Topic 1: Overview

Firouz Gahvari

University of Illinois at Urbana-Champaign

Government in our everyday lives

- **Record Keeping**
  - Birth, death, qualifications, all manners of transactions
- **Provider of services and benefits**
  - Army & National Defense
  - Public schools
  - Public utilities
  - Public roads
  - Garbage and sewage disposal
  - Source of employment for many
  - Provides benefits (unemployment, disability, social security, food stamp, housing, medical assistance etc)

Government in our everyday lives

- **Laws & Regulation**
    - Legal Structure
    - Safety regulations (food, drugs, work place)
    - Regulated industries
    - Housing regulations (zoning)
    - Environmental regulations
    - Diplomacy/restrictions to trade

Government in our everyday lives

- **Various forms of taxation**
  - Income taxes
  - Corporation taxes
  - Sales/excise/value added taxes
  - Capital gains taxes
  - Inheritance taxes
  - User fees
  - Environmental taxes
  - Payroll taxes (applies to wage income only)
  - Wealth taxes
  - Land taxes
  - Import duties/tariffs

Historical Development

- **1920's & earlier**: A limited role
- **1930's-1980's**: The heyday of the *welfare state*
- **1990 onwards**: Questioning the *welfare state*
  - Collapse of Communism
  - Abandoning *market socialism*
  - Deregulation in France and England
 - Lowering marginal tax rates on higher incomes

Historical Development

- **Over the course of 20th century**
  - The public sector has grown significantly over the past century
  - For a typical country the public sector was small at the start of the twentieth century
    - On the order of 5-10% of GDP
  - Expenditure then rose steadily for the next sixty years
  - There was a leveling-out of the growth toward the end of the century,
    - Typically starting in the mid 1970s

Historical Development

- **Statistics**: For more information go to **http://www.library.illinois.edu/bel/** and click on **WDI online**.
  - Sampled countries: Brazil, Canada, China, France, Italy, Japan, Mexico, Spain, Switzerland, Turkey, UK, US.
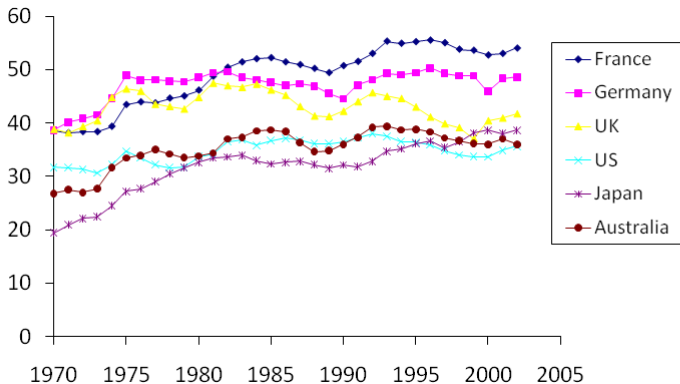
Historical Development

Figure: Total expenditure, 1870 to 1996 (% of GDP)
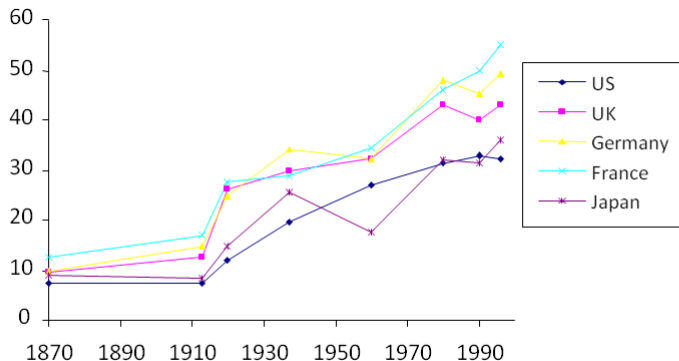
- Persistent difference in the level of expenditure among the countries
- The pattern of growth is similar across the countries
- In 1996 public spending was 32.4% of GDP in the US and 55% in France

Historical Development

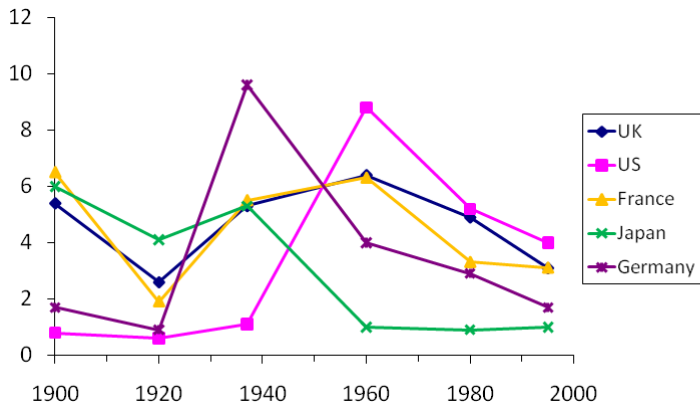Figure: Total expenditure, 1970 to 2002 (% GDP)

- ▶ For all six countries spending is higher in 2002 than in 1970
- ▶ For the UK and US the increase is small
- ▶ The cessation of growth is apparent
- ▶ There is evidence of convergence

Historical Development

Figure: Defense expenditure (% of GDP)

- ▶ Defense spending was one of the largest items in 1890
- ▶ Since then, depended on circumstances

Historical Development

Figure: Education expenditure (% of GDP)
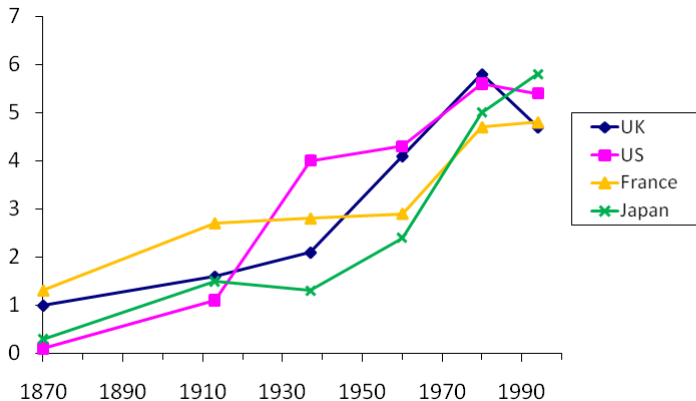
▶ Spending on education has grown sharply particularly since 1950

Historical Development

Figure: Health expenditure (% of GDP)
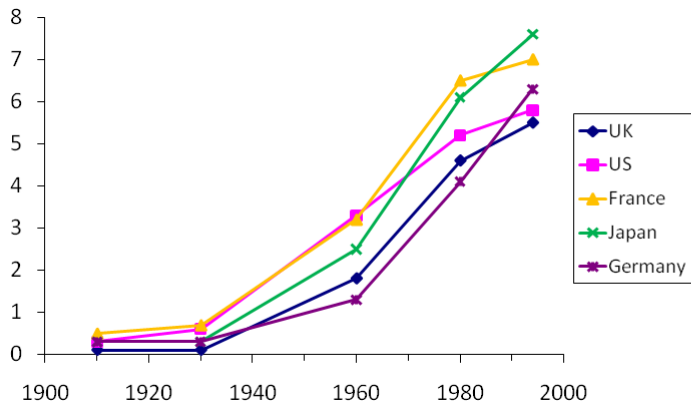
- Health expenditure has risen even more quickly
  - This applies even to the US which has a primarily private system

Historical Development

Figure: Pension expenditure (% of GDP)
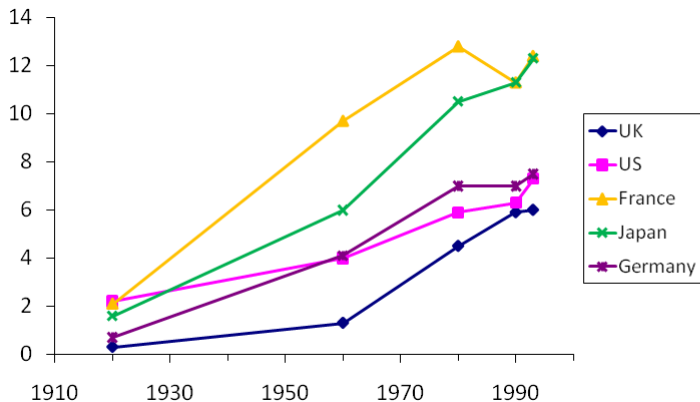
- ▶ The increase in pensions spending is important for policy
  - ▶ Many countries face a "pensions crisis' with unsustainable spending

Historical Development

Figure: Government expenditure in 1998 (% of GDP)
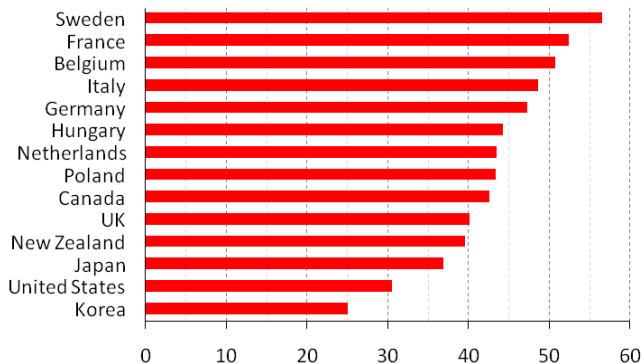
- ▶ Sweden has the highest value (56.6%) and Korea the lowest (25%)
- ▶ All are mixed economies with substantial public sectors
- ▶ These values emphasize the importance of public economics

Historical Development

Table: Expenses by country (% of GPD)

Country	1990	1992	1994	1996	1998	2000	2002	2004	2006
Brazil	34.2	28.5	32.9	...	24.5	...	...	...	...
Canada	25.3	26.8	24.9	22.4	20.9	19	18.6	18.4	17.9
China	...	...	...	...	...	...	10.7	11.1	...
France	...	...	...	47.6	46.1	44.8	46	45.8	45.6
Italy	...	...	...	47.1	41.5	39.2	39.3	38.7	40.8
Japan	14.6	...	...	...	...	...	...	...	...
Mexico	16.8	13.3	13.7	14.4	14	15.4	...	...	...
Spain	...	...	...	36.2	33.3	31.3	26.7	26.1	25.2
Switzerland	...	24.3	25.6	26.9	27.3	25.9	19.2	19.6	...
Turkey	...	...	...	...	...	...	...	...	22.2
UK	...	...	...	...	37.1	36.4	37.9	39.7	41.2
US	...	...	...	...	...	...	20.6	21	21.3

Revenue

Figure: Tax revenues, 1965 to 2000 (% of GDP)
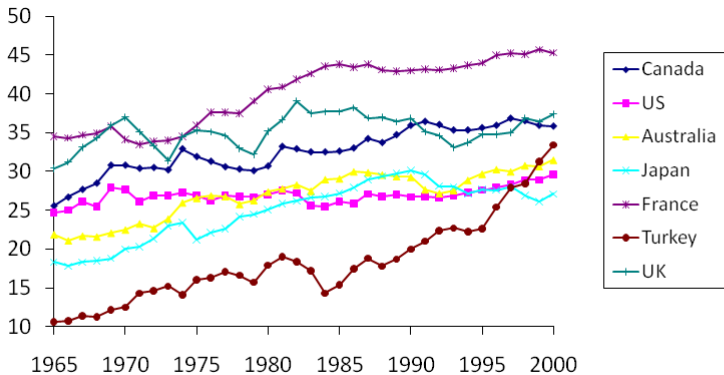
- ▶ This mirrors the expenditure data
- ▶ All countries have had some growth and there is evidence of convergence
- ▶ The range in 2000 lies between Japan (27%) and France (45%)

Revenue

Table: Revenue, excluding grants (% of GPD)

Country	1990	1992	1994	1996	1998	2000	2002	2004	2006
Brazil	22.8	23	26.9	...	22.6	...	...	...	...
Canada	21.2	21.4	20.4	20.7	21.4	20.9	19.8	19.7	19.5
China	6.3	4.2	6.2	5.2	5.9	7.1	8.7	9.5	...
France	...	...	...	43.3	43	42.8	42.4	42.1	43
Italy	...	...	...	40.5	38.6	37.2	36.2	35.7	37.2
Japan	14.2	20.8	...	...	...	...	...	...	...
Mexico	15.3	15.4	14.9	15.2	13	14.7	...	...	...
Spain	...	...	...	32.3	30.8	31.1	27.4	25.7	27.2
Switzerland	...	20.7	22.1	23.2	24.1	24.7	19.4	18.2	...
Turkey	...	...	...	...	...	...	...	...	25
UK	...	...	...	...	37.2	37.9	36.1	36.3	38.8
US	...	...	...	...	...	...	18.1	17.5	19.3

Revenue

Table: Tax revenue (% of GPD)

Country	1990	1992	1994	1996	1998	2000	2002	2004	2006
Brazil	12	9.7	11.9	...	11.3	...	...	...	...
Canada	15	14.5	13.9	14.5	15.1	15	13.8	14.1	14.1
China	4	3.3	5.6	4.7	5.7	6.8	8.5	8.9	...
France	...	...	...	19.9	22.6	23.2	22.4	22.2	22.7
Italy	...	...	...	23.5	24.1	23.2	22.1	21.6	22.9
Japan	13.4	12.1	...	...	...	...	...	...	...
Mexico	11.8	11.6	10.6	10.8	10.2	11.7	...	...	...
Spain	...	...	...	16.1	15.6	16.2	12.8	11.8	12.9
Switzerland	8.9	8.8	8.7	9.2	10.3	11.3	10	10.1	...
Turkey	...	...	...	...	...	...	...	...	19.7
UK	...	...	...	...	28.3	29	27.4	27.2	28.8
US	...	...	...	...	...	...	10.6	10.1	11.9

Revenue

Table: Taxes On Goods and Services (% of Revenue)

Country	1990	1992	1994	1996	1998	2000	2002	2004	2006
Brazil	24.2	18	24.4	...	21.8	...	...	...	...
Canada	16.7	17.3	17.7	17.5	16.8	16.3	17.9	17.6	15.6
China	12.5	10.3	60.2	58.5	70.3	65.1	72.9	79.2	...
France	...	...	...	25.5	25.4	24.6	24.6	24.6	23.6
Italy	...	...	...	19.4	23.2	22.9	22.4	22.2	22.2
Japan	16.9	13.6	...	...	...	...	...	...	...
Mexico	56	49.6	47.9	56.9	58.8	62.1	...	...	...
Spain	...	...	...	21.6	24	25.1	18.3	17.8	...
Switzerland	...	19.4	18.4	20.4	20.2	21.6	30.3	32.6	...
Turkey	...	...	...	...	...	...	...	...	48.5
UK	...	...	...	...	30.6	30.2	31.8	32.6	...
US	...	...	...	...	...	...	3.6	3.5	2.8

Revenue

Table: Taxes On Income, Profits and Capital Gains (% of Revenue)

Country	1990	1992	1994	1996	1998	2000	2002	2004	2006
Brazil	20.4	16.9	13.5	...	20.8	...	...	...	...
Canada	51	47.6	48	50.9	52.5	54.3	50.2	52.3	54.9
China	22.1	29	6.9	10.4	6.7	8.1	22.5	21.6	...
France	...	...	...	17.2	23.8	25.8	24.4	24.1	25
Italy	...	...	...	33.6	33.3	34.8	33.6	32.1	34.2
Japan	69	36.4	...	...	...	...	...	...	...
Mexico	30.6	33.4	35	26.6	36.3	34.1	...	...	...
Spain	...	...	...	27.8	26.3	26.7	28.3	26.5	...
Switzerland	...	14.7	13.3	12.2	13.7	14.4	16.3	17.2	...
Turkey	...	...	...	...	...	...	...	...	21.9
UK	...	...	...	...	39	38.8	37.3	35.8	38.6
US	...	...	...	...	...	...	52.3	51.7	56.7

Revenue

Table: Taxes On International Trade (% of Revenue)

Country	1990	1992	1994	1996	1998	2000	2002	2004	2006
Brazil	2.1	1.8	1.9	...	3	...	...	...	...
Canada	2.8	2.5	2.3	1.5	1.2	1.3	1.4	1.2	1.3
China	9.8	13	7.7	7	5.6	9.8	-3.9	-11.9	...
France	...	...	...	0	0	0	0	0	0
Italy	...	...	...	...	...	...	...	...	...
Japan	1.3	1.1	...	...	...	...	...	...	...
Mexico	6.2	8.1	6	3.9	4.3	4.1	...	...	...
Spain	...	...	...	0	...	...	...	0	...
Switzerland	...	1.1	1	0.7	0.8	0.9	1.2	1.3	...
Turkey	...	...	...	...	...	...	...	...	1.1
UK	...	...	...	...	...	...	...	...	...
US	...	...	...	...	...	...	1.1	1.1	1.1

Revenue

Figure: Tax revenue for category of taxation
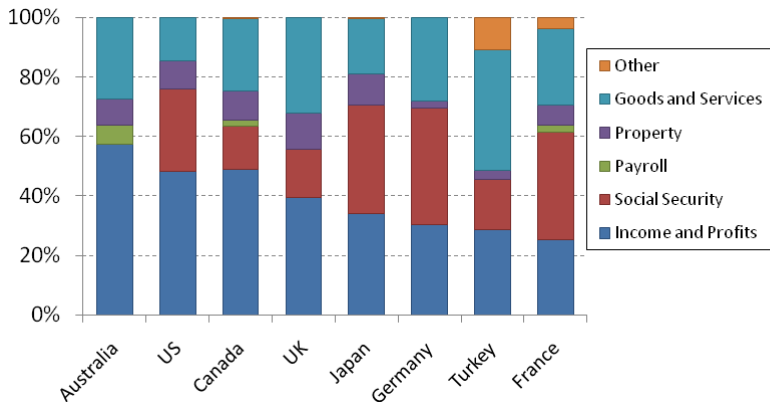
▶ Income taxes raise the most revenue in some countries, social security taxes in others

▶ Taxes on goods are important in EU countries but much less so in the US
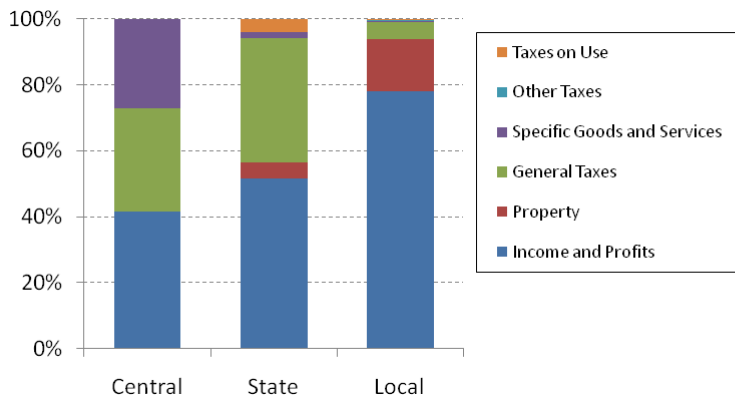
Revenue

Figure: Tax shares at each level of government, United States, 2000
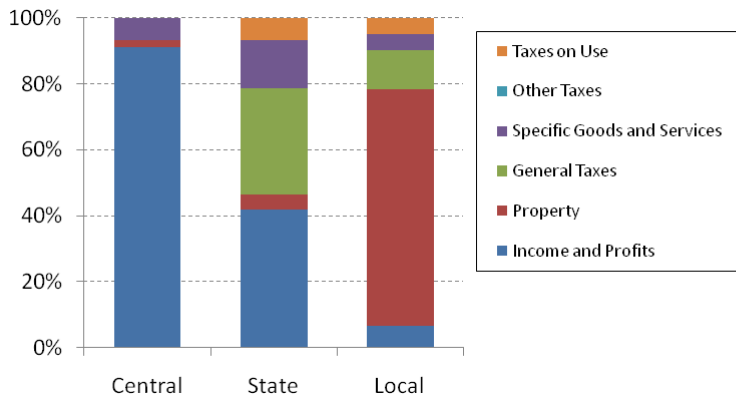
- ▶ Central government in the US relies on income taxes
- ▶ State government uses income and general taxes
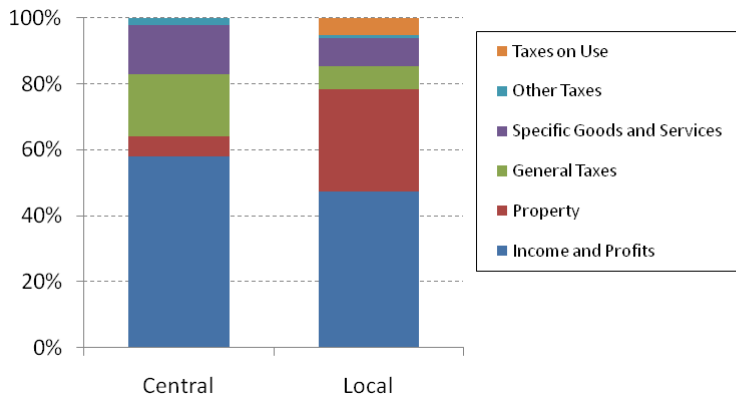- ▶ Local government raises most revenue from property

Revenue

Figure: Tax shares at each level of government, Germany, 2000

- Income, general and specific taxes are all important for central government
- The importance of income taxes rises from central, to state, to local
- Income taxes are more important than property taxes at the local level

Revenue

Figure: Tax shares at each level of government, Japan, 2000

- ▶ Central government obtains most revenue from income tax
- ▶ Local government employs both income and property taxes
- ▶ Income taxes are equally important for both levels of government

Revenue

Figure: Tax shares at each level of government, United Kingdom, 2000
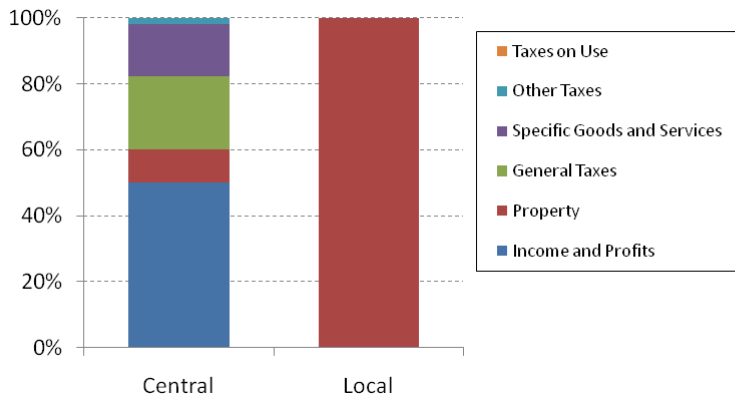
- Almost all revenue at the local level is derived from property taxes
- Income taxation is the largest source for central government
- The patterns in Japan and the UK are very different

Subject matter of public economics

1. **What is the government**?
   - ▸ Political theories.
   - ▸ Political economy as a meand of explaining government policies.

2. **What is the proper role and justification for government intervention**?
   - ▸ Some aspects of this are studied in:

3. **Theory of government expenditures**
   - ▸ Health, education, public goods/externalities

4. **Taxation**
   - ▸ The main source financing expenditures
   - ▸ Links to expenditure side through the government's budget constraint:

$$G = T + \Delta B + \Delta M$$

Methods

- Public economics uses models to investigate policy. Why?
    1. The possibilities for experimentation are limited
    2. Past experience cannot always be relied upon
- Models can take two forms:
    - **Partial equilibrium** models focus only on one or two markets taking behavior elsewhere in the economy as given
    - **General equilibrium** models describe a complete economic system with prices equilibrating supply and demand on all markets simultaneously

Methods

- Actions of economic agents:
  - Consumers maximize private welfare
  - Firms maximize profits
- The government chooses policy instruments
- Reactions to a policy change:
  - The reactions of economic agents are predicted through the solutions to the optimizations
  - The independent decision-making of agents distinguishes economic models
  - Agents do not respond mechanically

Methods

- Once a model is constructed its implications are derived:
  - Logical reasoning is used to derive formally correct conclusions
  - These conclusions are interpreted in terms of the initial policy question
- The institutional setting is invariably the *mixed economy*:
  - Individual decisions are respected but the government intervenes
  - A range of objectives can be assigned to the government

Analyzing Policy

- The effect of a policy is determined by contrasting the equilibrium **with** the policy to the equilibrium **without** the policy
- Policy can be analyzed from a **positive** or a **normative** perspective
- **Positive analysis** is about explaining why there is a public sector, how government policies are chosen and how these policies affect the economy
  - For example: Analyzing the effect of a corporate tax on inward investment

- **Normative analysis** investigates what the best policy is, and aims to provide a guide to good government
  - For example: Assessment of whether the level of pensions should be indexed to average wages
- Normative analysis assumes the government has an objective and chooses its actions to best achieve the objective
- Positive and normative analysis are not distinct
  - To evaluate a policy (normative) its effect must be determined (positive)

Analyzing Policy

- The government's objective is often taken to be the aggregate level of welfare
- This raises questions about welfare measurement
- Any aggregate measure assumes some degree of comparability of individual utility
- It is possible to proceed assuming utility is comparable and to derive general principles that apply for any degree of comparability

Taxation in General

- The major revenue source in the government's budget constraint.
- Why tax at all?
  - Finance public goods
  - Finance welfare programs
  - Redistribution
- *How to evaluate a tax system?*
  - Administrative costs
  - Equity
  - Efficiency
- *Broad subjects in taxation:*
  - Incentive effects
  - Incidence
  - Excess Burden/optimal taxation

Tax Structure in LDCs

Some statistics on tax structures in LDCs in 2008:

- Tax revenues as a % of GDP for 101 countries:
  - Lowest three:
    - Kuwait at 0.89%
    - Afghanistan at 5.78%
    - Iran at 7.56%
  - Six countries < 10%: most of them very low per capita GNP.
  - Thirteen countries > 25%: generally high per capita GNP.

Tax Structure in LDCs

- There appears to be a positive relationship between the share of tax revenue (TR) in GDP and per capita GDP.
- Other features influencing TR/GDP:
  - Modernization and openness of the economy
  - Share of mining in GDP
  - Literacy rate
  - Export ratio excluding mineral exports
  - Urbanization

Tax Structure in LDCs

- Income taxes
  - Marginal Tax Rate
    - Average is 29.1% (average of 92 countries)
    - Nine countries with 0% as highest marginal tax rate
    - Twenty seven countries with 40% or greater highest marginal tax rate
  - Income Tax Revenue As % of Total Tax Revenue:
    - Average is 23.59% (average of 106 countries)
    - Australia is highest at 66.67%
    - Kuwait is lowest at 0.578%

Tax Structure in LDCs

- Tax avoidance
- High exemptions: (marginal tax rates at high incomes are the same)
- Agriculture plays a greater role in LDCs which cannot be taxed as effectively
- Corporate income taxes are more important than individual income taxes (opposite from industrialized countries).

Tax Structure in LDCs

- Domestic taxes for goods and services
  - Average is 31.61% of revenue
  - Variance is very high though
  - Consists of some combination of:
    - Consumption tax or value-added tax (with a lot of exemptions)
    - Excise taxes (mainly on petroleum, alcohol and tobacco)

Tax Structure in LDCs

- Foreign trade taxes
    - Average is 7.61% of revenue
    - Consists mainly of import duties
    - Determinants of import duties are:
        - Positive relationship with share of import in GDP
        - Negative relationship with per-capita income and domestic taxes/GDP
    - Export taxes are not significant.
- Other taxes
    - Social security taxes
    - Wealth taxes