

Lecture 10: Income Redistribution

Rawls's Original Position and the Maximin Criterion

The philosopher John Rawls, in 1971, posited the **original position**, a fictional state in which people who are yet to be born have no knowledge of what their position in society (in terms of family assets in childhood as well as eventual adult outcomes) will be.

Rawls argues that from this position, people's opinions concerning distributional goals are impartial and fair. He believes that in the original position, people will favor a **maximin** social welfare function, specified as

$$W = \text{Minimum}(U_1, U_2, \dots, U_n)$$

The maximin is preferable because people in the original position are frightened about where they'll end up in the distribution, and they want the worst possible outcome to be as good as possible.

Do we agree with Rawls that the views of people in the original position are of more moral validity? That people in the initial position would not prefer small amounts of risk of low wealth accompanied by the possibility of high wealth?

The 20/80 rule

The Italian economist Pareto noted that wealth is unequally distributed in most societies, with 20% of the population controlling 80% of the wealth.

In business, 20/80 rules are popular. About 20% of real estate agents account for 80% of sales. About 20% of books published each year account for 80% of all sales.

Measurement of Wealth Inequality

The unit of measure for the US Census is generally the **household**, a person, family or group of unrelated persons residing under one roof, or the **family**, two or more related persons residing together.

If we rank US families from lowest to highest income, then we can create income **quintiles**, five groups of families with similar positions in the income distribution. The first quintile contains all families whose family incomes are less than those of 80% of US families, and the fifth quintile contains all families whose family incomes are greater than those of 80% of US families.

The following table reports the shares of total family income (pre-tax, including Social Security and welfare, excluding capital gains) received by families in each quintile in the US, from 1970 to 1998:

Year	1	2	3	4	5
1998	4.2%	9.9%	15.7%	23.0%	47.3%
1990	4.6	10.8	16.6	23.8	44.3
1980	5.3	11.6	17.6	24.4	41.1
1970	5.4	12.2	17.6	23.8	40.9

The share to the lowest quintile in 1998 was 4.2%, and to the highest was 47.3%. Additionally, the top 5% of the income distribution received 20.7% of family income in 1998.

Further, the concentration of wealth at the top has been increasing since 1970. Each of the lower 4 quintiles has a smaller share in 1998 than in 1970, and the top quintile has a higher share in 1998 than in 1970 (47.3 v. 40.9%).

This table does not account for capital gains income. If this sort of income were included, how would the concentration of wealth change?

The **Lorenz curve** is a graphical depiction of the amount of wealth inequality in an economy. In a Lorenz curve, families are ranked according to income and the x-axis represents percentile in the income distribution. The y-axis represents % of total family income received by those at or below a given percentile. Note that in this sense the Lorenz curve is cumulative.

The 45 degree line represents perfect equality in the Lorenz diagram. Why?

We will now plot the information in our quintile table on a Lorenz diagram. How does this Lorenz curve relate to perfect equality? What would perfect inequality look like in this diagram, and how does our Lorenz curve differ from it?

A simpler (though with some loss of information) measure of a society's inequality is the Gini ratio. Graphically, the Gini ratio is equal to the area between the Lorenz curve and the equality line over the difference between the inequality angle and the Lorenz curve.

What is the Gini at perfect inequality? At perfect equality? So is a more preferable (more equal) gini large or small?

Let's take a moment to consider a figure depicting Gini coefficients in the US over the period from 1970-1998. It appears that inequality has been increasing over that time.

Economists have considered competing explanations for the increase in inequality, including a reduction of welfare payments and the lowering of taxes for high income groups, and have concluded that the driving force behind inequality growth has been the increasing earnings differential between skilled, educated workers and unskilled, less-educated workers. Factors like globalization and technological change have put a premium on skills, education and workforce experience.

How concerned are we about rising income inequality?

Schumpeter's analogy: The income distribution is a hotel, with many rooms of varying quality. We're interested in the mobility of the people from room to room, *as well as*

the disparity in qualities among rooms. We care about both (a) mobility in the income distribution and (b) disparity in the income distribution at any given time.

Given equal opportunity for all citizens, we might still see sizable income inequality in the US. Why?

Age: young workers generally have lower earnings due to lack of experience. In middle age, most people reach the peak of their earnings profile, as a result of gained experience. As people age and approach retirement, earned income falls, creating an upside-down U shape to lifetime earnings.

Income may also vary over time due to intertemporal substitution of leisure and the ability of workers to save.

Since in the US we're generally most concerned with equality of opportunity, we study income mobility.

The US Census Bureau studied the Income to Poverty Ratio (IPR), constructed as family income divided by the poverty line for the family's size, from 1994-5. They found that in 1994, people in the lowest family income quintile had an average IPR of .92, while those in the top quintile had an average of 4.67.

Between 1994 and 1995, the IPR changed by $< 5\%$ for 22.7% of families, declined by $> 5\%$ for 36.8% of families and increase by $> 5\%$ for 40.5% of families. This indicates substantial income mobility in the US.

Income, particularly labor income with no accounting of capital income, may be an imperfect measure of economic resources.

We therefore consider two other measures of households' economic statuses in our distribution studies.

Some economists believe that *consumption* by a household may tell us more about its actual well-being. Low income households generally consume more than their incomes, through transfers from family or friends, spending out of saving, borrowing, etc. High income households generally consume less than their incomes, saving and investing the rest.

Since high income households tend to save, many economists believe that household *wealth* (or net worth) is a better measure of a family's capacity to consume.

The following table reports quintile shares measured out of total family consumption and wealth, rather than income.

Quintile:	1	2	3	4	5
Share of:					
Cons'n in 1998	8.9%	12.7%	16.9%	23.5%	42.8%
Cons'n in 1984	9.6	13.1	17.3	23.2	37.2
Net worth in 1995	.2		4.5	11.4	83.9
Net worth in 1983	.9		5.2	12.6	81.3

Note that Pareto's 20/80 rule does apply to the distribution of wealth in the US.

We also see that consumption is less unequally distributed than both income and wealth, and wealth is most unequally distributed. We also see the trend toward increasing inequality in both consumption and wealth.

International comparisons of inequality: The Luxembourg Income Study (LIS) is a study of income inequality across countries. LIS found that in 1994 Gini ratios were

US .38	UK .36	Sweden .22
Italy .36	Germany .30	Canada .28

Many developed countries have significant income inequality. The rate of growth in inequality varies substantially across these countries; the growth in inequality in the US does not necessarily represent an international trend.

Recent research: Flinn (2001) finds that, while in a given year income inequality is generally greater in the US than in Italy, job mobility is significantly higher in the US than in Italy. He finds lifetime income inequality roughly comparable between the two countries.

Why should government redistribute?

The US government does redistribute income through Social Security, welfare (TANF), Medicare and Medicaid, food and housing assistance and many other programs. What arguments are made for government redistribution?

(1) Redistribution is a public good. Based on charitable contributions made by Americans, they seem to have a positive marginal willingness to pay for charity. This WTP depends on own charitable actions and the charitable actions of others, indicating that charity is nonrival. One person's gift to the disadvantaged creates benefit for all.

We can model the supply and demand for charitable actions as we did public goods.

Suppose Regina and David each value the public good (charity) according to demand curve d in our graph. The supply of \$1 of charity is horizontal (infinitely elastic) at a price of \$1 in our graph. In the private equilibrium, Regina and David will each contribute \$5.

This equilibrium is inefficient, as it doesn't take into account the external benefits of charity. The social demand for charity is the *vertical sum* of Regina's and David's demands, curve D .

If the government taxed Regina and David \$30 each and contributed \$60 to charity then both would be better off, and their society would reach the efficient point at which D (social demand for charity) = S . Note that this is a case of *Pareto efficient redistribution*.

(2)Redistribution functions as Social Insurance. We will discuss the concept of social insurance in some detail in the coming weeks. For now, note that families face a variety of income risks, and that traditional markets are likely to fail to provide efficient amounts of insurance against income risks.

As a result of the income insurance market failure, the government steps in and provides social insurance, which protects families against very poor outcomes.

Economists' principles of equity

Economists have identified 4 main principles of equity, all of which we generally feel are desirable.

(1)The Process Principle Under the process principle, equity requires that all individuals face the same rules of the system in earning their incomes. Additionally, the process

should be constant and predictable—no changing the rules in the middle of the game.

(2)The Benefit Principle This principle of equity requires that consequences depend on actions. If individuals who work harder become richer than individuals who do not work, the resulting income distribution satisfies the benefit principle. In terms of equity in taxation, the benefit principle implies that individuals who benefit most from an expenditure should bear the largest burden of the tax that finances it. eg: a tax on gasoline whose revenues go to support road construction is equitable according to the benefits principle.

(3)The Horizontal Equity Principle “Equals should be treated equally”. A policy is inequitable if it has different impacts on people in similar economic circumstances. A tax law which taxes two families very differently, though they have the same ability to pay, does not satisfy horizontal equity.

(4)The Vertical Equity Principle This one is closest to the Marxist ‘from each according to his (*sic.*) ability, to each according to his (*sic.*) need’. The vertical equity principle states that taxes levied on the household should be in accordance with its ability to pay. Under vertical equity, a policy that increases the income of a wealthy household is less desirable than a policy that increases the income of a poorer household.

Clearly, some of these principles conflict with others. What is the conflict between (2) & (4)? (1) & (3)?

Because of these conflicts, in considering the equity implications of a given tax or policy economists generally focus on its horizontal and vertical equity.

How are the horizontal and vertical equity desires of society reflected in the shape of our standard social indifference curves?

Horizontal equity The SWF contains a preference for horizontal equity to the degree that its indifference curves are reflected around the 45 degree line (see graph).

Vertical equity The SWF contains a preference for horizontal equity to the degree that its indifference curves are curved upward. Linear indifference curves show no concern for social equity, in that the SWF is just the sum of individual utilities in this case. Indifference curves that slope upward indicate that social welfare is greater at more balanced utility distributions (see graph). In general, we call the degree of curvature of the indifference curves of the SWF its degree of *inequality aversion*.

The Efficiency Cost of Redistribution

Any government redistribution of income must be supported by some form of tax. We saw in the first lecture that taxing labor income can lead to a work disincentive. Later in the course we will discuss other sources of efficiency loss with taxation.

Additionally, any government program imposes an administrative cost.

Should we redistribute income until all members of society have the same amount? The answer to that question has to do with the equity-efficiency trade-off between the equity costs of redistribution and the efficiency costs of taxation and program administration. Bear in mind as we get to the study of taxes that the *deadweight loss* associated with a tax is one measure of the efficiency cost of redistribution, to be weighted against the benefits of redistribution in terms of fairness.