Information and Strategy 2021

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This plan is preliminary and subject to changes.

1 Introduction to asymmetric information

We use the first 2-3 weeks to introduce the classics in information economics. We see that asymmetric information can lead to inefficiencies in markets and start to discuss what measures players/markets may use to avoid these inefficiencies (at least partially). However, we also see that the clever use of information asymmetries can make everyone better off in some cases.

1.1 Adverse selection: Akerlof's lemons market

- Akerlof's lemons market

- the first welfare theorem does not hold if different players have different information

- applications: used car markets and warranties, adverse selection in insurance markets

- sources: chapter 5.3 in Campbell (2018)

1.2 Mediation and correlated equilibrium

- correlated equilibrium

- an impartial mediator can use asymmetric information to make everyone better off

- sources for the technical details: chapter 8 in Maschler et al. (2013)

- practice: Jann and Schottmüller (2015)

1.3 Information rents and screening

- 2 type screening problem and revelation principle

- information creates "rents" for those who have information but uninformed parties reduce these rents by distorting allocations inefficiently

- applications: non-linear pricing by a monopolist

- technical extension: screening with a continuum of types (handout)

- sources: chapter 2.1.3 and 2.3.3 in Bolton and Dewatripont (2005)

2 Information design

Sometimes we can determine how informed others (or we ourselves) will be, e.g. a central bank can decide how to test banks in a "stress test" (and the information the market gets from the test depends on how strict the test is), a prosecutor decides which witnesses to hear in court and a school might decide how finely grained its grade system is. Which design should the information designer optimally choose?

2.1 Bayesian persuasion

- Bayesian persuasion and the concavification approach

- how can you structure other players' information to reach your goals?

- application: will bad banks fail optimal stress tests?

- sources: Kamenica and Gentzkow (2011)

- practice: Schweizer and Szech (2018)

2.2 Bayes correlated equilibrium

- the BCE approach to information design

- sources: section 1-3.2 in Bergemann and Morris (2019)

3 Strategic communication (cheap talk)

People might share what they know with others. The recipients of the information might be able to make use of this information when choosing what to do; e.g. you might go to a new restaurant if someone tells you it is great. This, however, opens the door for manipulation: For example, the restaurant owner might pay people to give positive reviews to others. Which sender and which messages can be trusted to what extent?

3.1 Homophily and echo chambers

- discrete state cheap talk

- People mainly communicate with people that are similar to them. Is this inefficient or could there be an informational reason?

- application: communication and the internet, echo chambers

- practice: Jann and Schottmüller (2018)

3.2 Continuous state

- classic cheap talk model with a continuum of states

- applications: delegation

- sources: Crawford and Sobel (1982)

- practice: Schottmüller (2013)

4 Hard evidence

Sometimes one can communicate information credibly by having a third party expert certifying it; e.g. rating agencies can certify the quality of an asset or the creditworthiness of a person, one can take a test - like GRE or TOEFL - to certify certain abilities etc. Who will certify what? Which information will be transmitted and which won't?

4.1 complete unraveling

- the incentive to show that one is better than the rest can lead to complete information unraveling

- applications: privacy legislation

- sources: ch. 5.1 in Bolton and Dewatripont (2005), (background: Milgrom (1981))

4.2   partial unraveling

- costly certification and noisy certification (Dye's model)

- who will certify if the unravelling logic does not apply completely?

- applications: should students be able to choose among exam questions?, risk taking (BDL)

- sources: Dekel's slides, (background: Dye (1985); Jung and Kwon (1988))

5   Reputation and advice

Interacting repeatedly allows to build a reputation. E.g. if a friend has never lied to you, you may expect him not to lie in the future. The friend has a reputation for honesty. Can a strategic friend (who might occasionally have an incentive to lie to you) be always honest? If there are benefits from being perceived as honest, how will a friend behave today?

5.1   Chain store paradox and reputation

- Can players commit to a certain action that they would normally not take when interacting several times?

- applications: reputation for behavior

- sources: ch. 9.1-9.2, 9.4 in Fudenberg and Tirole (1991)

5.2   Career concerns

- How will concerns about the future affect a person's decision about how much effort to exert today?

- sources: Holmström (1999)

5.3 advice

- Will experts give best possible advice if they are motivated by an incentive to show the world that they are great experts?

- sources: Ottaviani and Sørensen (2006a)

6 Papers to present

These are some papers that students may choose to present. If you want to present a paper that is not on the list, please contact the course instructor.

6.1 Adverse selection and screening

- Che (1993)

- Bergemann and Pesendorfer (2007)

- Martimort and Stole (2009)

- Bijlsma et al. (2018)

- Curello and Sinander (2020)

6.2 Information design

- Taneva (2019)

- Bergemann and Morris (2016)

- Bergemann et al. (2015)

- Bergemann and Bonatti (2015)

- Bergemann et al. (2017)

- Baliga and Ely (2016)

- Ely (2017)

- Mylovanov and Zapechelnyuk (2017)

- Goldstein and Leitner (2018)

- Bergemann et al. (2018)

- Shishkin (2019)

- Mathevet et al. (2020)

6.3   Hard evidence

- DeMarzo et al. (2019)

- Song Shin (2003)

- Pram (2020)

- Nageeb Ali et al. (2019)

- Shishkin (2019)

6.4   Strategic communication (cheap talk)

- Stein (1989)

- Alonso et al. (2008)

- Dessein (2002)

- Battaglini (2002)

- Galeotti et al. (2013)

- Deimen and Szalay (2019)

- Deimen and Szalay (2020)

6.5   Reputation and advice

- Sobel (1985)

- Prendergast (1993)

- Prendergast and Stole (1996)

- Ely and Välimäki (2003)

- Park (2005)

- Prat (2005)

- Ottaviani and Sørensen (2006b)

- Bhaskar and Thomas (2019)

- Jullien and Park (2014)

- Aghion and Jackson (2016)

- Klein and Mylovanov (2017)

- Neeman et al. (2019)

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