When will new building occur?

- **PRIVATE** - PROFITABILITY (Rate of Return)
  - CONSTRAINTS
    - If $P_H \uparrow \rightarrow S_H \uparrow$ but inelastic

- **SOCIAL** -
  - In principle Social Cost Benefit but
  - FUNDING CONSTRAINTS
  - LAND ALLOCATION

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**Firm’s Decision to Provide Housing**

Objective: MAX Profit

Requires: $MR = MC$

In Perfect Competition:

- $P = MR$
- So produce quantity where
- $P = MC$

How Much Profit?: Depends on entry and exit

Relationship between

- $AC$ and $MC$ ($MC$ cuts $AC$ @ minimum)

Optimal position:

- $AC = MC$ @ min $AC = normal Profit$
How Many Firms?

If $P = MC > \min AC$
higher $Q$ per firm than optimal and
excess profit $\Rightarrow$
more firms

If $P = MC < \min AC$
lower $Q$ per firm than optimal
losses $\Rightarrow$
fewer firms
Short-Term v. Long Term: Definitions

Short term – some factors cannot be adjusted \( AVC < AC \)
Long term – full adjustment
Equilibrium \( P = \frac{L}{RMC} = \min \frac{L}{RAC} \)
Long run: Not directly related to time but Housing particularly slow to adjust

Elasticity of Supply of New Dwellings

- Short-term relatively inelastic
- Problems of Adjustment
- Capacity to Replicate – heterogeneity of land
- Supply of Land

The Relationship between Housing and Land Markets

Demand for land derived from Demand for Housing
- Residual valuation
Revenue – Costs excluding land
= amount prepared to pay for Land
If can’t adjust quantity of Land
\( P_H \uparrow \Rightarrow P_L \uparrow \)
\( \Rightarrow P_{NEW \, HOUSES} \uparrow \)
Responsiveness of Land Supply

- Total land fixed quantity
- Land to a particular use
  - goes to highest bidder
  - cost of transfer
- Substitute building for land if Price of Land $\uparrow \Rightarrow$ higher density

Why is Land Supply price inelastic even in the long-term?

- Resource costs of transfer from other uses
- Infrastructure costs
- Preparation costs
- Risk and uncertainty
- Government intervention
Evidence on Long-run Costs of Housing

• Even in market based systems supply of land relatively inelastic – so costs of land ↑
• Relative productivity of construction industry – labour costs ↑
• Potential for technological change – modular construction etc.
• Quality of product ↑

Implications for the Price of Housing

• Demand elasticities – income elasticities offset by price elasticities
• Space versus numbers of units?
• Supply relatively inelastic
• Price of land ↑
• Increased densities of development

Figure 3: Price Determination in the Long Run
Current Policy

- Expand new building to 240,000 p.a. based on requirements or economic pressures?
- Shift the supply curve or make supply more elastic?
- Social sector based on estimates of need – therefore requiring subsidy
- The new build premium – and the relationship between new building and the existing stock