure 4), and the Figure 3 screen is refreshed. The profit record sheet shows

not only the subject's own profit, but also the average profit of all traders for the period, and whether the period was a T or an NT period. At the end of the session, the profits of the subject are added across the three parts and converted to US dollars. This amount plus the on-time show up amount is paid to the subject in cash.

Results

(to be reported after the experiments are conducted).

Concluding Remarks (Tentative Draft)

Implementation of efficiency-improving policy actions suggested by the Hicks-Kaldor new welfare economics of hypothetical transfer payments is frequently blocked by the resistance put up by the losers in a democratic polity. When the agents affected by the policy action must approve the action, an appeal to the potential Pareto efficiency of action under hypothetical transfer payments is not enough. It amounts to little more than assuming that a man stranded in the desert has a bottle of water to sustain himself, and leaving him to perish of thirst. The results of our experiment **support/do not support** what the politicians have known for long: assuming that the transfer payments will materialize to realize the Pareto potential of the proposed policy action is not a reliable path to trade liberalization.

Without questioning the logic of welfare economics or free trade theory, we question the validity and consequences of assuming the automatic and effortless transfer payments among individuals, groups and nations. It is not our purpose to recommend that policy makers ignore distributional justice, or to oppose transfer of facilitate wealth from the rich to the poor drive by humanitarian motives. We only point out the plain fact that, under information asymmetry, it is difficult or costly to accomplish intended transfers.

Accordingly, the policy recommendations that have been set forth under the assumption of costless transfers deserve a reexamination with a more skeptical eye.

Market can have the remarkable power of inducing individuals to reveal information which is private to them, as each of them pursues its self-interest under conflicting motives to cooperate as well as compete, all at once. Hayek (1945) argues, and Plott and Sunder (1988) present evidence that under appropriate conditions, the sum of the information of in private hands can appear as knowledge common to all participants in a market. In implementing a scheme of transfers, motive to compete (for more subsidy and less taxation) are present in full force but the motive to cooperate is not. With the cooperative motive weakened by the collective nature of the policy, it fails to balance the competition, and the transfer mechanism fails to achieve the Hayekian miracle of information aggregation.

List of References

Bhagwati, Jagdish and T.N. Srinivasan, (1980), "The Welfare Consequences of Directly Unproductive Profit Seeking Activities: Price vs. Quantity Distortions," Journal of International Economics,

Coate, Stephen, and Morris, Stephen (1995), "On the Form of Transfers to Special Interests," Journal of Political Economy 103 (December), 1210-1235.

Dixit, Avinash K. (2001), "Games of Monetary and Fiscal Interactions in the EMU," European Economic Review, Vol. 45, No. 4-6, May, 589-613.

Dixit, Avinash K., Grossman, Gene M., and Helpman, Elhanan (1997), "Common Agency and Coordination: General Theory and Application to Government Policy Making," Journal of Political Economy 105 (August), 752-769.

Dixit, Avinash K. (1997), The Making of Economic Policy: A Transaction-Cost Politics Perspective, Cambridge, MA: The MIT Press.

Dixit, Avinash K., and Londregan, John B. (1995), "Redistributive Politics and Economic Efficiency," American Political Science Review 89 (December), 856-866.

Grossman, Gene M. and Helpman, Elhanan (1995), "Trade Wars and Trade Talks," Journal of Political Economy 103 (August), 675-708.

Grossman, Gene, M., and Helpman, Elhanan (1994), "Protection for Sale," American Economic Review 84 (September), 833-850.

Hamada, Koichi, and Shyam Sunder. 2004. "The Roles of Transfers and Participation Constraints in Trade Negotiations," Yale University, November 2004.

Hayek, F.A. 1945. "The of Knowledge in Society," The American Economic Review 35:4 (September), pp. 519-530.

Hicks, J. R. 1939. "The foundations of welfare economics," Economic Journal 49: 696-712.

Kaldor, N. 1939. "Welfare propositions in economics and interpersonal comparisons of Utility," Economic Journal 49: 549-552

Kemp, Murray C. and Paul Pezanis-Christou. 1999. "Pareto's Compensation Principle," Social Choice and Welfare Vol. 16 No. 3 (May), pp. ??

Kreuger, A. O., (1973), "the Political Economy of the Rent-seeking Society," American Economic review 69, no.3, 291-303.

Ledyard, John O. 1995. "Public Goods: A Survey of Experimental Research," in John H. Kagel and Alvin Roth, eds. The Handbook of Experimental Economics. Princeton University Press.

Libecap, G.D. and S. N. Wiggins. 1984. "Contractual Responses to the Common Pool: Prorating of Crude Oil Production," American Economic Review74:87-98.

Libecap, G.D. and S. N. Wiggins. 1985. "The Influence of Private Contractual Failure on Regulation: The Case of Oil Field Unitization," Journal of Political Economy 93:690-714.

Mill, J. S. 1825. "The corn laws," Westminster Review 3: 394-420. Reprinted in Collected Works of John Stuart Mill. Vol. IV. Essays on Economics and Society: 45-70. ed. J.M. Robson. University of Toronto Press and Routledge and Kegan Paul (1967).

Pareto V. 1894. "Il massimo di utilitaÁ dato dalla libera concorrenza," Giornale degli Economisti 9(2): 48-66. Translated in Collected Papers in Mathematical and

Quantitative Economics. Vol II. ed. JS Chipman. Academic Press, New York (forthcoming).

Plott, C. R. and Shyam Sunder. 1988. "Rational Expectations and the Aggregation of Diverse Information in Laboratory Security Markets." Econometrica 56:5 (September 1988), pp. 1085-1118.

Rawls, John. 1971. A Theory of Justice. Harvard University Press.

Rothschild, Michael, and J. E. Stiglitz. "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information," Quarterly Journal of Economics 90:4 (November 1976), pp. 629-649.

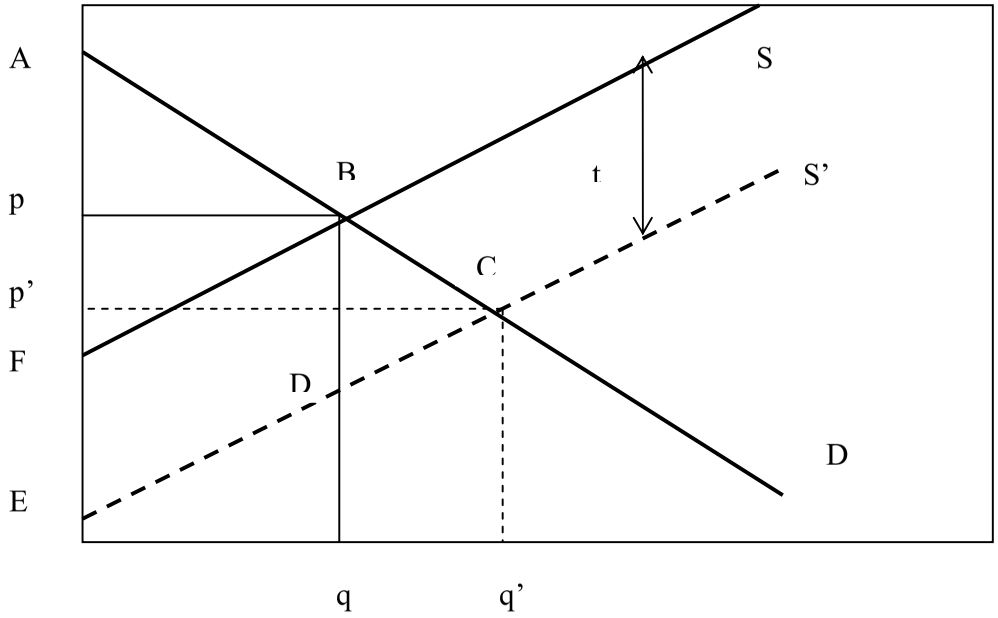
Samuelson, Paul A. (1947), *Foundations of Economic Analysis,* Cambridge.

Table 1: Design of the Market

Buyer or Seller No.	Buyer values (v)	Seller costs	Seller cost plus tax	Buyer Surplus (T)	Buyer Surplus (No T)	Buyer Surplus Change	Seller Surplus (T)	Seller Surplus (No T)	Seller Surplus Change	Buyer Surplus Chg after per capita tax	Seller Surplus Chg. After per capita tax
1	302	178	250	30	72	42	22	52	30	24	12
2	288	188	260	16	58	42	12	42	30	24	12
3	274	198	270	2	44	42	2	32	30	24	12
4	260	208	280	0	30	30	0	22	22	12	4
5	246	218	290	0	16	16	0	12	12	-2	-6
6	232	228	300	0	2	2	0	2	2	-16	-16
Totals				**48**	**222**	**174**	**36**	**162**	**126**	**66**	**18**

Buyer slope	14		Gross Chg in Surplus	300	Net change in surplus after tax	84	
Seller slope	10						
Tax/trade	72	Total Tax	216	Tax/capita	18		
Eq. P (T)	272						
Eq. P (NT)	230						
Eq. Q(T)	3						
Eq. Q(NT)	6						

Figure 1: Tariff and Surplus



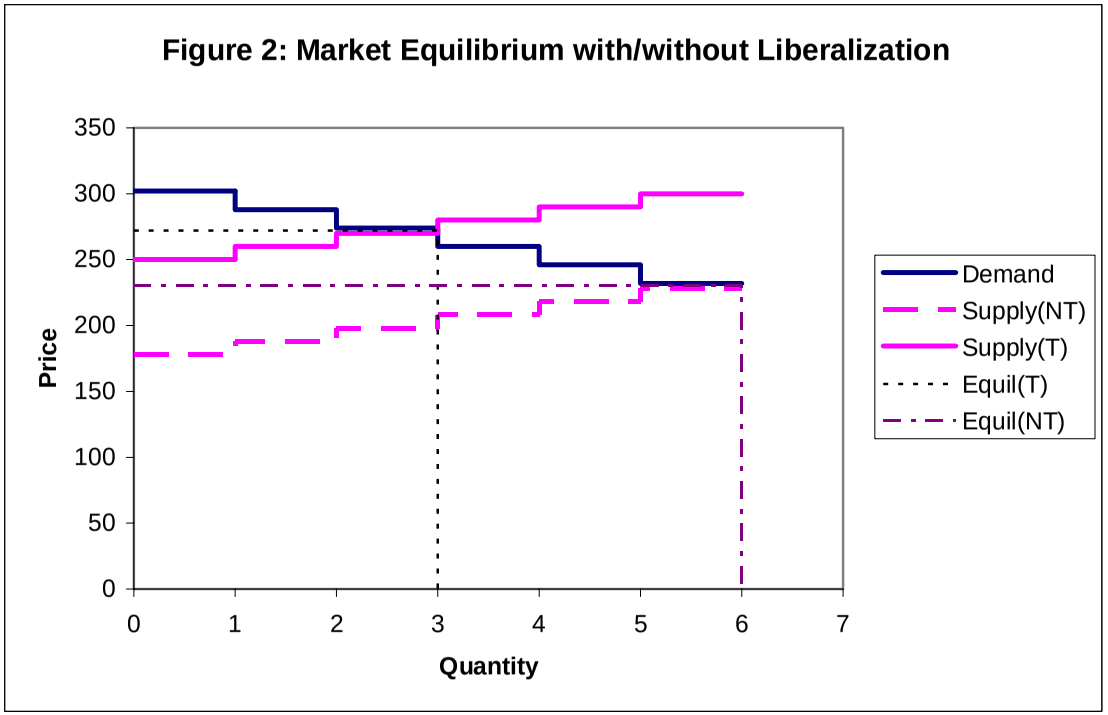


Figure 3: Computer Screen Layout for Experimental Sessions

A: Anonymous Public Contributions		**B: Public Contributions**		**C: Public Contributions with Negotiation**		
Your ID is **3**		Your ID is **3**		Your ID is **3**		Message Board
Your T Profit	2	Your T Profit	2	Your T Profit	2	ID2: xxx
Your NT Profit	44	Your NT Profit	44	Your NT Profit	44	ID1: yyy
Contributions Proposed (in order submitted)		Contributions Proposed		Contributions Proposed		ID6: zzz
		ID = 1		ID = 1		
		ID = 2		ID = 2		
		ID = 3		**ID = 3**		
		ID = 4		ID = 4		
		ID = 5		ID = 5		
		ID = 6		ID = 6		
		ID = 7		ID = 7		
		ID = 8		ID = 8		
		ID = 9		ID = 9		
		ID = 10		ID = 10		
		ID = 11		ID = 11		
		ID = 12		ID = 12		
Total Proposed Contributions		Total Proposed Contributions		Total Proposed Contributions		
Contribution Target		Contribution Target		Contribution Target		
Excess/Shortfall		**Excess/Shortfall**		**Excess/Shortfall**		

Figure 4: Profit Record Sheet
Your ID = 3

Period	Session Part 1			Session Part 2			Session Part 3		
	Your Profit	Average Profit	T or NT	Your Profit	Average Profit	T or NT	Your Profit	Average Profit	T or NT
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
Total for this part									
Total for session									
Total in US$									

Appendix
Procedure and Instructions for Experiment

1. Procedure

1. Recruit 15 subjects with no prior experience in laboratory economics experiments (with the expectation that 10 or more will attend).
2. Seat the subjects at least one space apart to minimize leakage of information.
3. Read Human Subject Committee instructions and sign forms.
4. Read experimental instructions.
5. Trial sessions
6. Test quiz to check if the instructions are understood
7. Conduct the experiment
8. Subjects fill out comments
9. Make payments to subjects

2. Subject Instructions for the Benchmark Session

You are participating in an experiment in decision-making. The instructions are simple; if you follow them carefully and make good decisions, you will earn more money which will be paid to you in cash at the end of the session. Throughout the session, you are not to speak to any one in the room other than the experimenters.

Each participant will be randomly assigned the role of a buyer or a seller.

Each buyer will be given a private value, v, which may be different for different buyers. Each buyer will have the right to buy up to one unit in the market. The buyers' profit would be (v-p) if he buys one unit at price p. Note that the buyers make money only if they buy at a price that is less than the value of the unit they buy. Thus a buyer who has the value of 2000 and buys one unit at price 1300, will make a profit of (2000-1300) = 700. No profit or loss is made if the buyer does not buy anything.

Each seller will be given a private cost, c, which may be different for different sellers. Each seller will have the right to sell up to one unit in the market. The sellers' profit would be (p-c) if he sells one unit at price p. Note that the sellers make money only if they sell at a price which is more than the cost of the unit they sell. Thus a seller who has the cost of 400 and sells the unit at price 1300 will make a profit of (1300-400) = 900. No profit or loss is made if the seller does not sell a unit.

Trading Process

Buyers and sellers will trade through their computers. Any buyer can submit a price at which he or she is willing to buy one unit. If this price is higher than the existing market bid, it becomes the market bid. Any seller can submit a price at which he or she is willing to sell a unit. If this price is lower than the existing market ask, it becomes the market ask. Any buyer can accept the market ask at any time to transact at that price. Any seller can accept the market bid at any time to transact at that price.

After five periods of trading, the sellers will be given new costs, and trading will continue for another five periods.

3. Subject Instructions for the Transfer Sessions

You are participating in an experiment in decision-making. The instructions are simple; if you follow them carefully and make good decisions, you will earn more money that will be paid to you in cash at the end of the session. Throughout the session, you are not to speak to any one in the room other than the experimenters.

This session consists of three parts. After these instructions for Part 1, you will make decisions for several periods. Then you will receive instructions for Part 2, and make decisions for that part, followed by instructions and decisions for Part 3.

Your computer screen will assign each participant an ID number which will be used to store the data from this experiment. This ID number is confidential and you are not to disclose it to anyone else in this room.

At the beginning of each part, you will receive two numbers, labeled T-Profit and NT-Profit. Please do not assume that these numbers are the same for all participants.

You will also be given a third number labeled Target Contribution, which is the same for all participants.

In each period, the participants will have the chance to make a contribution by entering it on the screen. You are free to enter any positive or negative number you wish to. If the sum of contribution made by all participants at the end of the period is equal to or more than the Target Contribution, your profit for the period will be (NT-Profit – Your contribution). If the total contributions made by all participants at the end of the period fall short of the Target Contribution, your profit for the period will be N-Profit.

As each participant enters his/her contribution on the computer, it will appear on your screen. You are free to change your contribution by re-entering it at any time until the time clock for the period runs out the 60 seconds allowed. The contributions when the time clock runs out are used to determine whether your period profit is T or NT.

This profit, as well as the average profit of the participants will be displayed on your profit record screen. This screen will also keep track of your cumulative profits and will convert your profit into US dollars at the rate of ___ per US dollar at the end of the session. This is the amount you will be paid (in addition to your punctuality bonus).

The next page contains instructions specific for Part 1 of the session.

Instructions for Part A

During the 60 seconds you have, the contributions proposed by various participants (including your own) will appear on your screen. The first contribution to be entered in the system will appear first, followed by others in chronological order. Changes in contributions entered subsequently will replace the earlier entry by the same person.

Instructions for Part B

During the 60 seconds you have, the contributions proposed by various participants (including your own) will appear on your screen next to the respective ID numbers. Changes in contributions entered subsequently will replace the earlier entry by the same person.

Instructions for Part C

During the 120 seconds you have, the contributions proposed by various participants (including your own) will appear on your screen next to the respective ID numbers. Changes in contributions entered subsequently will replace the earlier entry by the same person.

You also have the opportunity to negotiate the contributions with the other participants through messages sent through the computer screen. Any message you send will appear on the screens of all participants next to your ID number. The messages are not allowed to contain any names or other identifying information, or any threats.