Test Friday

The nature of the circumstance

      is such that

- you can not plan without making assumption about other's actions.

- you are tempted to act illegally (collude)

- avoidance of risks tempts you to be conservative/slow to change

        1) Nature of circumstance

        2) Understand these implications

Oligopoly:
    Nature of market
        1) Few large producers, 2) homogeneous or differentiated products,
        3) control over price but interdependence 4) Barriers to entry (scale, other)

    Concentration ratio: % or industry output controlled by X largest firms.
        Four firm concentration ratio - top 4 control more than 40% it is an oligopoly.
        But this can miss:
        - Note geographic (over/under)
        - Note substitutes
        - Note foriegn competitors
    Oligopoly:
        - Not one circumstance => tight vs. loose, barriers differ
        - Interdependence tough to model (see Nobel prize).

Read book on type of cartels, why they break down, price leadership

Oligopoly:
Barriers of entry make it so that there are
so few of us that we determine each others fates.


i.e.
If one of you cuts prices, others have to also =>
price war to the death.

Alternatives:
      Collude
      Be stagnant

Classic game theory:

1) Each participant faces the same choice and possible outcomes
2) Each participant must make the choice
3) A participant can get different outcomes for the same choice based on the other parties choices.

Each Guy

|  | Go for HDYL | Go for other |
|---|---|---|
| Go for HDYL | All lose | Fortunate result |
| Go for other | Depends | All fortunate result |

Other guys

Analyzing choices.
- Step through the possible actions by others for each strategy..
    What is your best choice in each case?

- If the best choice in each case is the same, then there is a dominant strategy.

Is there a dominant strategy here?

    Yes, done
    No, so collude.

**http://www.video.janyug.com/view-st-1229.html**

# Classic prisoners dilemma

Two criminals are arrested for a crime in which they conspired.
There is no good evidence but the possible testimony of one of them.
Each is presented the choice.

      Rat your friend and go free.

      Don't rat, but if you get convicted (because the other guy ratted) you get 10 years in jail.

What happens if we both rat? You both get 5 years.

Other guy

Prisoner 1

|  | Rats | Say nothing |
|---|---|---|
| **Rats** | 5 years / 5 years | 10 years / free |
| **Says nothing** | free / 10 years | six months / six months |

Prisoner 2

Is there a dominant strategy?

But there is a huge value to knowing what the other will do.

Oligopolist

Us

|  | Hold prices | Cut prices |
|---|---|---|
| **Hold prices** (Them) | no change | 50/50 chance, one of us out of business |
| **Cut prices** (Them) | 50/50 chance, one of us out of business | Both bankrupt |

Them

Unclear, but holding prices close to dominant.
Far less risk in holding still.

You

|   |   |
|---|---|
|   | * |
|   | * |

Them

1) What choice is best for you if they do A?
2) What choice is best for you if they do B?
3) Are they the same choice for you?
       Dominant strategy.

Nash Equilibrium -

       When interdependent decision makers each have a clear strategy, a best choice, based on consideration of all factors including the potential actions of others
       AND
 and has no reason to expect to benefit from changing that strategy as long as there is no reason to expect change in the strategy of others.

Nash Equilibrium describes a stable circumstance not an optimal result.


       If the matrix of options for the oligopolist presents a dominant strategy
              AND
       the oligopolist can assume all the other oligoplosit face a dominant strategy

              THEN

       all the oligopolists involved should get up and do the same thing everyday
              (**even if it is not the best of all possible results for the "group")**.
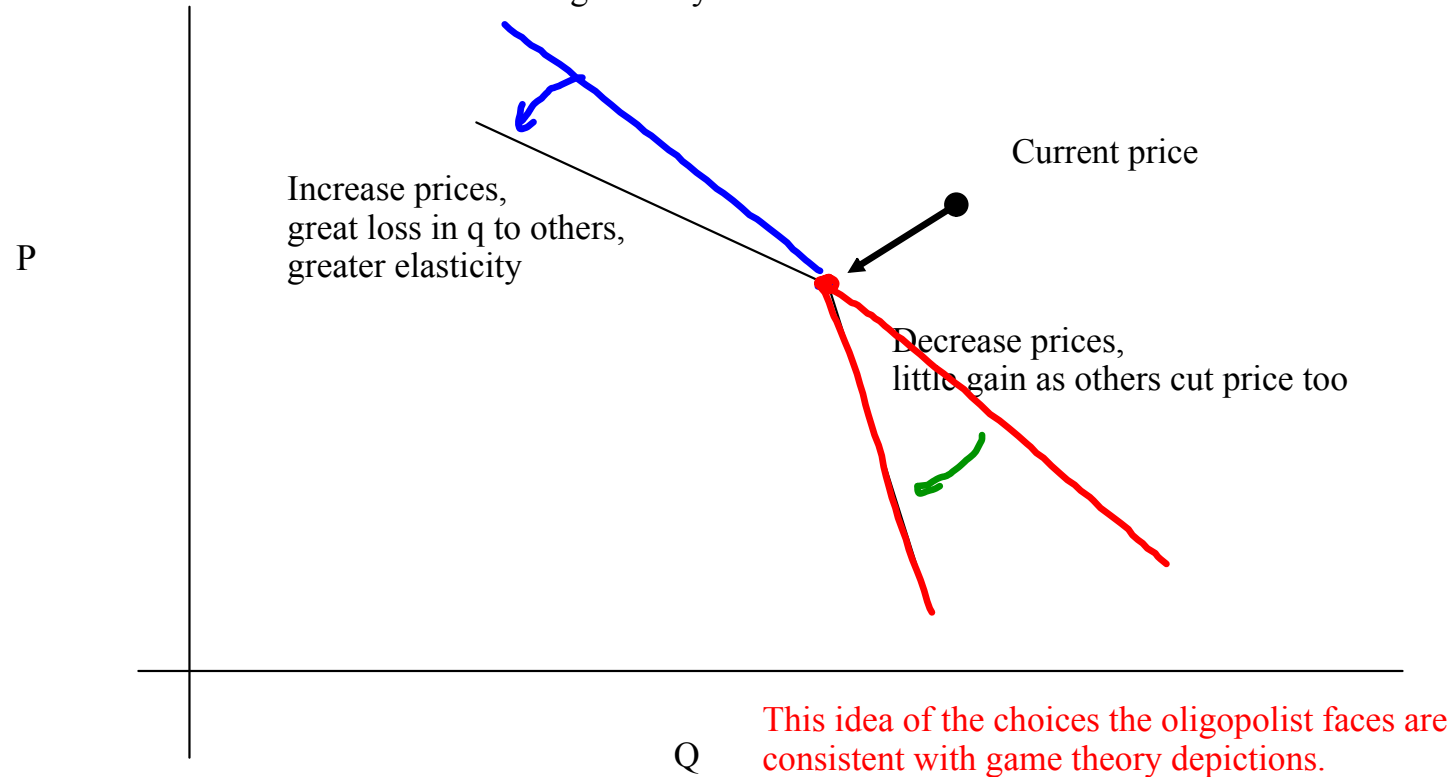
Oligopolist                    Us

|  | Cut prices | Hold prices | Raise prices |
|---|---|---|---|
| **Cut prices** | Price war=> *<span style="color:red">✱</span>* lose profit, risk survival | I lose share, *<span style="color:blue">∗</span>* may reduce profit | I lose <u>lots</u> of share, may reduce profit |
| **Them** **Hold prices** | I gain share, *<span style="color:blue">∗</span>* but may reduce profit | Current profits | I lose share, *<span style="color:red">✱</span>* may reduce profit |
| **Raise prices** | I gain <u>lots</u> of share, but may reduce profit | I gain share, *<span style="color:red">✱</span>* may increase profit | No change *<span style="color:blue">∗</span>* in share, higher profits |

Kinked demand -assumes no collusion.
    - Weak model, not generally accepted or analytically useful
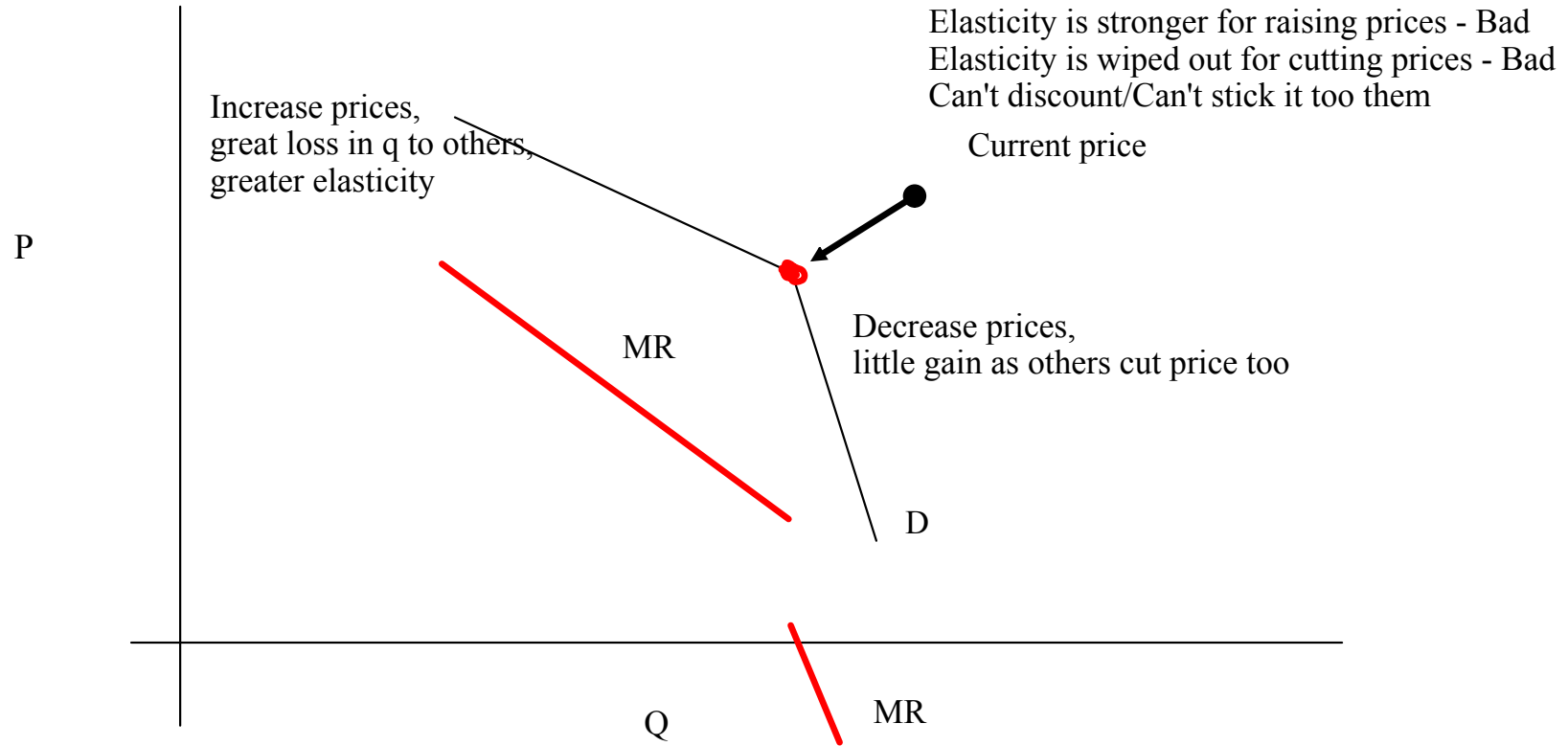    BUT
    - Depicts logic on inflexibility of price
    - Shows complexity and dangers of demand curve faced by non-collusive oligopolist
    - Helps us assess allocation
    - Leads to what can be gained by collusion.

Current price

Increase prices,
great loss in q to others,
greater elasticity

P

Decrease prices,
little gain as others cut price too

Q

This idea of the choices the oligopolist faces are
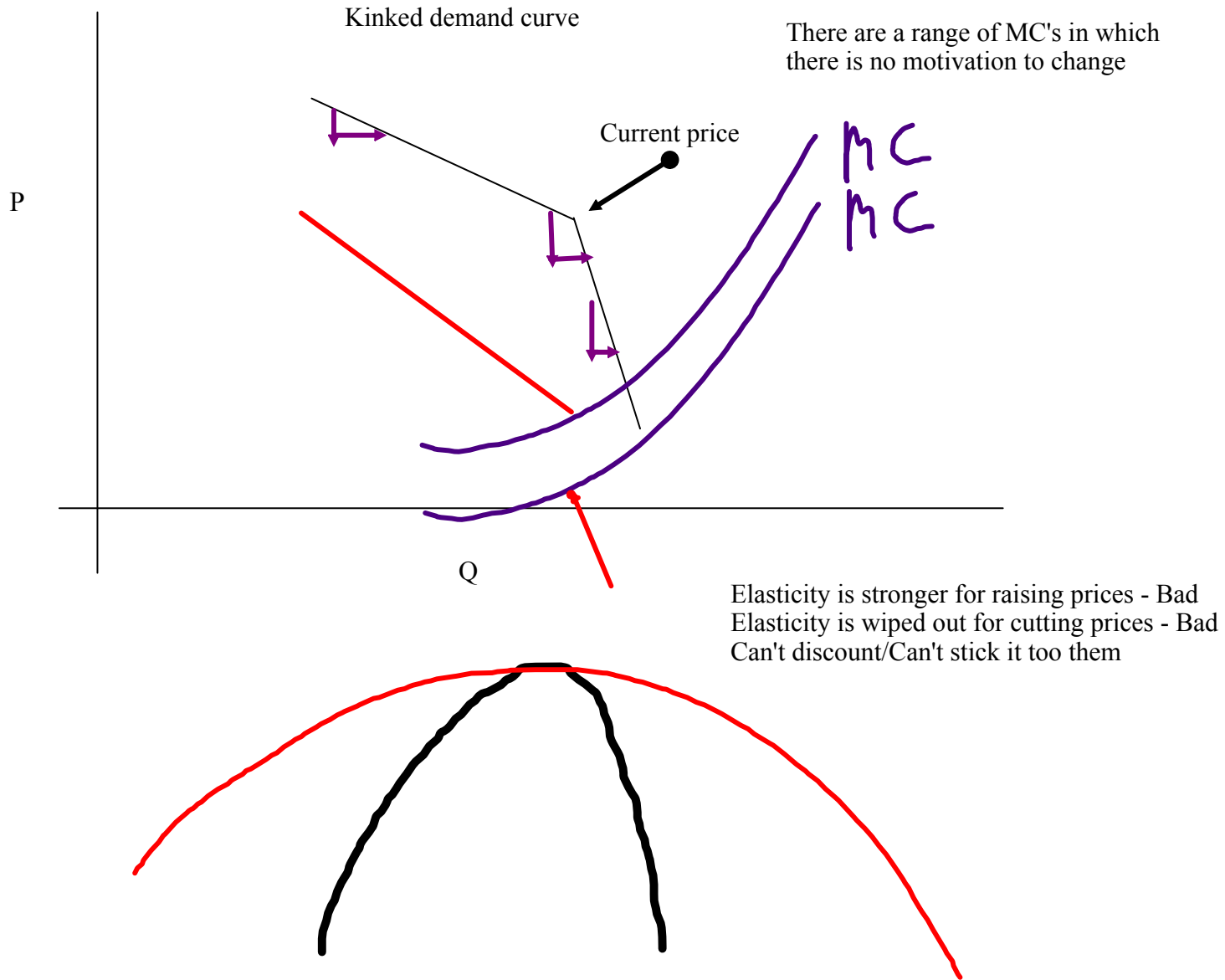consistent with game theory depictions.

Not just a simple variation on monopolist demand curve

Kinked demand curve

Perhaps it is not like this, but the idea that the odd demand curve give an odd MR situation is valuable.

Elasticity is stronger for raising prices - Bad
Elasticity is wiped out for cutting prices - Bad
Can't discount/Can't stick it too them

Increase prices,
great loss in q to others,
greater elasticity

Current price

P

MR

Decrease prices,
little gain as others cut price too

D

Q

MR

Not just a simple variation on monopolist demand curve

Kinked demand curve

There are a range of MC's in which
there is no motivation to change

Current price

P

MC
MC

Q

Elasticity is stronger for raising prices - Bad
Elasticity is wiped out for cutting prices - Bad
Can't discount/Can't stick it too them

Kinked demand -assumes no collusion.
- Weak model, not generally accepted or analytically useful
BUT
- Depicts logic on inflexibility of price
- Shows complexity and dangers of demand curve faced by non-collusive oligopolist
- Helps us assess allocation
- Leads to what can be gained by collusion.

Collusion can get you this:
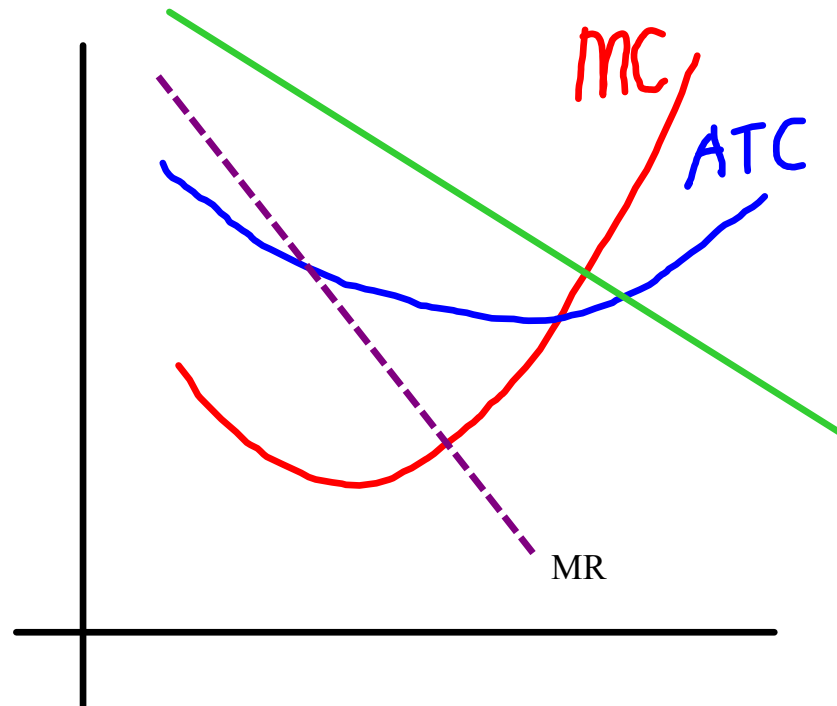
Why would oligopolist want this?

Predictability
Economic profit

Why would economist not want this?

High prices
Underallocation

MC

ATC

D

MR

Read book on

Types of collusion: Overt (cartels) vs Covert
Obstacles to collusion.

D and S differences.  # involved. Cheaters cheat. Exogenous pressures (recession).
New poeple.  The law

Advertising - Lots of research - common sense
Pros: information
Cons: Inefficient use of resources, false value, create barriers (monopoly profits)

Note: Price leadership model - closer to common reality:
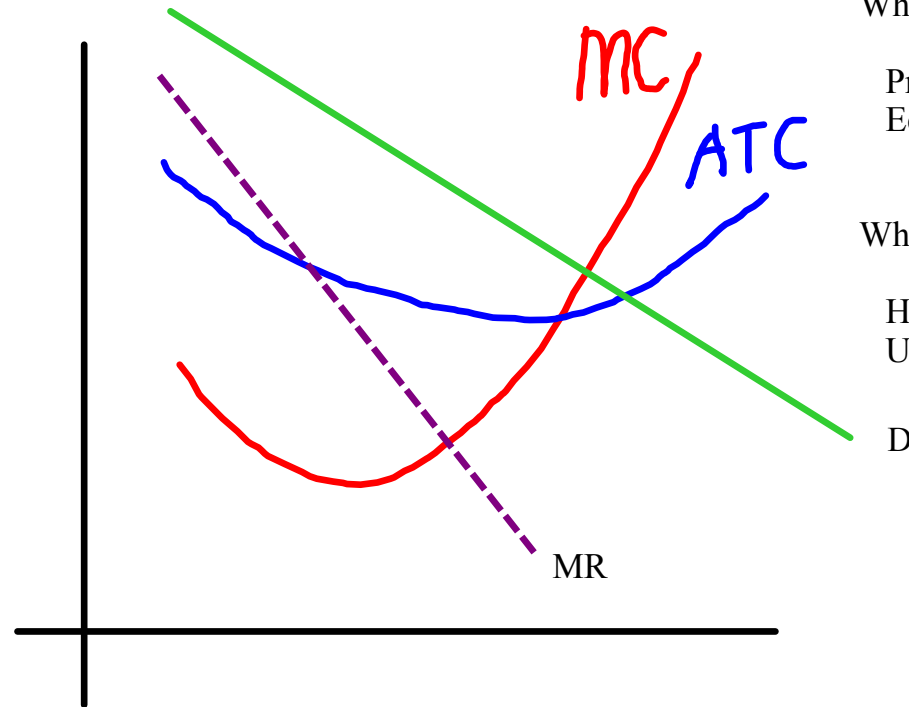How would leader behave?

Slow to change
Hints in some systematic way
Blocks new entrants with low prices, not always using highest prices

When it fails - price wars

Collusion can
get you this:

Why would oligopolist want this?

Predictability
Economic profit

Why would economist not want this?

High prices
Underallocation

MC

ATC

D

MR

Verdict on oligopoly:

Standard 1: allocation
       Productively efficient?
              Not at P=minimum ATC
                     Sloped MR, profits

       Allocatively efficient?
              Can't be, not productively
              P>MC because of sloped Demand curve

Other:
       Oligopoly vulnerable and temporary - see foreign
competition
       Limit pricing is helpful
       May help push R&D, see next chapter

Oligopolists are motivated to collude or not rock the boat.
   Advertising

Oligopolists are motivated to collude or not rock the boat.