Public Economics

- **Introduction, basic concepts and definitions**
  - Competitive model
  - Exchange Economy
  - Edgeworth box
  - Excess demand. Walras Law
  - Arrow-Debreu economy
  - production + exchange model
  - Efficiency of Competition
  - Single Consumer (Robinson Crusoe Economy)
  - Special Case: Constant Returns to Scale
  - Pareto-Efficiency
  - Two Theorems of Welfare Economics with proofs
  - Lump-Sum Taxation
  - History of Government spending
- **Theories of Public Sector**
  - Public Sector Growth Models
  - The Development Model
  - Wagner' s Law
  - Baumol's Law
  - Political Model
  - Provision of public goods
  - Private provision of public goods
  - Allocation through Voting
  - Personalized Prices and Lindahl mechanism
  - Samuelson Rule: Efficient Provision of Public Good
- **Government Failures**
  - Bureaucracy
  - Budget-setting model
  - Information Asymmetry
- **Market Failures**
- **Externalities. Inefficiencies. Solutions**
  - Examples (Traffic Jam, Pecuniary externalities, etc.)
  - Internalization
- **Poverty & Poverty Measurements:**
  - Atkinson measure of inequality
  - Inequality Measures
  - Gini Measure of Inequality
  - Foster Greer Thorbeck Decomposable Poverty Measure
  - Additively decomposable Poverty Measure
  - Engel method for determining the adult equivalence scales
- **Taxation**
  - Deadweight Loss
  - Lump Sum and Commodity tax
  - Pigou Dalton principle
  - Coase Theorem
  - Commodity Taxation: Equity and Reform:
  - Taxation reform decision:
  - Tax Evasion
  - Income tax and labour supply
  - Ramsey Rule
- **Samples** of Exam style questions and **answers** (with graphs and formulas wherever applicable). Approx 30. Most questions include alternative answers.

PUBLIC ECONOMICS

Public economics analyses government economic **intervention**, the use of taxes, expenditures, regulations. It studies ***how*** decisions are made. The **processes** through which government decisions are reached. It analyses *what* **decisions** should be made. The decisions that would be in the best interest of society.

Methods

Methods – Models.
Partial equilibrium models focus only on one or two markets taking behaviour elsewhere in the economy as given
General equilibrium models describe a complete economic system with prices equilibrating supply and demand on all markets simultaneously

- 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
- 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

Analysing Policy

- The effect of a policy is determined by contrasting the equilibrium with the policy to equilibrium without
- Policy can be analysed 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** *(i.e. analysing 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 (i.e. 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
  - To **evaluate** a policy (normative) its effect must be determined (positive)
- The government's objective is often taken to be the aggregate level of welfare
- Any aggregate welfare 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

Government Failures

Limited Information: Consequences of many actions are complicated and difficult to foresee; limited information may prevent the govt. from identifying the beneficiaries and non-beneficiaries of a particular policy.
Limited control over private market responses: Govt. has only limited control over the consequences of its actions.
Limited Control over Bureaucracy: Federal and state parliaments design legislation, but **delegate** implementation to govt. agencies. Problems arise because bureaucrats lack appropriate incentives to carry out the will of the legislatures.
Corruption is another significant reason for both market and govt. failures.

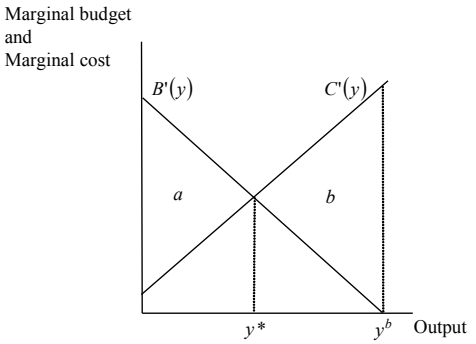
Balance between the Public and Private Sectors

Limitation imposed by political processes: Govt. represntatives have incentives to act for the benefit of special interest groups to raise funds to finance extensive campaigns.
Govt. should direct its energies only at those areas in which market failures are most significant, and where govt. intervention can make a significant difference.
Controversy remains on how limited or active the govt. should be.

Excessive Government

Bureaucracy

Bureaucrats are motivated by maximization of the bureau size
y: **output of the bureau** as observed by the government
$B(y)$: **size of the budget**, the bureau is given
$C(y)$: **cost of producing output** (govt. doesn't know this cost structure - only the bureaucrat does)
Full information: max $B(y) - C(y)$
This defines y^* by $B'(y^*) = C'(y^*)$
Bureaucrat max: $B(y)$ subject to $B(y) = C(y)$
output $y = y^b$
The pursuit of personal objectives by bureaucrats ⇒ an excessively large bureau



⇒

Budget-setting model

Analyzes the determination of budget for government departments & how it evolves over time.
Budget for year t: B_t
Budget claim for $t + 1$: $B^c_{t+1} = [1+\alpha]B_t, \alpha > 0$
Bids are proportionately reduced to reach the final allocation:

$$B_{t+1} = [1-\gamma]B^c_{t+1} = [1-\gamma][1+\alpha]B_t$$

If $\alpha > \gamma$, then the budget will grow over time
The process is entirely independent of what is good for the economy

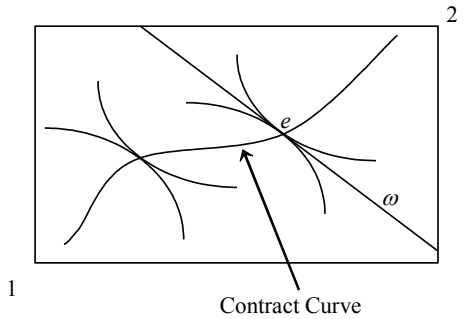
The public sector can award itself a **monopoly** in the supply of goods & services.
A government monopoly **may not maximize profit**.
Instead the government may exploit monopoly to **oversupply output**
(alternative view of the bureaucracy model)

Market capture (The specialists can be said to capture the market)
Nature of goods supplied by the public sector is complex in nature and not fully understood by the consumers. Demand is not expressed through a market, but delegated to specialists (who set the level of supply).
Trade-off between income and power. **Outcome is not efficient**

Govt officials seeking personal gain ⇒ ***Corruption*** ⇒↓ economic growth & discourages entrepreneurship

State the two theorems of welfare economics, and explain the assumptions that are required for the two theorems to hold:

First Theorem: The allocation of commodities at a competitive equilibrium is Pareto efficient. Efficiency is given by a common point of tangency that results in consumer choice that lead to equilibrium levels of demand. In the graph, this is at point e. Given it is a point of tangency, it is therefore pareto efficient. For the Edgeworth box, this demonstrates that a competitive equilibrium is Pareto-efficient.

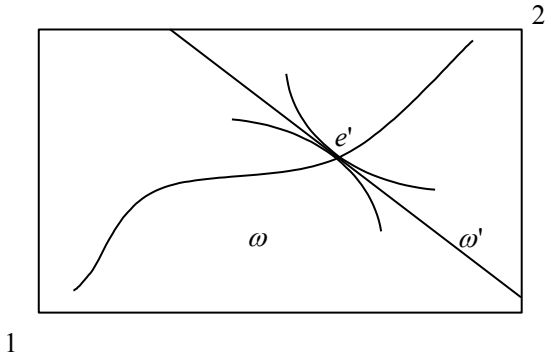


The Second theorem asks if a GIVEN Pareto-efficient allocation can be made into a competitive equilibrium through the process of decentralisation. Decentralisation is possible if the consumer's **indifference curves are convex**.

We can prove the second theorem by assuming that the competitive equilibrium is not pareto efficient and then deriving a contradiction. Can a competitive economy be constructed that has a selected pareto efficient allocation as its competitive equilibrium. In the Edgeworth box this involves being able to choose any point on the contract curve and turning it into a competitive equilibrium.

This is possible in the exchange economy if the households indifference curves are convex. The common tangent to the indifference curves at the Pareto-efficient allocation provides the budget constraint that each consumer must face if they are to afford the chosen point. By choosing a point on this budget line at the initial endowment point you are constructing a competitive economy to obtain a selected Pareto efficient allocation and therefore decentralising.

In the graph, you are selecting w' and gaining a Pareto efficient allocation at e'. If endowments of households are initially at w, and equilibrium e' is to be decentralised, then it is necessary to redistribute the initial endowments of the consumers in order to begin from w'. This happens through a Lump Sum tax.



The lump sum taxation example: You are transferring a quantity of x1 of good 1 to consumer 2.