## Distribution issues

Useful way to see the problem:



If we didn't have a distribution problem (everyone at the same income), you'd have a vertical spike on one point. To the extent that there is a spread, there is unequal income distribution.

2 different interpretations of what this graph might be saying: We could be looking at society at a point in time (a snapshot) and therefore of current income

> People at the bottom could be there only temporarily (short-term unemployment, divorce). This does not mean that we shouldn't help them, but the solutions will take a different form.

People at the bottom could be retired (the elderly were once the largest group of poor--Social Security has changed some of that)

We could be looking at lifetime earning capacity

People at the bottom are there permanently for reasons of endowment/capacity to earn.

Capability Discrimination Personal choice of career path What are we trying to do, and what policy solutions are available? Are we trying to narrow the distribution at both ends, or just to move more people to the right of the poverty line?

<u>Narrow the distribution</u>: Take from the right tail (the rich) and give to the left tail (the poor). This is a classic "tax-and-transfer" solution. The result might look like the dotted curve. <u>Shift people to the right</u>: Changes the conditions that place people in the poor category. Human investment (education, job training) is one possible solution: gives people more human capital to use in the pursuit of income. This kind of solution helps the poor without necessarily hurting the wealthy. (How the program is funded is a separate issue in this case).

What about short-term poverty: how can we handle that? <u>Insurance</u>. There is some of that (unemployment, for example), but it's not provided by the private market. (Why not? moral hazard, adverse selection. More on these later--?) Because it's not provided by the private market but having it yields social benefits, the government steps in.

Social Security is insurance against poverty in old age. It's analogous to the tax & transfer curve on the graph if what we're looking at is current income: current workers are paying SS tax and current retirees are collecting.

## Chapter 3

On what criteria do we evaluate policy options?

Why do we care how we choose?

Policies usually hurt some people while they're helping others. <u>Public goods:</u>

Creating some kinds of public goods (highways, for example) interferes with the property rights of a few individuals (forced relocation). Some people will have a negative willingness-to-pay.

Some people will pay more/benefit less than others when public goods are created.

Externalities: Who loses from fixing an externality?

Negative: polluters and possibly the people who work for them are made worse off.

Positive: subsidies for good things must be paid by someone. Relative burdens and benefits will probably be uneven.

Monopolies: Who loses from intervening?

Owners of monopolies are prevented from earning the rents that they would be able to get absent regulation.

## Criteria we use to evaluate policies: 2 types

Pareto improvement: 2 features that both must be true:

- At least one person gains
- No person loses.

This combination of requirements doesn't make sense on its face (how many situations can you think of that naturally lead to this result?), but side payments make it possible. A condition of the Pareto rule is the *requirement* that those side payments be made from winners to losers in order to compensate losers for their losses. This is a redistributive mechanism, but doesn't actually transfer real wealth.

Stages of Pareto-efficient policy process:

- 1. Before policy implementation, A has 10 widgets and B has 15
- 2. After policy implementation but before Pareto-required payment, A has 20 widgets and B has 10.
- 3. After Pareto-required payment from A to B, A has 15 widgets and B has 15 widgets.

 $\therefore$  A is better off by 5, while B is restored to her original position of 15 widgets.

<u>Trade adjustment systems</u>: domestic industries that compete with imports lose when trade barriers are lowered, so these systems have been set up to help industries that are hurt by the change in law. At one level, it looks like a bribe, and it is in the sense that we're preserving voter loyalty, but it's also the right thing to do to ease the pain of social shifts.

Problem: virtually no public policy can actually meet the Pareto efficiency standard because transaction costs of

compensating make it impossible to do/guarantee. If we use the Pareto standard we won't get some very useful programs that make some people worse off. What do we do? Relax the rule a little. The next method does that.

Kaldor-Hicks criterion: 2 features that must be true:

- At least one person gains
- Gainers could more than compensate losers (that way nobody would lose and at least one person gain if the payment were made).

NO PAYMENT NEED ACTUALLY BE MADE! Key difference between Pareto and K-H.

Problems: compensation isn't actually made in practice, so some people lose.

Why do we use the K-H measure rather than Pareto? Possible stories (both pretty lame)

<u>pre-birth</u> choices--world where they use K-H and one where they use Pareto. Which would you choose?

K-H assures an expected value of being better off. (John Rawls, philosopher). This looks good before you get here.

political excellence at income distribution--Let's assume our political system is really good at optimizing income distribution. Now which would you choose?

K-H: presumably if we've decided not to actually compensate, our system (which is so wonderfully excellent at making these choices) has decided that the value of redistributing is greater than the value of letting folks keep their income.

Better reasons

Redistribution is costly and inefficient Over time, we hope that it all cancels out--but even when it doesn't our social insurance system kicks in.

The choice between Pareto and K-H is a decision regarding how many bad decisions we're willing to put up with in order to get good ones.

• With Pareto, we correctly identify more bad policies and avoid them at the expense of incorrectly identifying some good policies as bad ones and avoiding them also.

• With K-H, we correctly identify more good policies and adopt them at the expense of incorrectly identifying some bad policies as good ones and adopting them also.

Traditional K-H uses the same weight for every person--later we'll show how it's used with differential weights.

Dictators get to choose whatever policies they want, but we're in a system of democracy. Given that system, will we do a good job of making decisions that satisfy K-H, and to the extent that we don't, is it the fault of K-H?

<u>Public goods</u> (extremely specific example): We have to decide how much of a public good to consume, but 3 consumers (A, B, C) have different preferences. A wants it least, C wants it most, B is somewhere in between. The money for production must come from these three consumers. How will the vote come out, given these facts, if the cost burden is divided by 3 and each pays the same dollar amount?



In the graph above, the demands are *parallel* and *evenly spaced*. In such a case, Q\* will equal Qb (which is why this is a special example).

The sum of an individual's gains and losses is that person's *net welfare*. This can be positive or negative, as we'll see. What happens in the graph above if we move from  $Q_0$  to  $Q^*$ ?

A's net welfare:

Moving from  $Q_0$  through Qa to Q\*, A's gains are (G+H+I) and costs are (H+I+F), so the net result is G - F. Since F > G, moving from Qa to Q\* makes A a loser. Can A be compensated for the loss that society is going to require A to pay?

B's net welfare:

In the move from  $Q_0$  through Qa to Q<sup>\*</sup>, B gains (P+G+J+H+I+F) and pays (H+I+F), so B gains (P+G+J). B is a winner. (In fact, B can't be made better off: in this case, Q<sup>\*</sup> is equal to Qb.)

C's net welfare:

In the move from  $Q_0$  through Qa to Q<sup>\*</sup>, C gains (Q+K+P+G+J+H+I+F) and pays (H+I+F). C is a winner. (Note that C could be made even better off if society moved past Q<sup>\*</sup> to Qc. Would such a move be good for society? NO. Can you explain why?)

If we add up the gains and losses of A, B, and C, we'll find that the net sum is equal to triangle (S+M). Any time this triangle exists, there is a better solution by increasing Q, because the winners in the move could compensate the losers and still be better off. This is because the marginal benefit to society outstrips the marginal cost to society up to the point where MBS=MC. If you are asked what society gains and the identity of who wins and who loses is unimportant to you, you can save time by directly calculating the size of this triangle rather than figuring out individual gains and losses. Similarly, you can directly calculate the amount that society pays (everything below MC, above the x axis, and to the left of the

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vertical drawn from Q^*, which in this case is R+L+Q+K+P+J+G+F+H+I).
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For all three individuals, moving from  $Q_0$  to Qa is a gain of consumer surplus (the area above the MC/3 line (which is the cost that each pays) and below the individual's demand curve. Here, A gains triangle G; B gains (G+P); and C gains (G+P+Q). Since moving from  $Q_0$  to Qa is a gain for everyone, deciding whether to make the move isn't at all controversial--everyone would agree to it if asked to vote on it. Therefore, the interesting policy question is whether to move even further right, from Qa to Q\*. How would a vote on that move come out?

A votes no because A loses F-G.

B and C vote yes because each is a winner (B gains J; C gains J+K).

Majority vote would mean moving to Q\*.

As long as you keep voting on all possible changes, you'll always arrive at Q\* if it coincides with the level of a particular person. MORE ON THIS NEXT TIME.