Introduction to Taxes and Transfers:
Income Distribution, Poverty, Taxes and Transfers

131 Undergraduate Public Economics
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REMINDER: Two General Rules for Government Intervention

1) Failure of 1st Welfare Theorem: Government intervention can help if there are market failures

2) Fallacy of the 2nd Welfare Theorem: Distortionary Government intervention is required to reduce economic inequality
Role 2: 2nd Welfare Theorem Fallacy

Even with no market failures, free market outcome might generate substantial inequality

Inequality matters because people evaluate their economic well-being relative to others, not in absolute terms ⇒ Public cares about inequality

2nd Welfare Theorem: Any Pareto Efficient outcome can be reached by (1) Suitable redistribution of initial endowments [individualized lump-sum taxes based on indiv. characteristics and not behavior], (2) Then letting markets work freely

⇒ No conflict between efficiency and equity

In reality, redistribution of initial endowments is not feasible (information pb) ⇒ govt needs to use taxes and transfers based on economic outcomes (income, consumption, etc.) ⇒ Conflict between efficiency and equity
Income Inequality: Labor vs. Capital Income

Individuals derive market income (before tax) from labor and capital: \( z = wl + rk \) where \( w \) is wage, \( l \) is labor supply, \( k \) is capital, \( r \) is rate of return on capital

1) Labor income inequality is due to differences in working abilities (education, talent, physical ability, etc.), work effort (hours of work, effort on the job, etc.), and luck (labor effort might succeed or not)

2) Capital income inequality is due to differences in wealth \( k \) (due to past saving behavior and inheritances received), and in rates of return \( r \) (varies dramatically overtime and across assets)
Income Inequality: Labor vs. Capital Income

1) Capital Income (or wealth) is more concentrated than Labor Income: Top 1% wealth holders have 1/3 of total wealth. Top 1% labor income earners have about 15% of total labor income. [Top 1% incomes have 20% of total income]

2) Labor income is around 80% of aggregate market income from National Accounts (capital income is 20%). Fairly constant overtime and across industrialized countries.

[In GDP, gross capital share is higher (30%) because it includes depreciation of capital]
Income Inequality Measurement

Inequality can be measured by indexes such as Gini, log-variance, quantile income shares which are functions of the income distribution $F(z)$

Gini = 2 * area between 45 degree line and Lorenz curve

Lorenz curve $L(p)$ at percentile $p$ is fraction of total income earned by individuals below percentile $p$

$0 \leq L(p) \leq p$

Gini=0 means perfect equality

Gini=1 means complete inequality (top person has all the income)
Gini Coefficient California pre-tax income, 2000, Gini=62.1%
Key Empirical Facts on Income Inequality

1) In the US, labor income inequality has increased substantially since 1970: debate between skilled biased technological progress view vs. institution view (min wage and Unions) [Autor-Katz’99]

2) In the US, top income shares dropped dramatically from 1929 to 1950 and increased dramatically from 1980 to 2007 [Piketty and Saez]

3) Top incomes used to be primarily capital income. Now, top incomes are divided 50/50 between labor and capital income (due to explosion of top labor incomes with stock-options, bonuses, etc.)

4) Fall in top income shares from 1900-1950 happened in most OECD countries. Surge in top income shares has happened primarily in English speaking countries, not as much in Continental Europe and Japan [Atkinson, Piketty, Saez JEL’11]
Figure 1: Gini coefficient

Source: Kopczuk, Saez, Song QJE'10
Top 10% Pre-tax Income Share in the US, 1917-2011

Source: Piketty and Saez, 2003 updated to 2011. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.
**Decomposing Top 10% into 3 Groups, 1913-2011**

Source: Piketty and Saez, 2003 updated to 2011. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.
Top 0.1% US Pre-Tax Income Share, 1913-2011

Source: Piketty and Saez, 2003 updated to 2011. Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.
### Table 1. Real Income Growth by Groups

<table>
<thead>
<tr>
<th></th>
<th>Average Income Real Growth</th>
<th>Top 1% Incomes Real Growth</th>
<th>Bottom 99% Incomes Real Growth</th>
<th>Fraction of total growth (or loss) captured by top 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Full period</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993-2011</td>
<td>13.1%</td>
<td>57.5%</td>
<td>5.8%</td>
<td>62%</td>
</tr>
<tr>
<td><strong>Clinton Expansion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993-2000</td>
<td>31.5%</td>
<td>98.7%</td>
<td>20.3%</td>
<td>45%</td>
</tr>
<tr>
<td>2001 Recession</td>
<td>-11.7%</td>
<td>-30.8%</td>
<td>-6.5%</td>
<td>57%</td>
</tr>
<tr>
<td>2000-2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bush Expansion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002-2007</td>
<td>16.1%</td>
<td>61.8%</td>
<td>6.8%</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Great Recession 2007-2009</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007-2009</td>
<td>-17.4%</td>
<td>-36.3%</td>
<td>-11.6%</td>
<td>49%</td>
</tr>
<tr>
<td><strong>Recovery</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009-2011</td>
<td>1.7%</td>
<td>11.2%</td>
<td>-0.4%</td>
<td>121%</td>
</tr>
</tbody>
</table>

Computations based on family market income including realized capital gains (before individual taxes). Incomes exclude government transfers (such as unemployment insurance and social security) and non-taxable fringe benefits. Incomes are deflated using the Consumer Price Index.
Top 1% share: English Speaking countries (U-shaped)

- United States
- United Kingdom
- Canada
Top 1% share: Continental Europe and Japan (L-shaped)
Facts on Income Distribution in the United States

Relative Income Inequality

According to these data, the share of income received by the lowest quintile in the United States is smaller than in any other nation, and is less than half of the worldwide average. The share of income received by the highest quintile in the United States is higher than in any nation except Mexico, and is nearly 25% higher than the worldwide average.
POVERTY RATE DEFINITIONS

1) **Absolute:** Fraction of population with disposable income (normalized by family size) below **poverty threshold** $z^*$ fixed in real terms (US case, World Bank $1/day in 1990 PPP)

2) **Relative:** Fraction of population with disposable income (normalized by family size) below **poverty threshold** $z^*$ fixed relative to median (European Union defines poverty threshold as 60% of median)

Absolute poverty falls in the long run with economic growth [nobody in the US is World Bank poor] but relative poverty does not

Absolute poverty captures both growth and inequality effects while relative poverty captures only inequality effects

A recent study by Luttmer (2004) also finds that individuals’ self-reported well-being rises as their own income rises, but falls as their neighbors’ incomes rise, suggesting that it is relative income, and not absolute income, that determines well-being.
Poverty Rate Disposable Income Definition

Most intuitive notion of poverty is based on consumption $c$ [not pre-tax income $z$]

$$c = z - T(z) + B(z) + E - s$$

where $T(z)$ is tax, $B(z)$ govt transfers, $E$ net private transfers (charity, family, friends), $s$ is net savings (change in assets)

**Consumption** $c$ is difficult to measure

**Disposable Income** $z - T(z) + B(z)$ [post-tax income] measured in traditional Current Population Survey (CPS) [but does not fully capture in-kind elements of $B(z)$ such as Medicaid]
FAMILY SCALE

Ideally, poverty should be defined at the individual level based on individual consumption [e.g., kids better off when mother or grandmother controls income instead of father]

However, many consumption goods are public goods within the family [e.g., housing, joint meals, etc.] and hard to measure consumption at individual level

Measured poverty is therefore based on consumption or disposable income at the family level [or unit sharing resources] and everybody within the family has same poverty status

Bigger families need more resources but economies of scale in consumption: scale disposable income by family size
US POVERTY RATE DEFINITION


Definition developed in 1963 by Molly Orshansky (at Social Security Administration) as 3 times amount required to buy a “thrifty food plan”

[3 times because 1955 survey showed that low income families spent 1/3 of income on food]

Poverty threshold afterward indexed on official Consumer Price Index and adopted by Administration as Official Poverty Index

Family scaling was based on 1955 survey


**US POVERTY RATE DEFINITION**

Based on **money income** = market income before taxes + cash govt transfers + cash private transfers

In-kind market income and transfers (employer health insurance, Medicaid, nutrition, public housing) do NOT count

Income and employee payroll taxes are NOT deducted, Income tax credits (EITC, Child Tax Credit) are NOT added

Threshold depends on household size/structure: e.g., $18K/year for single parent with 2 kids

Thresholds adjusted annually using the official CPI
Facts on Income Distribution in the United States

Absolute Deprivation and Poverty Rates

<table>
<thead>
<tr>
<th>Size of family unit</th>
<th>Poverty line</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$10,825</td>
</tr>
<tr>
<td>2</td>
<td>$14,570</td>
</tr>
<tr>
<td>3</td>
<td>$18,310</td>
</tr>
<tr>
<td>4</td>
<td>$22,050</td>
</tr>
<tr>
<td>5</td>
<td>$25,790</td>
</tr>
<tr>
<td>6</td>
<td>$29,530</td>
</tr>
<tr>
<td>7</td>
<td>$33,270</td>
</tr>
<tr>
<td>8</td>
<td>$37,010</td>
</tr>
</tbody>
</table>

For each additional person, add $3,740

A family of four with an income of less than $22,050 per year is considered to be living below a minimum acceptable standard in the United States.
ISSUES WITH US POVERTY RATE DEFINITION

Definition was close to disposable income in 1963 but no longer:

1) In-kind transfers have grown substantially [Medicaid]

2) Payroll tax and Income tax credits (EITC, Child Tax Credit) have grown substantially at the bottom

3) CPI is for the average consumer, low income consumer price might evolve differently (Walmart) [also geographical variation]

Politically difficult to change definition
declined steadily during this period, falling from 24.6 percent in 1970 to 10.2 percent in 2003.

Other factors may better explain why the poverty rate has failed to fall. Rising numbers of female headed families may offset income gains from women's increasing labor force participation. Increasing income inequality—in particular stemming from declines in wages for less-skilled workers—may have limited the poverty-fighting effects of economic growth. Finally, the level of and changes in government benefits directed toward the nonelderly may explain why the nonelderly poverty rate has not moved in the same direction as elderly poverty. Our task in this paper is to document and quantify the effects of these competing factors to understand recent poverty trends better. Since the steady fall in elderly poverty rates in recent decades is likely explained by other factors such as Social Security (Englehardt and Gruber, 2004), we focus throughout this paper on the conundrum of why the nonelderly poverty rate has failed to decline as the economy has expanded.

### Dimensions of Poverty

In this section, we summarize some basic facts about poverty in the United States, relying on a combination of previously published data from the Census.

**Figure 1**

Trends in Individual Poverty Rates and Real GDP per Capita, 1959–2003

![Figure 1](image-url)


Note: The poverty rate data are unavailable for some subgroups for 1960–1965.
FACTORS EXPLAINING EVOLUTION OF POVERTY

Based on Hoynes-Page-Stevens JEP’06

1) Increasing pre-tax inequality: stagnant bottom wages in spite of economic growth per capita [large effect]

2) Changes in family structure: single parent families ↑ from 7% in 1967 to 14.4% in 2003 ⇒ Increases poverty rate by 4 pts [large effect]

3) Increase in female labor force participation ⇒ Reduces poverty rate [significant effect only since 1980]

4) Immigration: accounts for about 0.7 points in the poverty rate increase from ’69 to ’99 [small effect]

5) Means-tested transfers [medium effect because they are concentrated below poverty line]
The racial and ethnic composition of the poor is disproportionately minority, but the modal poor individual is a white non-Hispanic. In 2003, 42.2 percent of the poor were white, 24.1 percent black and 26.8 percent Hispanic. In the overall population, whites make up 65.7 percent, blacks make up 12.6 percent, and Hispanics 15.1 percent. Immigrants are 17.4 percent of the poor.

Table 1
Characteristics of the Nonelderly Poor, 2003
(percentage with given characteristic)

<table>
<thead>
<tr>
<th>Individual characteristics</th>
<th>Among nonelderly poor</th>
<th>Among all nonelderly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt;18</td>
<td>39.8%</td>
<td>28.8%</td>
</tr>
<tr>
<td>Male</td>
<td>45.5%</td>
<td>49.8%</td>
</tr>
<tr>
<td>Female</td>
<td>54.5%</td>
<td>50.2%</td>
</tr>
<tr>
<td>Family head is</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>35.0%</td>
<td>66.6%</td>
</tr>
<tr>
<td>Single with kids</td>
<td>39.1%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Single without kids</td>
<td>25.8%</td>
<td>18.9%</td>
</tr>
<tr>
<td>White</td>
<td>42.2%</td>
<td>65.7%</td>
</tr>
<tr>
<td>Black</td>
<td>24.1%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>26.8%</td>
<td>15.1%</td>
</tr>
<tr>
<td>Family head’s education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;High school</td>
<td>35.3%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Native-born</td>
<td>82.6%</td>
<td>87.4%</td>
</tr>
<tr>
<td>Immigrant</td>
<td>17.4%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Head worked last year</td>
<td>50.0%</td>
<td>81.1%</td>
</tr>
</tbody>
</table>

Source: Author’s tabulations of the 2004 March CPS.
Note: The age, gender, race and ethnicity are assigned using the individual’s characteristics. Family type, immigrant status, education and employment are assigned based on characteristics of the head of the family.
Figure 2

Source: Authors’ tabulations of the 1968–2004 March CPS.
Notes: Median hourly wages are defined for all full-time working men. See text for more details.
Table 3

Effect of Family Structure on Nonelderly Poverty Rates

<table>
<thead>
<tr>
<th>Persons by family type</th>
<th>Percentage of nonelderly persons by family type</th>
<th>Percentage of nonelderly persons in poverty by family type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married couples with children</td>
<td>67.3</td>
<td>44.2</td>
</tr>
<tr>
<td>Married couples without children</td>
<td>18.7</td>
<td>22.4</td>
</tr>
<tr>
<td>Single women with children</td>
<td>6.2</td>
<td>11.9</td>
</tr>
<tr>
<td>Single men with children</td>
<td>0.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Single women without children</td>
<td>4.4</td>
<td>9.6</td>
</tr>
<tr>
<td>Single men without children</td>
<td>2.6</td>
<td>9.3</td>
</tr>
<tr>
<td>All persons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage in poverty, actual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predicted poverty, changes in family type only</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ tabulations of the 1968 and 2004 March CPS.
Table 4

Percentage of Persons in Poverty by Alternative Definition of Income, 2003, Measuring Impacts of Government Programs

<table>
<thead>
<tr>
<th></th>
<th>Nonelderly persons</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Official poverty measure</td>
<td>12.7</td>
<td>17.6</td>
</tr>
<tr>
<td>(Money income = pretax, postgovernment cash transfers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty reduction due to EITC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Money income (official measure) less all taxes except EITC</td>
<td>13.9</td>
<td>19.1</td>
</tr>
<tr>
<td>(c) Money income less all taxes (including EITC)</td>
<td>12.2</td>
<td>16.0</td>
</tr>
<tr>
<td>Poverty reduction due to means-tested cash transfers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Full income less taxes less means tested government cash transfers(^a)</td>
<td>12.2</td>
<td>15.8</td>
</tr>
<tr>
<td>(e) Full income less taxes</td>
<td>11.4</td>
<td>14.9</td>
</tr>
<tr>
<td>Poverty reduction due to non means-tested cash transfers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(f) Pregovernment transfer money income less taxes(^b)</td>
<td>15.2</td>
<td>17.8</td>
</tr>
<tr>
<td>(g) Pregovernment transfer money income less taxes plus nonmeans tested cash government transfers</td>
<td>12.4</td>
<td>15.9</td>
</tr>
<tr>
<td>Poverty reduction due to means-tested noncash transfers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(h) Full income less taxes (definition e above)</td>
<td>11.4</td>
<td>14.9</td>
</tr>
<tr>
<td>(i) Full income less taxes plus Medicaid</td>
<td>10.8</td>
<td>13.8</td>
</tr>
<tr>
<td>(j) Full income less taxes plus Medicaid plus other means-tested government noncash transfers</td>
<td>9.9</td>
<td>12.3</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of the Census (2005) and special tabulations by the Census Bureau.

Notes:
- To locate these figures in the Census report, note that (a) is Census definition 1; (b) is Census definition 1a; (c) is Census definition 1b; (d) is Census definition 11; (e) is Census definition 12; (f) is Census definition 8; (g) is Census definition 9; (i) is Census definition 13; and (j) is Census definition 14. Taxes include payroll taxes, federal and state taxes. Means-tested government cash transfers include TANF, Supplemental Security Income, means tested Veteran’s payments and other public assistance. Non-means-tested government cash transfers includes Social Security, unemployment compensation, worker’s compensation, nonmeans tested Veteran’s payments, Railroad Retirement, Black Lung payments, Pell Grants and other educational assistance. Means-tested noncash transfers include food stamps, rent subsidies, and free and reduced-price school lunches. For details on simulating taxes, see O’Hara (2004). For details on calculating the value of noncash benefits, see U.S. Bureau of the Census (1992).

\(^a\) Full income includes pretransfer money income less means tested transfers plus capital gains, employer paid health insurance, Medicare and regular-price school lunches.

\(^b\) Income measure also includes capital gains and employer paid health insurance.
the poverty rate fell so much between 1959 and 1969, while a growing and increasingly low-income immigrant population cannot explain much of the trend in poverty prior to 1980. On the other hand, if we focus on the second half of the period, we see that while poverty rates among natives have changed little, poverty rates among immigrants have increased by nearly two percentage points, and the fraction of the population that is foreign born has increased by six percentage points. Taken together, these changes should put upward pressure on the poverty rate, but how much?

To answer this question, we begin by considering the extent to which overall poverty would have declined if the share of immigrants had increased over time but immigrants and natives had kept same poverty rates as in 1979. We find that if the level of poverty among immigrants had stayed the same as it was in 1979, the rising share of immigrants would have increased the poverty rate from 12.3 percent (1979) to 12.5 percent (1999), a number that is only slightly bigger than the actual value of 12.4 percent. We also consider the effects of changes over time in the fraction of immigrants who are poor. If we hold population shares and native poverty rates constant at their 1979 levels, but allow poverty rates among immigrants to vary across Census years, then the predicted overall poverty rate in 1999 is about 0.1 percentage points higher than its 1979 level. Although recent immigrants are poorer than their predecessors, their fraction of the population is simply too small to affect the overall poverty rate by much.

These calculations are based on an important assumption, however, which is that large influxes of immigrants do not reduce job opportunities available to natives. If the presence of immigrant workers depresses native’s wages, then the overall impact of immigration on the poverty rate will be higher. Evidence on the labor market effects of immigration is mixed (see Borjas, 1999, for an overview of this literature), but it seems safest to consider these estimates as lower bounds.

Table 5
Nonelderly Poverty Rates in Native and Immigrant Households, by Year

<table>
<thead>
<tr>
<th></th>
<th>All persons</th>
<th>Persons in households headed by a native</th>
<th>Persons in households headed by an immigrant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poverty rate</td>
<td>Poverty rate</td>
<td>Percentage of population</td>
</tr>
<tr>
<td>1959</td>
<td>20.6</td>
<td>20.9</td>
<td>95.8</td>
</tr>
<tr>
<td>1969</td>
<td>12.4</td>
<td>12.5</td>
<td>95.9</td>
</tr>
<tr>
<td>1979</td>
<td>12.3</td>
<td>12.1</td>
<td>94.0</td>
</tr>
<tr>
<td>1989</td>
<td>12.9</td>
<td>12.5</td>
<td>91.4</td>
</tr>
<tr>
<td>1999</td>
<td>12.4</td>
<td>11.8</td>
<td>87.9</td>
</tr>
</tbody>
</table>

Recomputing Poverty Rate: Meyer-Sullivan NBER’09

1) Change the scaling for family size (no strong effect)

2) Change the price index: shift to CPI-U-RS instead of official CPI-U (large effect, controversial, a problem with absolute poverty thresholds)

3) Shift to households [people living in same unit] instead of family [people in same unit related by blood/adoptions]: not clear which is best, depends on sharing [some effect]

4) Shift to after-tax income [deduct income/payroll taxes, add tax credits]: large legitimate effect

5) Add non-cash benefits [nutrition, housing, health insurance]: tiny net effect [medicaid ↑, other programs ↓]

6) Shift to consumption [modest effect on poverty rate, huge effect on deep poverty]
Notes: The rates are anchored at the official rate in 1980. Data are from the CPS-ASEC/ADF. Official Income Poverty follows the U.S. Census definition of income poverty using official thresholds. For measures other than the official one, the threshold in 1980 is equal to the value that yields a poverty rate equal to the official poverty rate in 1980 (13.0 percent). The thresholds in 1980 are then adjusted overtime using the CPI-U-RS. Poverty status is determined at the family level and then person weighted. After-Tax Money Income includes taxes and credits (calculated using TAXSIM). After-Tax Money Income + Noncash Benefits Excluding Home Equity also includes food stamps and CPS-imputed measures of housing and school lunch subsidies, and the fungible value of Medicaid and Medicare. This last series is only available starting with the 1980 CPS-ASEC/ADF. See Data Appendix for more details.
Notes: The rates are anchored at the official rate in 1980. Poverty status is determined at the family level and then person weighted. Consumption data are from the CE Survey and income data are from the CPS-ASEC/ADF. Official Income Poverty and After-Tax Money Income Poverty are as in Figure 1. CE Survey data are not available for the years 1974-1979 and 1982-1983. Also, consumption data are not available for the years 1984-1987 for measures that include health insurance.
Govt Redistribution with Taxes and Transfers

Govt taxes individuals based on income and consumption and provides transfers: \( z \) is pre-tax income, \( y = z - T(z) + B(z) \) is post-tax income.

1) If inequality in \( y \) is less than inequality in \( z \) then tax and transfer system is redistributive (or progressive).

2) If inequality in \( y \) is more than inequality in \( z \) then tax and transfer system is regressive.

   a) If \( y = z \cdot (1 - t) \) with constant \( t \), tax/transfer system is neutral.
   
   b) If \( y = z \cdot (1 - t) + G \) where \( G \) is a universal (lumpsum) allowance, then tax/transfer system is progressive. Actual tax/transfer systems in OECD countries look roughly like this.
   
   c) If \( y = z - T \) where \( T \) is a uniform tax (poll tax), then tax/transfer system is regressive.
Federal US Tax System: Overview

1) Individual income tax (on both labor+capital income) [progressive](40% of fed tax revenue)

2) Payroll taxes (on labor income) financing social security programs [about neutral] (40% of revenue)

3) Corporate income tax (on capital income) [progressive if incidence on capital income] (15% of revenue)

4) Estate taxes (on capital income) [very progressive] (2% of revenue)

5) Minor excise taxes (mostly labor income) [regressive] (3% of revenue)
State+Local Tax System: Overview

1) Individual+Corporate income taxes [progressive] (30% of state+local tax revenue)

2) Sales + Excise taxes (tax on consumption = income - savings) [about neutral] (30% of revenue)

3) Real estate property taxes (on capital income) [slightly progressive] (30% of revenue)

http://www.census.gov/govs/www/qtax.html
Types of Taxation

Taxation around the World

**FIGURE 18-1**

**U.S. Tax Revenue by Type of Tax (2008, % of total tax revenue)**

**Federal government**
- Income tax (43.7%)
- Payroll tax (37.8%)
- Corporate tax (11.3%)
- Excise tax (2.6%)
- Other (4.5%)

**State and local governments**
- Income tax (22.5%)
- Sales tax (15.8%)
- Property tax (20.9%)
- Federal grants (20.1%)
- Other (20.7%)

**Total government**
- Income tax (35.3%)
- Payroll tax (24.5%)
- Consumption taxes (15.7%)
- Corporate tax (6.5%)
- Property tax (10.1%)
- Other (7.9%)

**Tax Revenues by Type of Tax**
- Over 80% of the federal government’s tax revenue comes from individual income taxation (income and payroll taxes). For state and local governments, revenue is more evenly split among taxes on wealth (property), consumption, and individual income. In total, U.S. governments receive about three-fifths of their revenue from individual income taxes and payroll taxes.
Types of Taxation

Taxation around the World

**FIGURE 18-2**

*International Tax Revenues by Type of Tax (2003, % of total tax revenue)*

- **Norway**
  - Payroll: 20%
  - Individual income: 21%
  - Corporate income: 28%
  - Consumption: 26%
  - Property tax: 3%

- **Denmark**
  - Payroll: 2%
  - Other: 4%
  - Individual income: 50%
  - Consumption: 31%
  - Corporate income: 9%
  - Property tax: 4%

- **OECD Average**
  - Payroll: 23.2%
  - Individual income: 24.8%
  - Consumption: 34.4%
  - Property tax: 6.9%
  - Corporate income: 10.7%

*International Tax Revenues by Type of Tax* • Consumption taxes provide a greater portion of national government revenue in all OECD countries than in the United States.
US Tax System: Progressivity and Evolution

1) **Medium Term Changes:** Federal Tax Progressivity has declined since 1970 but govt redistribution remains substantial especially when including transfers (Medicaid, Social Security, UI, DI, various income support programs)

2) **Long Term Changes:** Before 1913, US taxes were primarily tariffs, excises, and real estate property taxes [slightly regressive], no transfer programs (and hence small govt)

http://www.treasury.gov/education/fact-sheets/taxes/ustax.shtml
2. Federal Average Tax Rates by Income Groups
(individual + corporate + payroll + estate taxes)

Source: Piketty and Saez JEP'07
Plan for Lectures on Taxation/Redistribution

1) Tax incidence (who bears the burden of taxation), efficiency costs of taxation, optimal commodity taxation

2) Taxation of labor income:

Optimal design of labor income taxation and means-tested transfers

Empirical analysis of tax and transfer programs on labor supply and earnings

3) Taxation of capital income (savings, wealth, and corporate profits)