

# ASYMMETRY IN FINANCIAL MARKETS

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# TABLE OF CONTENTS

**1.) Akerlof's Lemon Theory**

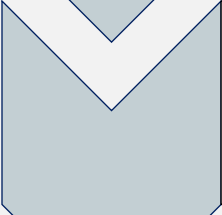
**2.) Spence's Signaling Model**

**3.) Application to Financial Markets**

# AKERLOF'S LEMON THEORY

## Assumptions

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- **What buyers know is that with probability ( $q$ ), a used car is a good car and with probability ( $1-q$ ), a used car is a lemon**

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- **Lemons and good cars must sell for the same price since type isn't distinguishable by the buyer**

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- **Demand for automobiles depends on price  $P$  and average quality of used cars traded  $\mu \rightarrow Q_d = D(p, \mu)$  st  $\mu = \mu$  and supply  $S = S(p)$**

**Sellers know more than buyers in the used car market**

## HOW DOES THE LEMON MARKET BREAK DOWN?

- **Since those with good used cars must sell their cars below a “fair” price, they don’t sell**
- **Additionally, sellers of lemon cars get more money than what their car is worth in the market**
- **Thus, there can be no trade**
- **How does this apply elsewhere? The insurance market**

# AKERLOF ON INSURANCE

**As price level rises, those who purchase insurance are more certain they will need it**

**Insurance premiums are higher for those 65 and over**

**Medical insurance becomes the least available to those who need it most**

**Adverse Selection and Moral Hazard are present in all insurance lines**

## AKERLOF'S TAKEAWAYS

- **Since there is uncertainty everywhere, trust is important in exchange**
- **Akerlof also concluded his paper with another real life application of market asymmetry: the job market**
  - **How do you know that a candidate will be a profit maximizer for your firm?**  
**What are the complications surrounding hiring?**

# SPENCE'S SIGNALING MODEL



**The population is divided in two groups: those with low productivity and those with high productivity**

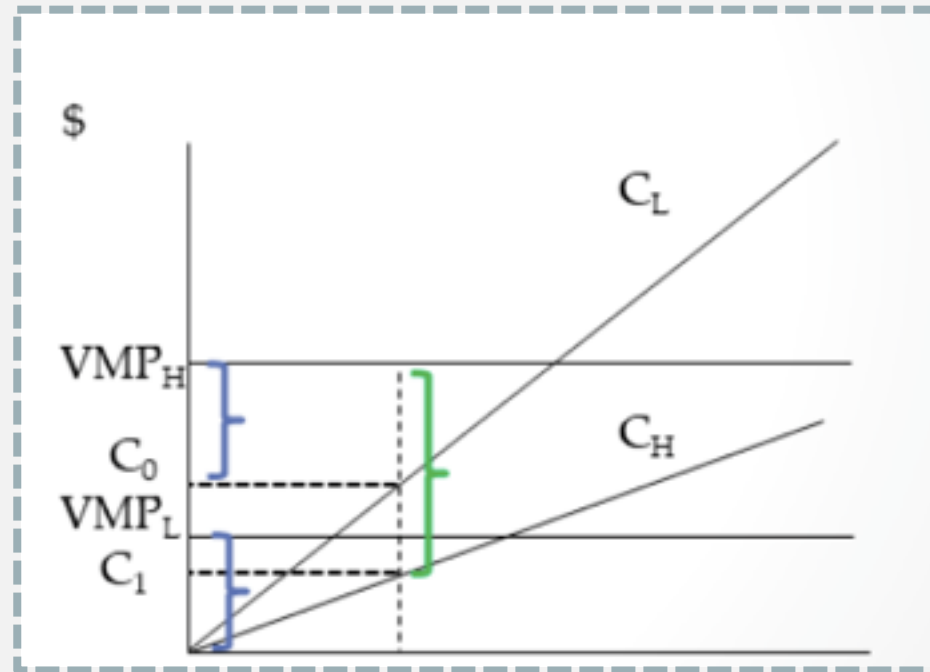
**Asymmetry: the employer doesn't know which group the applicant belongs to**

**What can employers do? Take Signals**

**Spence argues that it is in the employer's interest to try to guess the applicant's productivity**

# SEPARATING EQUILIBRIUMS

- Separating equilibria occur when the cost of obtaining the signal is high enough such that only those who truthfully should have the signal can obtain it





# SPENCE MODEL IN THE JOB MARKET

- **Suppose attaining higher education is a signal of productiveness**
- **The crucial assumption is that signaling costs are negatively correlated with productive ability**
- **For this to hold true, higher productivity types incur lower costs of acquiring education (the signal) than those with lower productivity**
- **What are the issues with this?**
  - **Is this disadvantageous to a certain group? What if it really isn't a signal? What about resources available to obtain the signal?**

## APPLICATION TO FINANCIAL MARKETS

- Market information asymmetry appears in financial markets as exemplified in Paul Milgrom and Nancy Stokey's paper entitled "Information, Trade, and Common Knowledge"

“

*Suppose you come to me offering to sell me a stock for \$100 a share. Why are you offering to sell it to me for \$100? Maybe you're selling stocks because you're shifting into bonds, or ready to retire, or need to pay a sudden medical expense. But chances are, you think the stock is worth less than \$100, and you're trying to unload it. That should make me wary about taking you up on your offer. But on the other hand, if I jump at the offer, that should tell you that I have reason to believe the stock is worth more than \$100 ... and that should make you wary.*

”

# HOW DO WE MAKE MONEY IN MARKETS?

- **Noah Smith's piece entitled "The Dirty Little Secret of Finance: Asymmetric Information" said this very phenomenon of asymmetrical information, "leads us to believe that most people who buy and sell financial assets have no intrinsic desire for the asset itself -- they only care about how its value to other people will change in the future."**
- **Information becomes the product**
- **Apart of information being the product is trust in your broker/salesperson**

# ASYMMETRICAL INFORMATION SHOWN BY BID/ASK SPREAD

- **Definition:** the difference between the highest price a buyer is willing to pay and the lowest price a seller is willing to sell it at
- **Bid/ask spread can be affected by perceived risk and market liquidity, among other things**
- **Milgrom's paper entitled, "Bid, Ask, and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders," he postulates that the magnitude of the bid/ask spread reflects the information available to the market with someone having superior information**

# BID/ASK SPREAD

- **Milgrom proposes that, “if traders have the same prior beliefs and trading motives are purely speculative, then no trading should happen”**
  - **But this is obviously not the case since we have global markets**
- **Milgrom also states that bid/ask prices should straddle what the price would be if we had perfect information markets**
- **What about inside information? Or when markets don't capture the true price in spreads?**

# WHERE HAVE WE SEEN THIS?

**Financial bubbles in our past exemplify the imperfect information markets we have as prices of assets exceed the fundamental values**

**1990s**

**Dot-Com Bubble in the late 1990s fueled by rising investments in technology companies**

**2008**

**US Housing Bubble in 2008 sparked risky lending and underwriting of MBS**

**This reflects the Herd Instinct which, “is a mentality that is distinguished by a lack of individual decision-making or introspection, causing people to think and behave in similar fashion to those around them”**

## CONCLUDING REMARKS

- **Asymmetry makes making money in the market possible as all its participants don't know for certain what the future holds, as Milgrom pointed to**
- **Markets are speculative**
- **Trust becomes an agent to fight against uncertainty, as proposed originally by Akerlof and supported by Spence's Model**

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