SA422: Topic 2
Housing Demand, Supply and Price

• Determinants of Demand
• How responsive is Demand to changes in price? in income? in prices of other goods? tastes?
• Demographics and demand
• Demand and Need

Determinants of Demand ($D_H$)
Income ($Y$)
PRICE of HOUSING RELATIVE TO PRICE of OTHER GOODS ($PH/P_{OTHERGOODS}$)
Tastes ($T$): and
Number of Households in Market ($N$)
Changes in $P_H$ → move along curve
CHANGES in ALL OTHER VARIABLES → Shifts Demand Curve

Elasticity

• RESPONSIVENESS of ONE VARIABLE TO ANOTHER
• PRICE ELASTICITY of DEMAND
  Responsiveness of $Q_D$ with respect to $P$ of good i.e. SLOPE of DEMAND CURVE
• MEASURE in RELATIVE TERMS i.e.
  \[ \eta = \frac{\% \text{ change in } Q}{\% \text{ change in } P} \]
  \[ \Delta Q \]
  \[ \Delta P \]
  
  • Often use 1% change in $P$ as base

Example if $p_x \uparrow$ by 1%
$q_x \downarrow$ by 2%
$\eta_D = 2$ – elastic

if $p_y \uparrow$ by 1%
$q_y \downarrow$ by 0.5%
$\eta_D = 0.5$ – inelastic

if $p_z \uparrow$ by 1%
$q_z \downarrow$ by 1%
$\eta_D = 1$ unit elasticity

If demand price is elastic
if price ↑ total expenditure ↓

If inelastic total expenditure ↑

If unit elasticity total expenditure constant
INCOME

- HOUSING A 'NORMAL' GOOD
  \[ \eta_Y = \frac{\% \text{ change in } (\Delta) \text{ in } Q}{\% \text{ change in } (\Delta) \text{ in } Y} \]
- \( \eta_Y > 1 \Rightarrow \) increasing \% of \( Y \) as \( Y \uparrow \)
- PROBLEMS of MEASUREMENT
  SLOW ADJUSTMENT
  RATIONING/IMPERFECT FINANCE MARKETS
  DIFFERENT ATTRIBUTES
  RENTING/BUYING
  NECESSITIES/"LUXURY" "SUPERIOR"

- UK evidence
  \( \eta_Y < 1 \text{ TENANTS} \)
  \( \eta_Y < 1 \text{ o/o but } = 1 \text{ in L/R} \)
- International evidence
  \( \eta_Y = 1 \)
- Attributes:
  Basic structure \(< 1 \)
  Space \( \geq 1 \)
- IMPLICATIONS

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![Graphs](image)
RELATIVE PRICES

OWN PRICE
• \( \eta_D < 1 \)
i.e. slope of demand curve relatively steep
• If \( P \uparrow \) expenditure on housing \( \uparrow \)
• ADJUSTMENT/INFORMATION/RATIONING
/FINANCE MARKET
• HEDONIC PRICES
  implicit prices of attributes
  \[
  \frac{\mu_x}{\mu_y} = \frac{\mu_y}{\mu_z} = \frac{\mu_z}{\mu_x}
  \]

EVIDENCE
NECESSITIES
LUXURIES
CAPACITY TO ADJUST
SUPPLY GAPS
CROSS ELASTICITY OF DEMAND
CHANGES in PRICE of OTHER GOODS
\[
\eta_c = \frac{\% \text{ change in } Q}{\% \text{ change in } P}
\]
\( \eta_c \) positive – substitutes
\( \eta_c \) negative - complements

TASTES/PREFERENCES

• HOUSEHOLD TYPE \( \rightarrow \)
  DIFFERENT TYPES OF DWELLING/ DIFFERENT QUANTITIES
• RELATIONSHIP TO INCOME
• TENURE CHOICE

POPULATION/ NUMBER OF HOUSEHOLDS

• Demographics
• Social factors
• Economic factors
• Housing market factors
• Policy factors
  TRENDs \( \rightarrow \) smaller households
  MIGRATION
  DEFINITION of HOUSEHOLDS
  (sharing/concealed)

HOUSING NEED

• DEMAND – what
  prepared to pay for
  given \( Y, P_H/P_{\text{OTHER}}, T, N \)
• NEED – social concept
  3rd PARTY (GOVERNMENT/DECISION SOCIETY)
• UNLESS NEED backed by MONEY/RESOURCES
  just ASPIRATION/RHETORIC
SUPPLY

- Measured in NUMBERS terms
  \[ S_t = S_{t-1} - D + C_0 + C_1 \]
  
  \( S_t \) = stock in time \( t \)
  
  \( S_{t-1} \) = stock in time \( t -1 \)
  
  \( D_t \) = Demolitions
  
  \( C_0 \) = Conversions
  
  \( C_1 \) = Completions

TOTAL SUPPLY

- Measured in VALUE terms
  \[ K_t = K_{t-1} - D_p + I_t \]
  
  \( K_t \) = Capital stock
  
  \( D_p \) = depreciation
  
  \( I_t \) = Investment
  
  - new
  
  - existing stock

Price Elasticity of Supply

\[ \eta_s = \frac{\% \text{ change} (\Delta) \text{ in } Q}{\% \text{ change} (\Delta) \text{ in } P} \]

Inherently inelastic in short run because new building/investment very small proportion of total

Depends on flexibility of the stock and construction industry

HOUSE PRICE DETERMINATION

SHORT RUN

- DEMAND more ELASTIC THAN SUPPLY
  
  ↓
  
- PRICE ADJUSTMENT rather than QUANTITY ADJUSTMENT
  
- VOLATILITY

![Supplement Schedule for Learning](image1.png)

![Price Elasticity of Supply](image2.png)

![House Price Determination](image3.png)
ROLE of EXPECTATIONS

- \( D = f(P_{t-1}, \hat{P}_t) \)
- Overshooting/Bubbles
- Asymmetry in Response
  numbers of transactions
  numbers on market