Losses From Trade

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Work in Progress

I show that under certain conditions everyone can loose from trade liberalization. This does not depend on externalities, market power, or increasing or decreasing returns to scale. It extends simply from the fact that risk adverse agents dislike uncertainty. If the distribution of the gains and losses to trade are uncertain then this imposes a cost on the agents. If the net total gains from trade do not exceed the losses from uncertainty everyone can be worse off.

When markets are made freer there are winners and losers but the gains to the winners outweigh the losses to losers. This is one of the basic truisms of economics. There are select cases when this will not hold but in general we can expect the net gains from an increase in voluntary trade to be positive.

I show that in general this need not be the case. When the potential gains from trade are uncertain then agents will value them at lower than their expected value. When the potential losses from trade are uncertain agents will value them at greater than their expected value. Moreover, this effect occurs at the level of the individual agent rather than the aggregate economy.

This implies that the aggregate economy could experience gains with certainty yet each individual agent is uncertain about whether she will gain or loose. In this case, the net gains when measured at the aggregate level will necessarily be greater than the sum of all of the individual gains in welfare terms. Put another way, the sum of the welfare of gains from trade liberalization is less than the welfare of the sum.

The most striking case, which I model here, is the one in which the gains at the aggregate level are positive with certainty but the gains are negative for each individual agent. In this case we have a policy which appears to the economist as welfare enhancing yet every single agent opposes the policy.

Model

Let the economy be composed of N agents indexed 1 . . .n. Let $U_n(c)$ be the continuous concave utility function of the nth agent.

Now suppose that under current policy each agent receives consumption level, c_0. If the new policy is adopted then each agent has $\lambda \geq ½$[1] chance of being a winner and a $1-\lambda$ chance of being a loser. If the agent is a winner then she receives c_0+g+d if she looses than she receives c_0+g-d.

The logic is that g represents the generalized benefits of the policy to everyone where d represents the winner-loser specific portions of the policy.

[1] The restriction that lambda be greater than .5 is only to make it easier to show that the policy has net Kaldor-Hicks benefits. A lambda lower than .5 would only make the agents less likely to support the policy.

Conjecture: For all $g > 0$ the policy has aggregate benefits yet there exists $g > 0$ such that the expected utility from the policy change is negative for all agents.

Proof: The first part is straight forward. The expected consumption for each agent after the policy change is

$\lambda(c_0+g+d) + (1 - \lambda)(c_0+g-d) =$

$\lambda c_0+\lambda g+\lambda d + c_0 + g - d - \lambda c_0 - \lambda g +\lambda d =$

$c_0 + g + (2\lambda d - d)$ which is clearly greater than c_0 so long as $g > 0$ and $2\lambda d \geq d$.

The second part stems from risk aversion

By concavity $U_n(c_0) > U_n[\lambda (c_0 + d)] +U_n [(1-\lambda) (c_0 - d)]$ thus there exits $z > 0$ such that

$U_n(c_0) > U_n[\lambda (c_0 + d)] +U_n [(1-\lambda) (c_0 - d)] + 2z \Rightarrow$

$U_n(c_0) > U_n[\lambda (c_0 + d)] + z +U_n [(1-\lambda) (c_0 - d)] + z$

Because z is discrete and U is continuous there exist $g_a > 0$ such that

$U_n[\lambda (c_0 + d)]+ z > U_n[\lambda (c_0 + d) + \lambda g_a]$

And there exist also $g_b > 0$ such that

$U_n[\lambda (c_0 - d)]+ z > U_n[\lambda (c_0 - d) + \lambda g_b]$

Let g_n* be $\min(g_a, g_b)$

And since U is monotonically increasing we may write

$U_n(c_0) > U_n[\lambda\ (c_0 + d)] + z + U_n\ [(1-\lambda)\ (c_0 - d)] + z > U_n[\lambda\ (c_0 + d + g_n)] + U_n[\lambda\ (c_0 - d + g_n)]$

So for each agent there exists some g_n* such that she will not prefer to risk the losses from trade in exchange for the expected benefits.

Let $g^* = \min(g_1^* \ldots g_N^*)$

And so

$U_n(c_0) > U_n[\lambda\ (c_0 + d + g^*)] + U_n[\lambda\ (c_0 - d + g^*)]$

for all n.

QED

Implication

Since all agents would prefer not to adopt the policy it seems natural to conclude that the policy is not welfare enhancing. This implies that in general we cannot know *a priori* that an increase in trade liberalization will result in an increase in welfare. Gains from trade become an empirical question. The central issue is whether or not the gains are worth the risk on an individual level. Interestingly, this mimics rhetoric from some that workers group who oppose trade. The risk of loosing one's job particularly later in the life cycle may not be worth the expected gains. Such workers oppose trade not because it has net material losses but because it is too frightening. This is particularly interesting if we believe that an important part of wage contracts is either shielding workers from or compensating them for income uncertainty.

Objections

Perhaps, the most straight forward objection is that all agents are not worse off ex post. Some will be winners and they will be happy that they won. This is interesting because it introduces a time incongruity. A policy that seems unfavorable before the fact may seem favorable after the fact. The consistent with the colloquial observation that "There are things one wouldn't trade the world for having done but would never choose to do again."

When considering a policy, however, it is the ex ante evaluation that is most salient. This is the prospective from which individual choices must be made and the perspective does not change from experience. That is, suppose that the policy is forced on the agents. After the fact some will be happy that they won. Yet, when faced with an identical policy offer those same agent will rationally refuse it once again.

A second objection is that this is a specialized case, and not of general interest. The case where all agents refuse the policy is specialize, but it is in general true that whenever the distribution of gains is uncertainty individual agents will value them at below their expected value. This means that in general it is possible for the net gains when evaluated from the perspective of the agents to be negative even if the aggregate gains are positive with certainty. This calculation, however, is complex as it depends on the initial endowment, risk aversion and probability distribution for each agent. A fruitful line of research might include developing efficient means for estimating the net gains from the perspective of individual agents.

Conclusions

There are a couple of important insights that the author gleans from this analysis. First, is that distributional uncertainty is an important consequence of public policy. If policy makers are faced with choices, the effects of which are not distributed uniformly or with certainty then they must consider the extent to which they are exposing agents to increased risk. This is a real cost that agents must either absorb or take action to insure against.

The second insight is that this may be a rational source of status quo bias. Agents prefer the status quo policy because they are unsure whether they will be a winner or a loser. They may know with certainty how they are affected by the current policy and this provides a real benefit. Even if they know that a policy change has greater expected value that may not overcome the loss in certainty about distribution of benefits.