



TRANSPORT ECONOMICS

**TRANS-ASIAN NETWORK
COURSE
PRAMOD UNIYAL
DEPUTY DIRECTOR GENERAL
RAILWAY STAFF COLLEGE
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ECONOMICS AND TRANSPORT

- Scarce Resources
- Basic Question What How and for Whom
- Economic Growth: Gross Domestic Product (GDP) and Net Economic Welfare (NEW)



Contd.

- Accessibility Paradox
- Land Use
- Infrastructure Provision the Chicken or Egg Problem

TRANSPORT AND ECONOMIC PLANNING



- Rural Development
- Urban Development
- Industrialisation



Contd.

- Catalyst for economic growth
- Development of Markets
- Integration with Global Economy



ELEMENTS OF TRANSPORT ECONOMICS DEMAND

- What is transport?
- Characteristics
 - i) derived
 - ii) perishability
 - iii) peaking characteristics
- Variation of demand with price and income
the concept of elasticity



Contd.

- PASSENGER
- Characterised by trip purpose, length of trip, and whether in urban area or intercity
- Separate models available for urban and non-urban



Contd.

- FREIGHT
- Determined by the need to treat it as an input into a production process
 - i) for individual firms use of optimisation of costs subject to resource constraints
 - ii) for aggregate use of flow from surplus to deficit areas
 - iii) for macroeconomic analysis use of ratios determined from input output matrix for production of goods and services in an economy



FORECASTING

- Ability to understand the socio economic trends
- Define logically the exogenous factors constituting the demand model
- Specification of the functional form
- Short term easier
- Long term determined by the validity of the models as both ability to pay and the wisdom of paying transportation costs may undergo a radical change



TRANSPORT COSTS

- A functional relation between the transport output and the consumption of resources measured in financial terms
- Normally classified in terms of costs of
 - i) operators
 - ii) users
 - iii) social



OPERATORS

- ALLOCATION
 - joint/common
- INDIVISIBILITIES
 - long/short term
- ECONOMIES



USERS

- **GENERALISED COST**

- $C = F + vT$, where F is the monetary value and T , the time spent converted to monetary value by the factor v , the value of time



SOCIAL COSTS

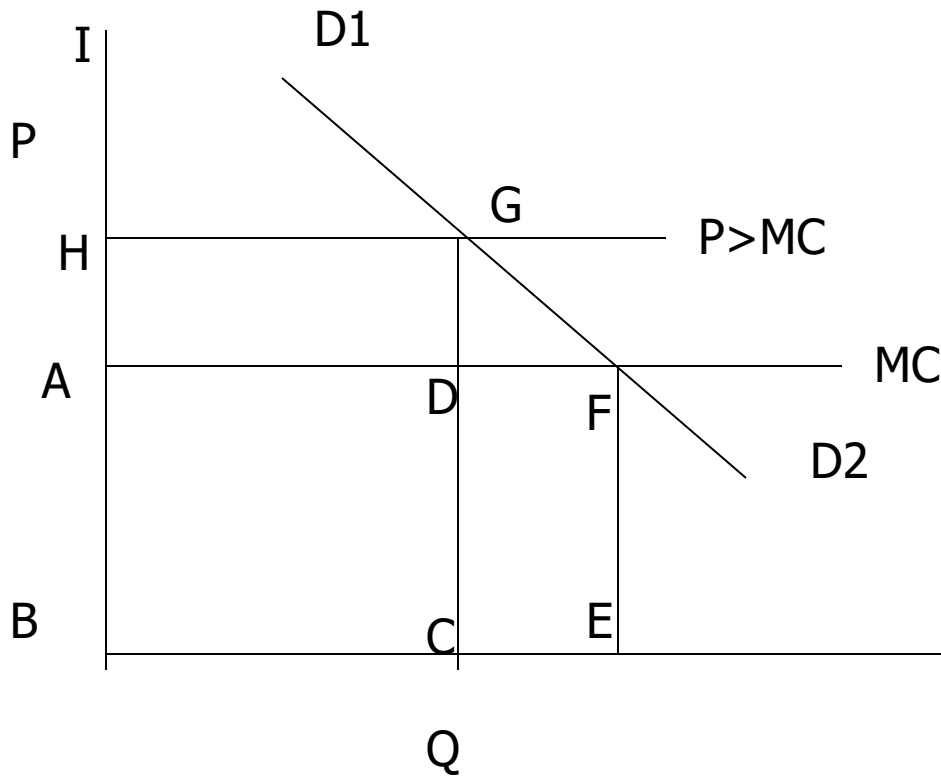
- **RESOURCE COST**
- opportunity costs
- allocative efficiency
- **EXTERNAL COSTS**
- congestion
- pollution
- safety
-



PRICING

- Outlines significant characteristics of the industry as
- affects volumes and therefore revenue, key decision
- factors in a free market economy
- Efficiency Pricing

DEADWEIGHT LOSS

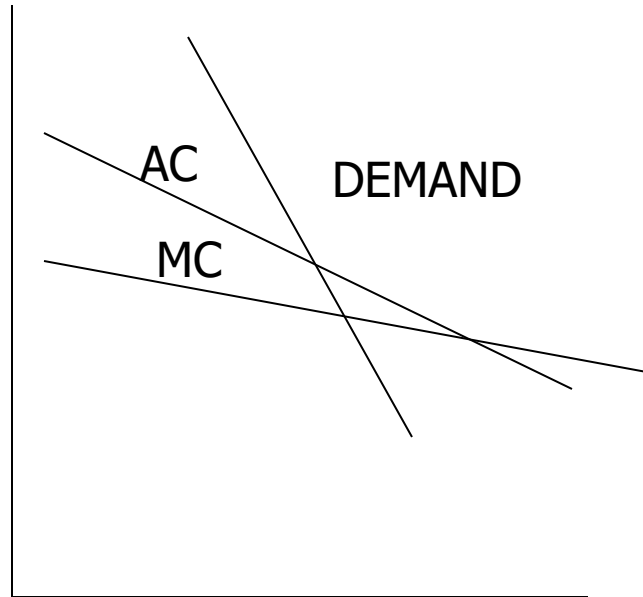




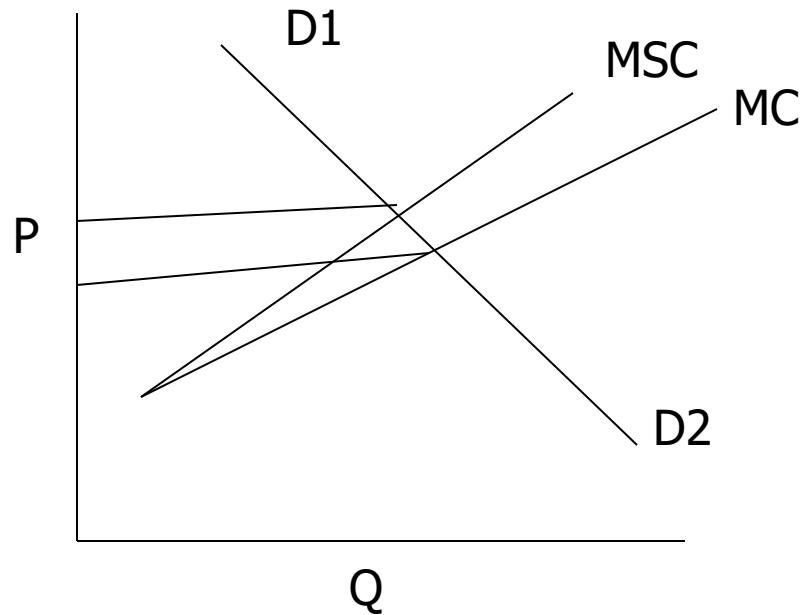
PROBLEMS IN SETTING EFFICIENT PRICES

- Natural monopoly economies of scale
- Marginal cost < average cost
- Externalities ---- concept of marginal social cost
- Considerations of equity --- private versus public transport
- Congestion pricing

INCREASING RETURNS TO SCALE



MARGINAL SOCIAL COST PRICING



DEVIATIONS FROM EFFICIENT PRICING



- Losses leading to subsidy
- Second best pricing----rationale
- Two part tariffs, a common tariff plus a variable part---- problems of discrimination
- Ramsey pricing, markup over the marginal cost
- Inversely proportional to the price elasticity
- Of the market----problems of segmentation and equity



Contd.

- Revenue Management
- Segmentation



TRANSPORT MARKETS

- TYPES
 - i) Competitive
 - ii) Contestable
 - iii) Monopoly
 - iv) Duopoly
 - V) Oligopoly

- IMPERFECTIONS

- ASYMMETRY OF INFORMATION



REGULATION

- Intervention by government in imperfect market to prevent exploitation as well as bring about allocative efficiency
- “Rolling back of the frontiers of the State”-----Margaret Thatcher
- Deregulation and restructuring of the transport Industry



REGULATION OF PRICES

- Ensure level playing field---destructive pricing
- Fixed rate of return pricing----problems of padded up costs capture of the regulator and consequent inefficiency
- Distance equalization of prices----inefficient in both the short run and long run response of the industry
 - Deregulation of prices and entry but regulation of quality



ALLOCATIVE EFFICIENCY

- Optimal use of resources
- Question of Public good
- Question of payment of user charges
- Question of marginal social cost versus marginal cost
- Question of subsidy----internal versus external
- Question of modal split



FINANCIAL VIABILITY

- Strategies for revenue generation
- Strategies for expenditure control
- Strategies for investment
- Tariff policy
- Capital output ratio

IMPORTANCE OF TRANSPORT ECONOMICS



- Importance for Regional Economic Development and Co-operation
 - i) enlarging markets
 - ii) economies of scale
 - iii) optimal utilisation of geographical location in the supply chain of international trade



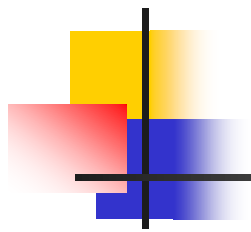
Contd.

- Identification of Basic Demand
- Value Addition
- Infrastructure for meeting it



Bibliography

- Economics Paul A Samuelson
- Transport Economics Kenneth Button
- Applied Transport Economics Stuart Cole
- The End of Poverty Jeffrey Sachs



THANK YOU