The Market for “Lemons”:
Quality Uncertainty and the Market Mechanism

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Introduction

- Quality vs. uncertainty
- Economic costs of dishonesty
- Counteracting institutions
Assumptions

- **Goods**
  - Varying quality

- **Buyers**
  - Judge goods by market statistic

- **Sellers**
  - Know quality of own goods
Automobile Market

- Leaving the showroom
- Asymmetry in available information
- Owners locked in
- Gresham’s law
Asymmetrical Information

- $p = \text{price}$
- $\mu = \text{average quality of traded cars}$
- $D = \text{demand}$
- $S = \text{supply}$

- $\mu = \mu(p)$
- $D = D(p, \mu) = D(p, \mu(p))$
- $S = S(p)$

- $D(p, \mu(p)) = S(p)$
Assumptions

- $U_1 = M + \sum x_i$
- $U_2 = M + \sum (3/2)x_i$
- $Y_1, Y_2 = \text{income}$

Assumptions
- Linear utility
- $k$-th car adds same utility as 1\text{st}
- All traders wish to maximize utility
- Group 1 has $N$ cars
- Quality $= x \sim \text{unif}(0,2)$
Demand

- $D_1 = \frac{Y_1}{p}$
  - $D_1 = 0$  
  - $p < \mu$
  - $p > \mu$

- $D_2 = \frac{Y_2}{p}$
  - $D_2 = 0$  
  - $p < \frac{3\mu}{2}$
  - $p > \frac{3\mu}{2}$

**Problem:**
- Price = $p$
- $\mu = \frac{p}{2}$
Symmetric Information

- $S(p) = N$ \hspace{1cm} $p > 1$
- $S(p) = 0$ \hspace{1cm} $p < 1$

- $D(p) = \frac{Y_2 + Y_1}{p}$ \hspace{1cm} $p < 1$
- $D(p) = Y_2 / p$ \hspace{1cm} $1 < p < 3/2$
- $D(p) = 0$ \hspace{1cm} $3/2 < p$
Equilibrium

**Symmetric case**

- \( p = \frac{3}{2} \) if \( N < \frac{Y_2}{(3/2)} \)
- \( p = \frac{Y_2}{N} \) if \( \frac{Y_2}{(3/2)} < N < Y_2 \)
- \( p = 1 \) if \( Y_2 < N \)

**Gain in utility**

- \( \frac{N}{2} \) if \( N < Y_2 \)
- \( \frac{Y_2}{2} \) if \( Y_2 < N \)
Insurance

- People over 65
  - Difficult to buy insurance
  - Why doesn’t price rise to match the risk?

- Average medical condition vs. price
- Too many lemons!

- Medicare
Moneylenders

- **Leading factor in landlessness**
- **Large banks**
  - 6, 8, or 10% interest
  - can enforce contract
- **Local moneylenders**
  - 15, 25, 50% interest
  - knows borrower’s character
Minority Employment

- Race may serve as statistic
  - Social background
  - Quality of schooling
  - General job capabilities
- Slum schools
  - Grades unreliable
  - Rewards for work accrue to group
- Cost-benefit analysis problematic
Costs of Dishonesty

- Purchasers cheated
- Honest dealings driven out of market
- \( \frac{1}{2} \) unit of utility / automobile
Underdeveloped countries

- Quality variation greater
- Variation impedes development
  - Merchant traders
  - Entrepreneurship
Counteracting institutions

- Guarantees
- Brand-name good
- Chains
- Licensing practices
- Indian industrial scene
  - Managing agencies
    - Reputation for “honest dealing”
  - Communal groups
Conclusion

“Informal unwritten guarantees are preconditions for trade and production. Where these guarantees are indefinite, business will suffer.”