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Chapter 7.3.1

# Preventing adverse selection

# Uninformed investors making losses

- Informed investors will have high demand for securities that are underpriced and no demand for those that are overpriced
- Uninformed investors will receive few securities that are underpriced and a large allocation of those that are overpriced
- This causes adverse selection as uninformed investors know they will on average overpay

# Willingness to pay

- Securities have value $V_H$ with probability $\pi$ and $V_L < V_H$ otherwise
- Informed investors buy at most $\overline{Q}$ of the total $Q$ securities
- Informed investors are willing to pay $V_i$ for a security
- Uninformed investors are willing to pay the expected value $\hat{S} = \pi V_H + (1 - \pi) V_L$ for a security

# Losses to uninformed investors

- As $\hat{S} > V_L$, uninformed investors submit higher bids and will obtain the entire issue if $V_L$ is realised
- The profits are the difference between the value and the price paid for each security
- Profits: $\Pi_C^L = \left(V_L - \hat{S}\right) Q = -\pi \left(V_H - V_L\right) Q$
- The offer price is $\hat{S}$ as all bids are at that level

# Profits to uninformed investors

- As $\hat{S} < V_H$, uninformed investors submit lower bids and will obtain only $Q - \overline{Q}$ securities if $V_H$ is realised
- The profits are the difference between the value and the price paid for each security
- Profits: $\Pi_C^H = (V_L - S)\left(\overline{Q} - Q\right)$
- The offer price can be any price below $V_H$

# Participation of uninformed investors

- Expected profits of uninformed investors are $\Pi_C = \pi\Pi_D^H + (1-\pi)\,\Pi_D^L$
- Uninformed investors only participate if $\Pi_C \geq 0$ or $S \leq S^* = V_H - (1-\pi)\,(V_H - V_L)\,\frac{Q}{Q-\overline{Q}} \leq V_H$
- The issue is underpriced if the high value is realised
- Expected offer price: $E\,[S] = \pi S^* + (1-\pi)\,\hat{S} \leq \hat{S}$
- On average the issue is underpriced

# Effect of underpricing

- Underpricing allows uninformed investors to make profits in high-demand issues and offsets their losses in low-demand issues
- This inducement allows low-demand issues to be sold to uninformed investors at high prices
- The lower allocation for high-demand issues results in overall underpricing

# Cross-subsidization

- Investment banks do not pay to ensure the issue is sold
- Issuers pay for the inducement of uninformed investors through underpricing
- The losses are to issuers with securities in high demand, those unaffected by the low demand
- It is a cross-subsidization of issuers with high-demand securities to those with low-demand securities


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