Asymmetric information – introduction

In the pure exchange models underlying the FTWE, every market participant knows the quality of all goods.

“Symmetric ignorance” does not change anything significant.

However, problems arise when participants are asymmetrically informed.

- Adverse selection (asymmetric information before the trade, offer is a signal of information)
- Signalling (asymmetric information before the trade, some unrelated activity is used as a signal of information)
- Moral hazard (trade affects behavior after contracting in a way that the contract partner cares about)
The market for “lemons”

A wants to sell his used car. He knows the quality $q$ of his car. If he keeps his car, his utility is $aq$, if he sells for a price $p$, his utility is $p$.

B does not have a car and considers buying A’s car. If he gets a car of quality $q$ for a price $p$, his utility is $bq - p$, otherwise, it is zero. Assume $b > a$.

The problem is that B does not know the quality of A’s car, only that it is drawn from a uniform distribution on $[0, 1]$.

It is efficient that A sells the car to B (why?). Will this happen in equilibrium?

Game structure: (1) A proposes a price $p$ for the car; (2) B decides whether to accept (pay the price, get the car) or reject.
The market for lemons

Appropriate belief for B?
Assume A suggests \( p \rightarrow B \) will infer that \( aq < p \) (why?)
\[ \rightarrow \text{expected quality: } \frac{p}{2a} \]
\[ \rightarrow B\text{'s maximum willingness to pay for such a car: } b \frac{p}{2a} \]

Optimal action for B, given \( p \):
Accept if \( p \leq b \frac{p}{2a} \), reject if \( p > b \frac{p}{2a} \).

If \( b < 2a \), then there is no price for which the two individuals can trade.
The market for lemons

Usual mechanism for equating supply and demand breaks down: If A lowers the price he charges, then B lowers his estimate of the quality of the car and hence his willingness to pay for the car.

Markets with similar phenomena:
- life insurance/annuities
- health insurance
- corporate finance (outside versus inside financing)