

(after exam so skipping covered parts)

Monopolistic Competition - products differentiated

The more it can brand, etc the more it can act like a monopoly
free entrance + exit

Oligopoly - few firms, competition restricted

Strategy/game theory important

Cartel - firms collude

Care about joint profits

but not all players members + cheating

Monopolistic Competition

Cost is fairly elastic (~ -5)

Customers will pay $\sim .25 - .50$ cents more

Product highly, but not perfectly substitutable

Free entry + exit

- if not would be an oligopoly

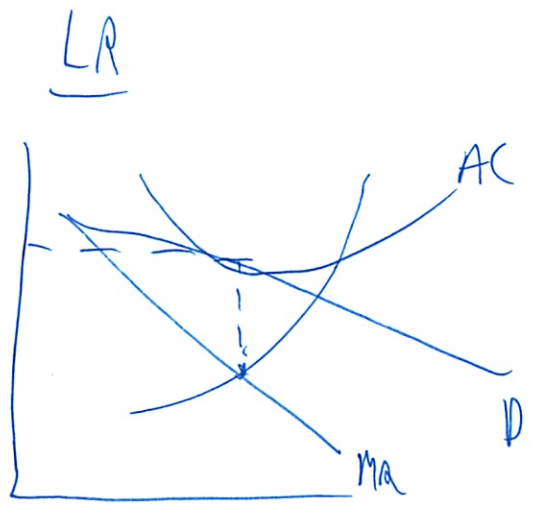
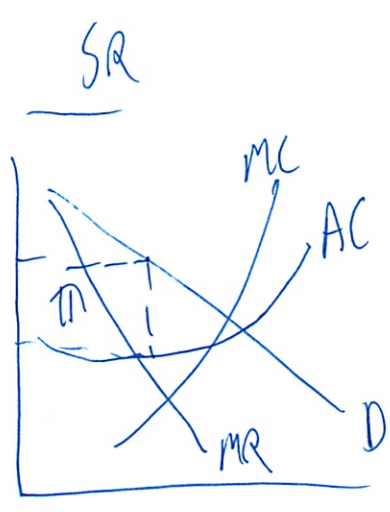
in long run π driven to 0

- firms are attracted to the market

- firm A's demand curve shifts down (costs don't change)

- price falls to AC

(2)



? see previous pg
~~price rises to AC~~

not as efficient as pre competition

- producers may make profit
- or leave excess capacity causing higher costs

but

- monopoly power is small
- benefits from product diversity
- can outweigh the efficiency costs



③ Oligopoly

Products may or may not be differentiated
Some or all firms make substantial profits

barriers to entry

- econ of scale
- patents

- cost of capital to enter

- incumbent firms could take strategic action

Managing one is very complex - need to consider strategy

- what competitor will do

- decisions / reactions all intertwined

Equilibrium

~~Price~~ each firm's p, q set strategically

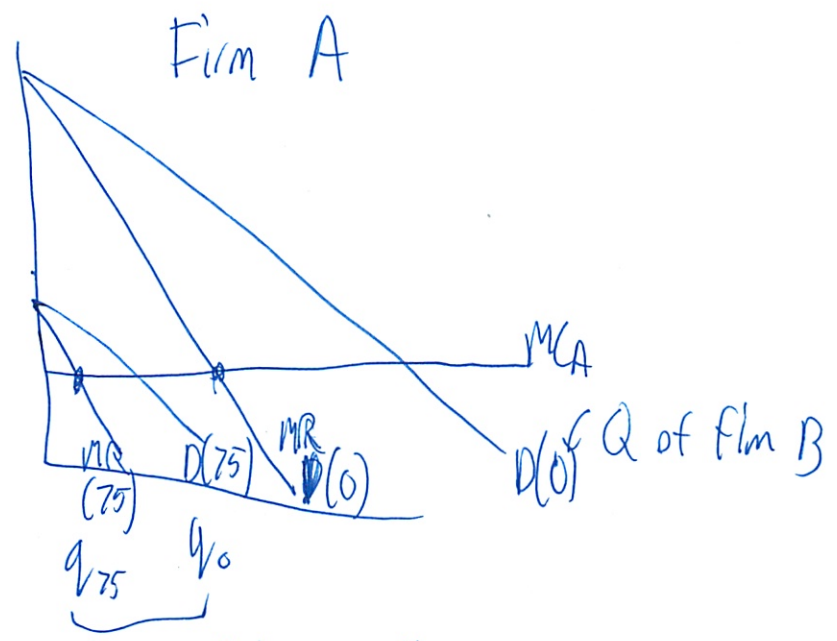
"When firms are doing the best they can - don't want to change anything"

Nash equilibrium - doing the best they can given
what their competitors are doing

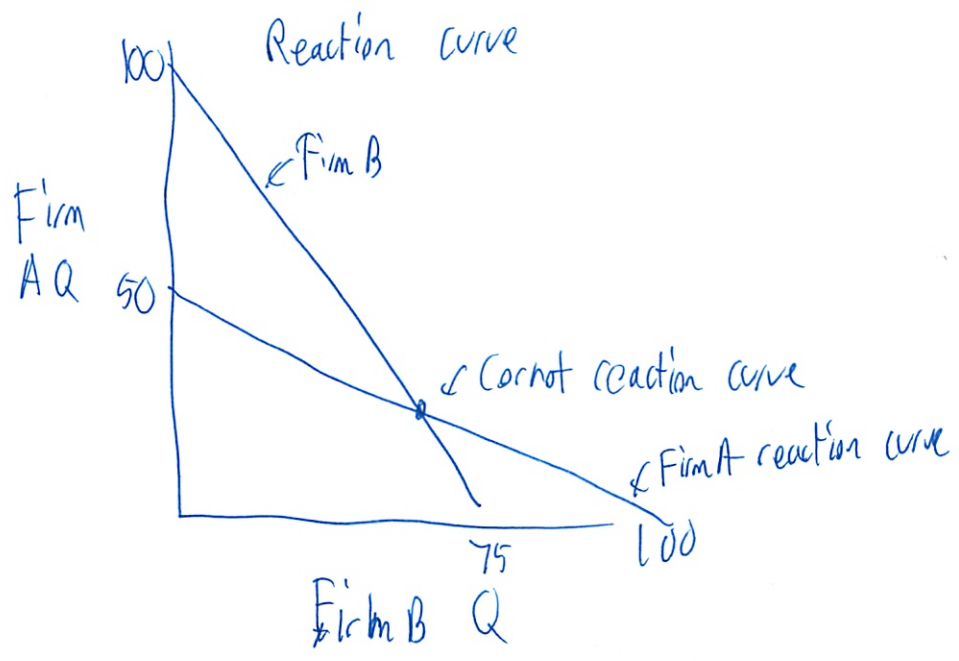
When only 2 firms = duopoly

④ Cournot Model

- each firm must decide how much to produce
- makes decision at same time
- when deciding \rightarrow treats output level of competitor as fixed
(went over this in lecture + recitation)



transferred to reaction curve \downarrow



Cournot equilibrium is an example of the Nash equilibrium

5

- at this Cournot-Nash equilibrium, no firm wants to ~~change~~ change output
 - Cournot model says nothing about how firms adjust to this position
 - assuming competitor's q is fixed won't work ~~statically~~ unless just
 - Chap 13 ~~will work~~ choosing output once
- (did math in recitation)
-

First Mover / Stackelberg Model

One firm can set their output 1st

(did math in recitation)

- gives the firm that set 1st an advantage
 - no matter what your competitor does your output will be large
 - then competitor \rightarrow accept small
 - ↳ or go large and drive down prices
- So this usually applies if 1 firm is dominant

⑥ 12.3 Price Competition

previous model assumed firms set q
but in some price is what is competed w/

Bertrand Model (Homogeneous product)

(did not do in recitation)

$$P = 30 - Q$$

$$MC_1 = MC_2 = 3$$

$$Q = Q_1 + Q_2$$

Consumers only buy from lowest-priced seller

So the Nash equilibrium is $p = MC$

- same as competitive outcome!

- since price war drives them down

Firms would not set higher price b/c one could always cheat and double its profits

Differentiated Products

- firms compete on price not Q

- say both have $FC = 20$ $VC = 0$

$$D_1 = Q_1 = 12 - 2P_1 + P_2$$

$$D_2 = Q_2 = 12 - 2P_2 + P_1$$

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Choosing a price

$$\pi_1 = P_1 Q_1 - 20 = 12 P_1 - 2 P_1^2 + P_1 P_2 - 20$$

- ~~the~~ depends on P_1, P_2

- so assume P_2 fixed

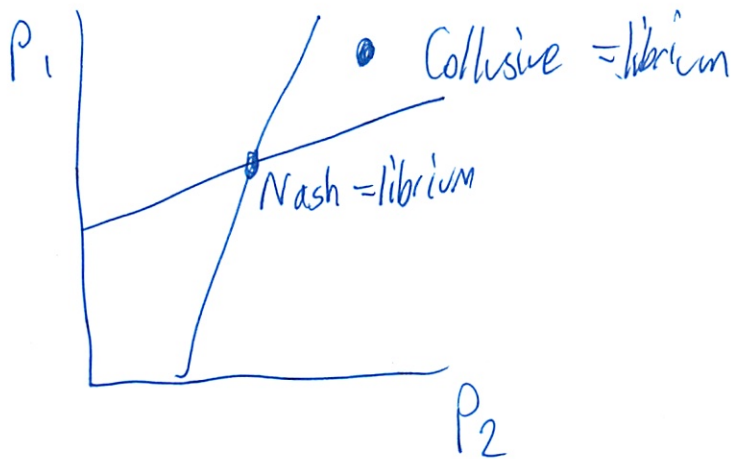
$$\frac{\Delta \pi_1}{\Delta P_1} = 12 - 4 P_1 + P_2 = 0$$

- so get reaction curves

$$P_1 = 3 + \frac{1}{4} P_2$$

$$P_2 = 3 + \frac{1}{4} P_1$$

- both firms doing best possible



- if one firm sets its price 1st - would be at a distinct disadvantage

- other one can undercut slightly

⑧ I like their P+6 example

- other firms know what your break even pt is
or try to know

So they think you will set your price slightly above, so they will set it slightly below - or not enter market

12.4 Prisoner's Dilemma

(did in lecture)

Game theory example

The problem is you personally can do better by cheating
form a payoff matrix

- they put higher value on bottom/right - weird
each firm always makes more \$ going to a lower price
if it does not know what competitor will do

12.5 Impacts for Oligopolies

firms can set outputs over + over again

managers gain explicit understanding price wars hurt

differs in every market

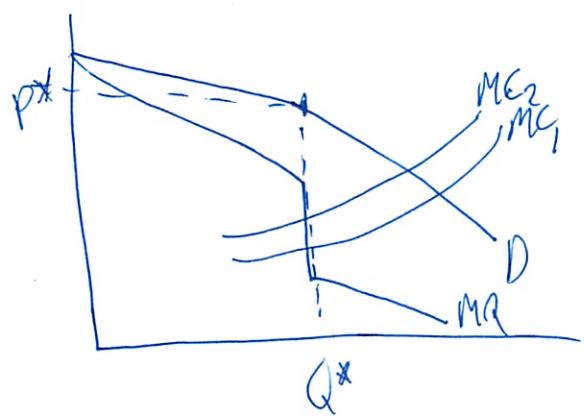
firms don't agree on collusive price

so many implicit agreements are short lived

9

Price Rigidity

- So firms have a strong incentive for price stability
 - even when costs change
 - changing prices would "rock the boat"
- So kinked demand curve



- description, not explanation
- how did they get to p^* in 1st place?

Price Signaling / Price Leadership

- hard to agree w/o talking to each other
- so need to signal somehow
- Or one just goes ahead + does it + hopes others follow suit
 - sometimes 1 firm in an industry
 - sometimes different firms from time to time
- banks do this w/ the prime rate

Dominate Firm

- when one large firm has a major share of the market
- it sets the price to maximize its profits

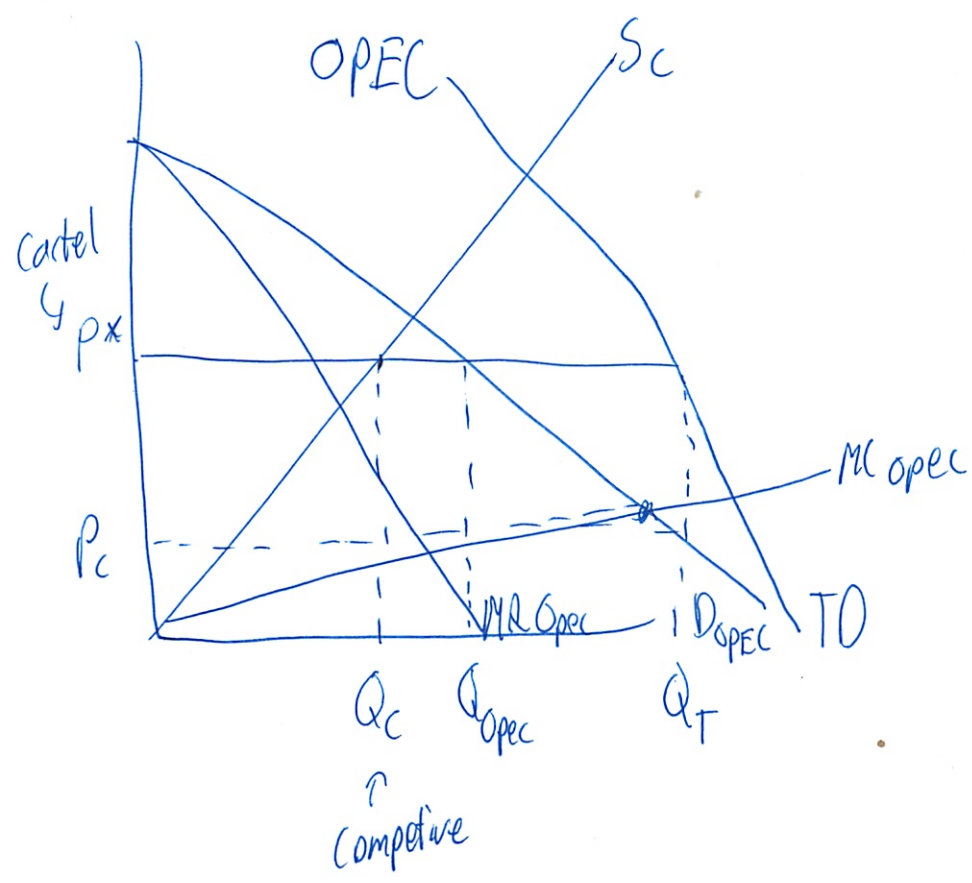
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then other firms act as price followers
but dominate firm must still account for other firms to maximize profits

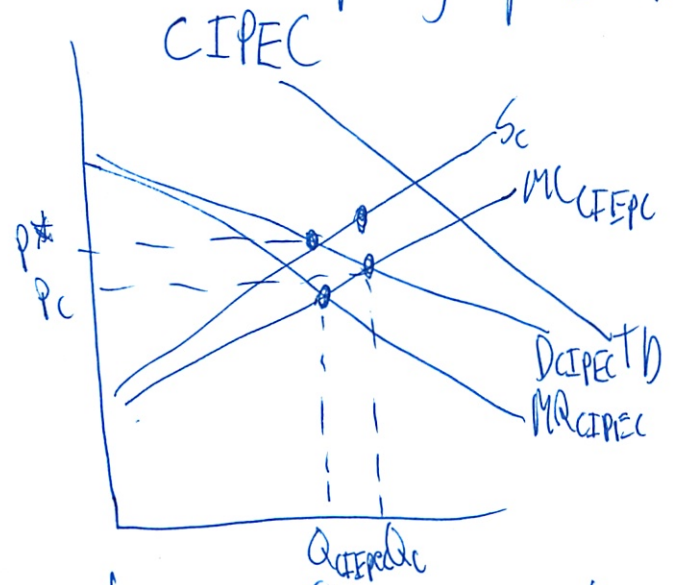
12.6 Cartels

- explicit agreement on price + output levels
- most not all firms in market
- if price inelastic, can drive prices up
- (like a Monopoly)
- illegal in domestic US
- many cartels have failed
 - agreeing on demand curves hard
 - may have diff cost curves
 - may have diff objectives
- always possibility to cheat
 - + undermine long-term cartel profits
- * Only works when demand curve is inelastic
- cartels must assume what non-participants will do

(11)



demand for OPEC oil fairly inelastic
this is for short/intermediate term
OPEC lost pricing power in long term



demand for copper is much more elastic
other producers can easily expand ~~consumpti~~ production
so cartel failed

Chap 13 Game Theory + Competitive Strategy

Reading

4/14

look deeper into strategic concerns

13.1 Gaming + Strategic Conditions

game - where players must make strategic decisions

payoffs - the chosen outcome
/actual

- profits for biz
- extra leftover CS for consumers

strategy - rule or planning option

optimal strategy - strategy that maximizes her expected payoff

players are rational

- in real life maybe not
 - may not think through all aspects
- at first will assume perfect info

Noncooperative vs Cooperative Games

↑
no binding agreements
like last chap
can spark price war

↑ can collude, set binding contracts

can benefit if two firms joint develop tech
they could not on their own

also note they are diff in contracting possibility

(2)

* the most important thing in either game is to know your opponent's POV and know their likely response
- in real life this might not happen

(I like their \$ bill game)

Given some behavioral assumption → can determine best strategy

Often depends how long the game will be played

13.2 Dominant Strategy

- need to determine the rational behavior of each player
- but ~~need~~ some depend on what competitors do
- So we are interested in dominant strategy - optimal
* no matter what competitor does → *
- (like prisoner's dilemma last chap)
- outcome = equilibrium in dominant strategy
(this is just Nash equilibrium, right?) - no see p3
- but not every game has a dominant strategy for both players
- so other player looks at what his dominant strategy is and then does the best outcome to that

③ 13.3 Nash Equilibrium Revisited

- Nash equilibrium - more general
(ok that is my answer)
- * each player is doing the best it can given the action of its opponents
- * given the decision of its competitor, each firm is satisfied it is doing the best thing possible
 - so no incentive to change

Comparison

Dominant I am doing the best I can, no matter what you do.
You're doing the best you can, no matter what I do.

Nash I'm doing the best I can given what you're doing
You're doing the best you can, no matter given what I'm doing

- dominant strategy equilibrium is a special case of Nash equilibrium
- can be no, or several Nash equilibriums

Remember Nash if no one wants to change

- like their product choice example

does not just have to be the 4 box matrix

- beach location example

④ Maximin Strategies

- maximizes the minimum gain that can be earned
- conservative, not profit maximizing strategy
- if unsure if other firm is rational
- dominant strategies are maximin strategies
- can also assign probabilities to each action + then try to maximize its expected payoffs

$$\text{So for } A: \pi_{\text{investing}} = P(B \text{ will invest}) \cdot \pi_{\substack{A \text{ invest} \\ B \text{ invest}}} + P(B \text{ won't invest}) \cdot \pi_{\substack{A \text{ invest} \\ B \text{ no invest}}}$$

what is larger $\left. \begin{array}{l} \text{C} \\ \text{D} \end{array} \right\} \pi_{\text{no invest}} = P(B \text{ will invest}) \cdot \pi_{\substack{A \text{ no inv} \\ B \text{ inv}}} + P(B \text{ no inv}) \cdot \pi_{\substack{A \text{ no} \\ B \text{ no}}}$

depends on the probabilities!

Mixed Strategies

- all games so far players make a specific choice/action = pure strategy
- but this is not optimal in all games
- * One player would always want to change strategies
- * players must make random choices among 2 or more ~~choices~~ possible actions, based on sets of chosen possibilities

5

- in matching penny example the only fair way is to flip a coin - if you use any other strategy the other player could observe and ~~then~~ then anticipate and counter
- this is the only Nash equilibrium (where no one else wants to change)
- when allow mixed strategies every game has at least 1 equilibrium
- becomes weird in firms - firms may not think other person is setting prices randomly

Games can have both pure + mixed strategies

- battle of sexes game
 - could do conventional/pure - neither will change knowing other
 - or pick a location at random (independently)
 - but will lead to a lower $E[]$
- (need to do to confirm in my mind)
- so will do pure strategy



⑥ 13.4 Repeated Games

in real life must make pricing decisions every so often
(every qv or so)

firms can study competitors + get a reputation

Tit for Tat

- best strategy againsts ^{almost} all other strategies

- immediately follow competitor both up + down

- the qv is will it induce my competitor to behave cooperatively (~~and~~ ^{aha} charge high price)

↻ Repeated Game

The cooperative thing is high price

(assuming competitor knows using a tit for tat strategy)

The long term loss of profits is not worth it
for short term gain

Even if only ~~an~~ small possibility I'm playing tit for tat

Finite # of Games

(ok this is what is in lecture)

play tit-for-tat, but undercut in last month

- since competitor can not retaliate

- so other guy cuts price in month $n-2$, repeat \rightarrow all low prices all the time

A

In Practice

- no way out if competitor has slightest doubt about my rationality
- so could think I am playing tit-for-tat "blindly"
 - aka not know about last month
- even the possibility of that has ^{him} ~~me~~ maintain high price until end
- may be wrong, but it is about expected values
- so w/ probability of cheating - long term high prices is better
- many managers don't know how long they will be playing
 - so like ~~an~~ long ∞ long game

failure freq when

- many firms
- rapidly shifting demand
- " " " costs
- unsure what cooperation price is
 - since each have diff demand + cost estimates

So water meters stable
 airlines very unstable



⑧ 13.5 Sequential Games

- Players move in turn
 - like Stackelberg model
 - easier to analyze
 - Can build decision tree - called the extensive form of a game
 - work backwards from the end
 - Clear advantage to moving 1st
-

13.6 Threats, Commitments, + Credibility

- how decide who goes 1st?
- What actions can a Firm take to gain advantage in a marketplace?
 - how can it get its competitors to do stuff
- these actions are called strategic moves
 - "one that influences the other person's choice in a manner favorable to one's self, by affected the other persons' expectation of one's self will behave,"
 - "One constrains the partner's choice by constraining one's own behavior"
- Seems paradoxical - but is not

9

There is a very incentive to be first

Can announce intention

But other will just announce louder to discourage ~~the~~ other firm

A firm needs to commit to production

- large ad campaign
- send ~~a~~ (an) material invoice
- can't threaten → see below (won't believe)

Empty Threats

(their example was bad)

Will assume to follow payoff matrix, no matter what

Commitment + Credibility

Sometimes firms can make threats creditable

if once intention announced - other firm has to go along

Would not make sense otherwise

Must make threat visible + irrevocably reducing some of its own payoffs in the matrix → constraining its own choices

Only when other company can see ~~that~~ what your best choice is, will it know you will do that + follow accordingly

(know notes must be confusing w/o copying specific examples)

(10)

They are very risky

Need to really know the industry and everyone's payoff matrices

reputation important

~~Having~~ an irrational reputation can actually \uparrow profits ~~&~~

- threat can be credible w/o future action

- You never ~~will~~ know what that crazy manager will do

Bargaining strategy

- outcome can depend on ability of either side to make a strategic move that alters each side's relative bargaining power

- can link the 2 payoff matrices

- on bidding for house how to prove you will walk away

- need to ~~not~~ reduce your flexibility

- ie get 200,000 mortgage and can't get more

Walmart's strategy: open in small towns that can only support
1 discount chain

Then when competitors realized - became preemption game



11) 13.7 Entry Deterrence

- barriers to entry are important source of monopoly power + profits
* incumbent firms must convince new entrants will be unprofitable
so you ^{could} undercut your price to ~~also~~ deter their entry
but once entry has occurred best to keep prices high

need to show credible threat you will go into warfare w/ new firm before they enter

if you irrevocably lower profits

- by preemptively building new plant

- you would actually do better in a war (?? what)

Or irrational: gain reputation of driving all competitors out
(I could call that rational)

Oh yeah book acknowledges may actually be the rational strategy

entrants know ~~an~~ incumbents will try to appear ready for a price war

- like nuclear deterrence

- actually was irrational

- but how likely is your opponent to be irrational?

- "the rationality of irrationality"

(12)

Strategic Trade Policy + International Competition

even now

- preemptive investment can give a company an investment
- it's the same for countries
- if lots of econ. of scale can force out other competitors
- for small subsidy can bring in lots of foreign \$
- but if trade war - all countries could be worse off

Even in market w/ 2 companies can be tough competition
* esp b/c if one gets a slight cost advantage it can capture the market (demand very elastic b/w companies)

So both companies must go all out in R+D

Can't cooperate - too hard to observe compliance

Can't fit for fit - periods too long

13.8 Auctions

- usually for differentiated / 1-off products
- or Google style much easier than 1 on 1 bargaining
- encourage competition among bidders - helps seller
- helpful for items whose value fluctuates over time

(13) Formats

1. English/oral auction - seller solicits bids
all bids open
bidding stops when no one pays more
2. Dutch auction - price starts high, slowly decreases
first person who snaps it up gets it
3. Sealed-bid auction - bids made simultaneously in
a sealed envelope.
 - ↳ first-price auction - highest price
 - ↳ second-price auction - 2nd price

Valuation + Information

1. Private Value - Each buyer knows his/her individual value/
reservation price. Each person's value different
2. Common value - item has approx same value to all bidders
bidders estimate slightly different values however

Private Value -

Payoffs:
winner: reservation price - price paid
loser: 0

(14)

almost same

English + 2nd price sealed - bidding truthfully is dominant strategy

- you pay value of 2nd highest bidder
- try to maximize payoff (the difference $WTP - price$)
- always stop at reservation price (you start getting into \ominus ~~the~~ payoffs)

1st price sealed - players alter bidding strategy

- bidding strategy more complex
- winning bidder not willing to pay more than 2nd bidder + \$0.01
- revenue more complex too

Common Value Auction

- ie a jar of pennies

- must estimate its value
- but same value to everyone

- winner is the one w/ largest positive error

- winner is usually the overly optimistic one = winners' curse

- may be worse off than the others

- must reduce your bid by an error = to expected error of winning bidder

- so the more precise, the less you discount

- can use st. dev to estimate

- oil companies use when bidding on a well

- more in sealed bid auctions

(5) Maximizing Auction Revenue

if you are the seller

1. In private value want as many bidders as possible
2. ~~Use~~ in common value - open/English gets greater expected revenue + decreases uncertainty about winners curse, which ↑ bidding
3. In private value signal good is valuable, set min bid what you are willing to keep

Bidding + Collusion

buyers can ↑ buying power by ↓ # of bidders or ↓ freq. of bidding
can be w/ buying groups

Sometimes illegal

or incentive to cheat

but in repeated auctions - can cheat

ebay is none of the formats mentioned above

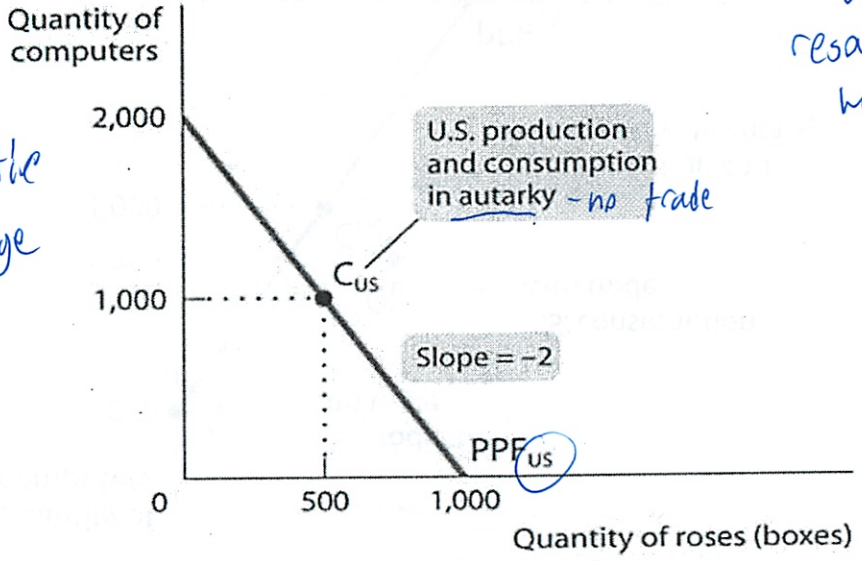
11/15

Figure 19-1: Production possibility frontier

comparitive advantage

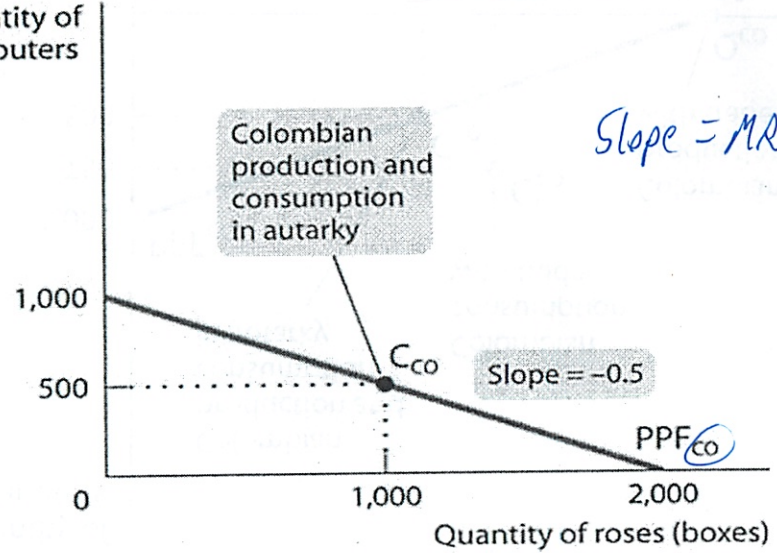
Lecture 19

(a) U.S. Production Possibility Frontier



Given the resources we have

(b) Colombian Production Possibility Frontier

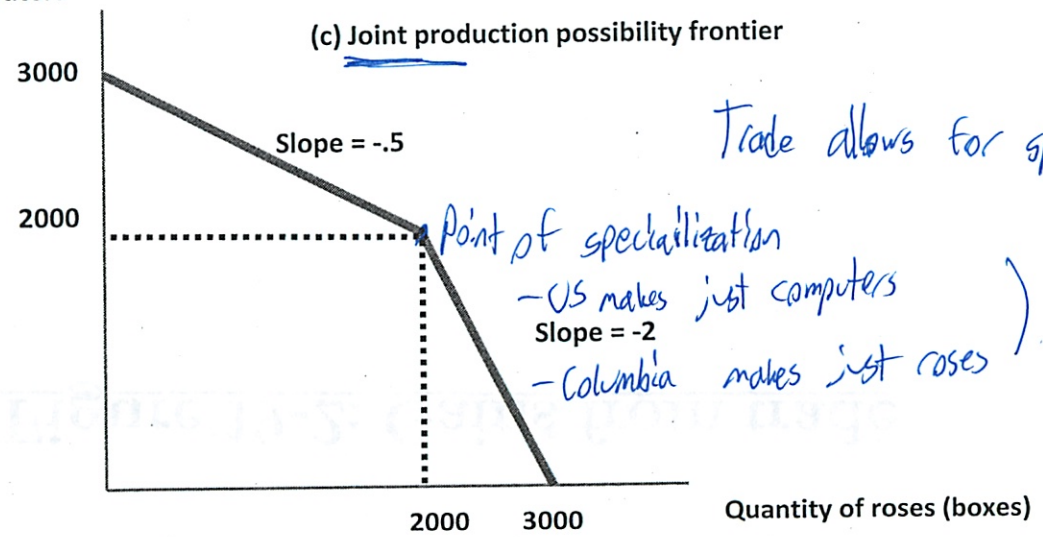


Slope = MRTS

comparitive advantage

Quantity of computers

(c) Joint production possibility frontier



Trade allows for specialization

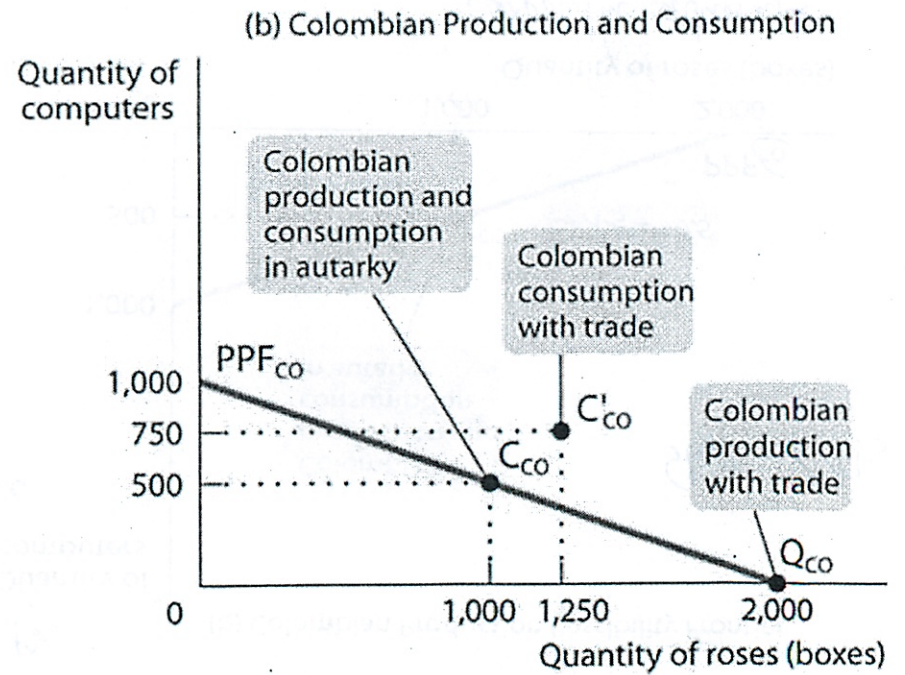
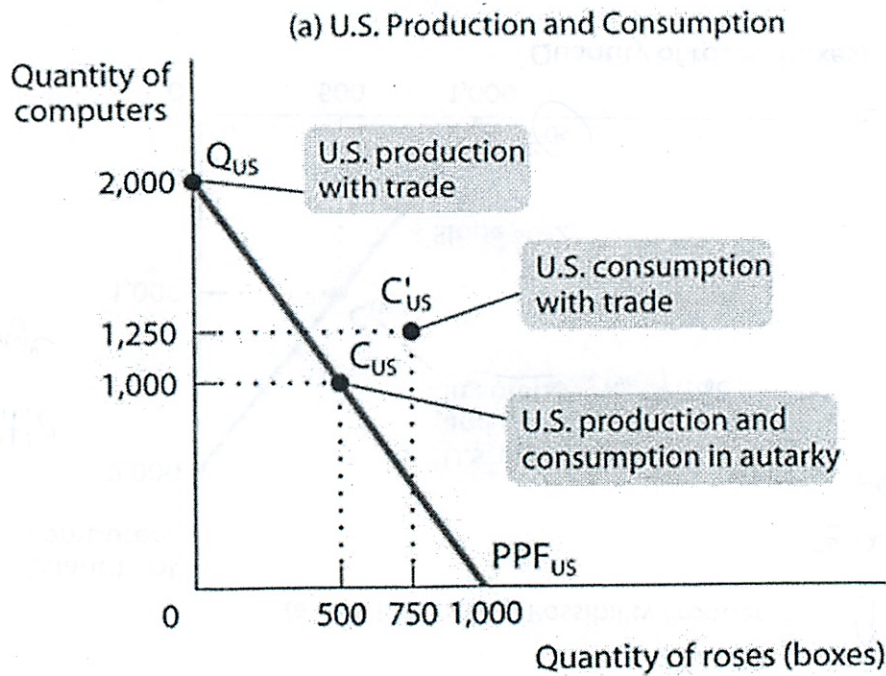
Point of specialization
- US makes just computers
- Colombia makes just roses

point ~~at~~ further out than what each country could do on own

before talked about in the context of a firm

can also do for firms

Figure 19-2: Gains from trade



* both sets of consumers are better off

↓ different way to
↓ spell

Figure 19-3: Producer and consumer surplus in autarchy

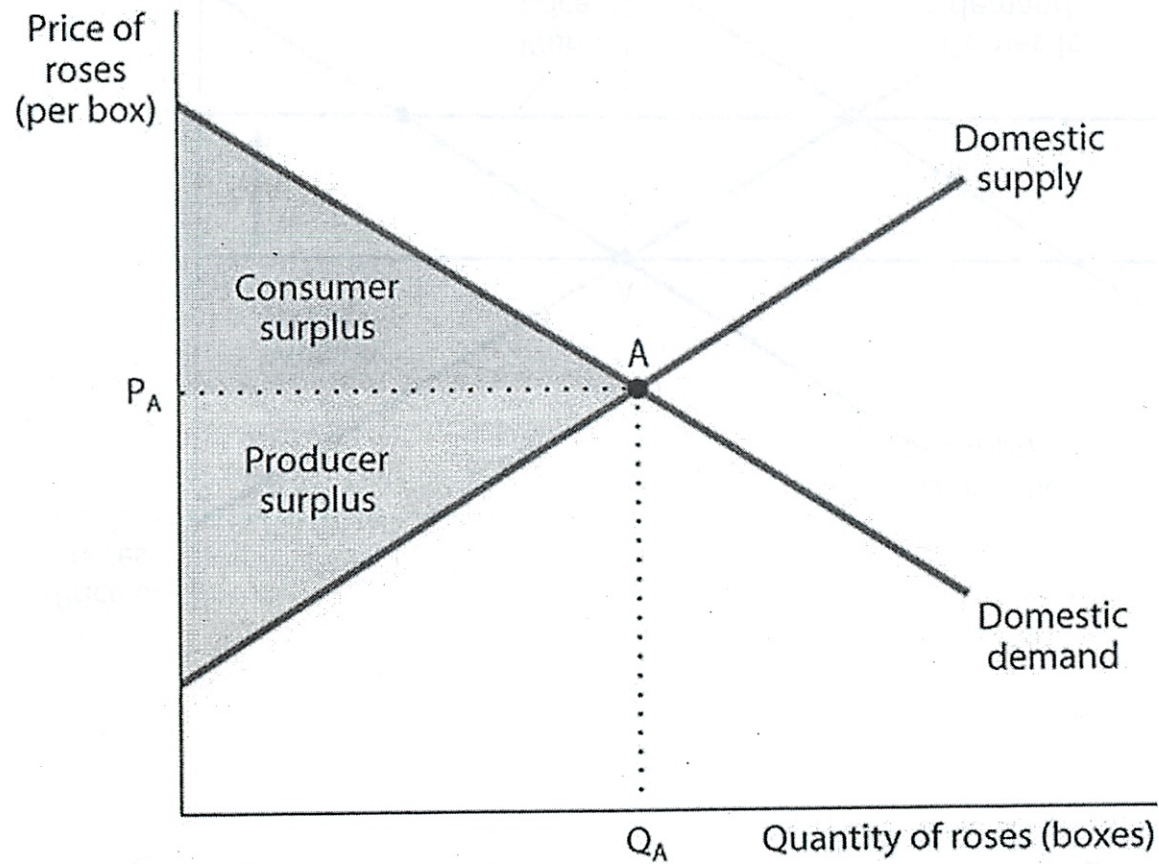
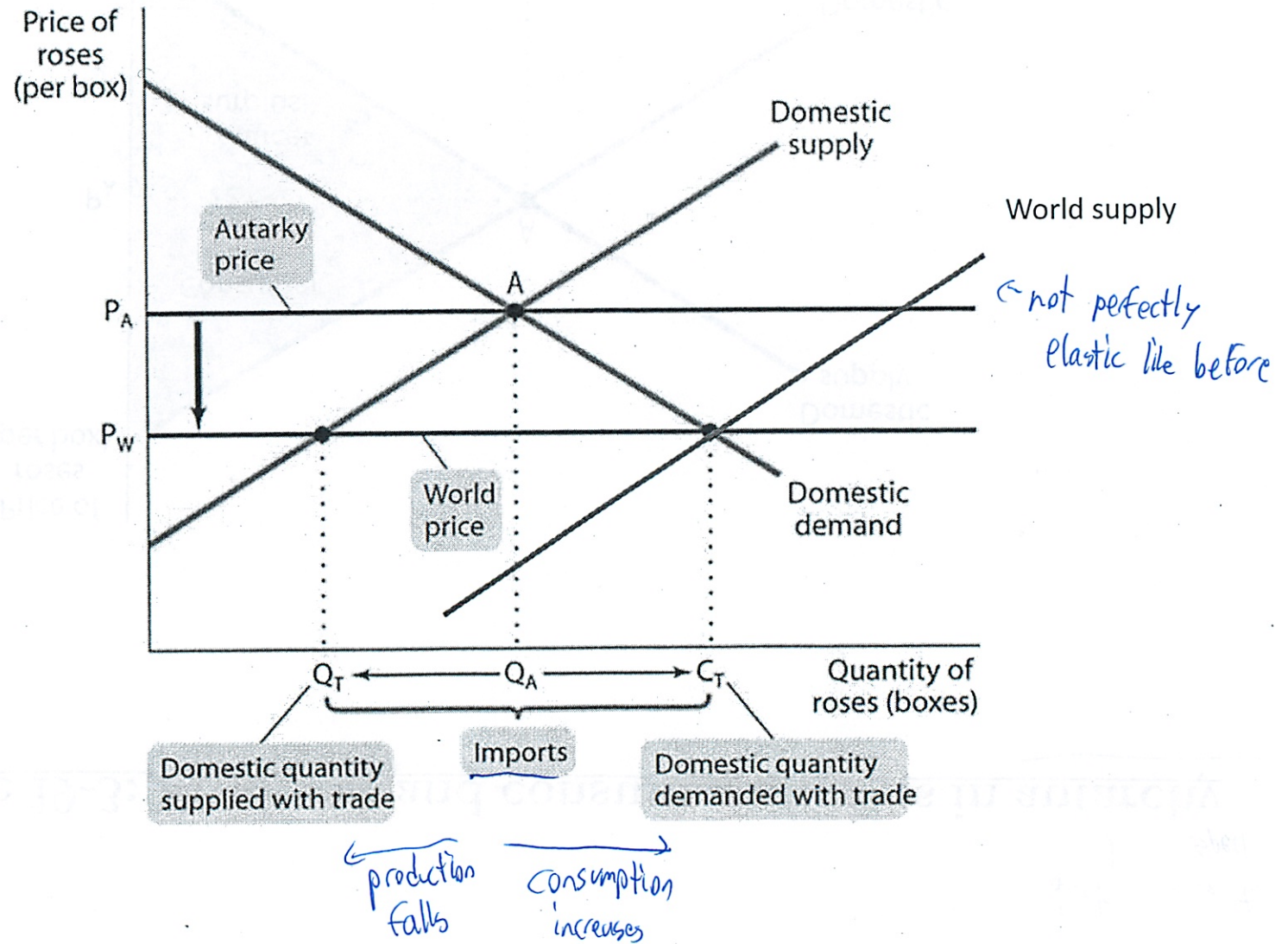
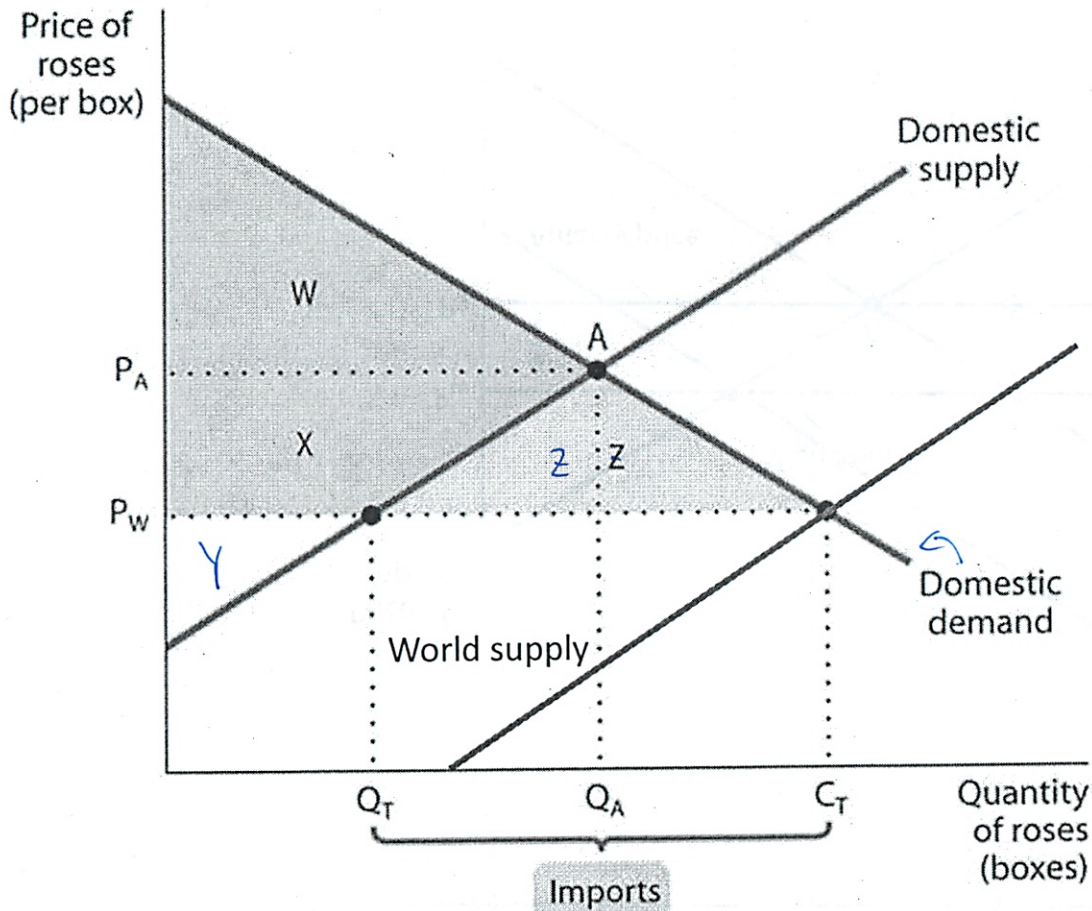


Figure 19-4: Rose market with imports



Welfare implications

Figure 19-5: The impact of imports on consumer and producer surplus



	Changes in surplus	
	Gain	Loss
Consumer surplus	$X + Z$	
Producer surplus		$-X$
Change in total surplus	$+Z$	

win more
lose some
so win

Overall welfare

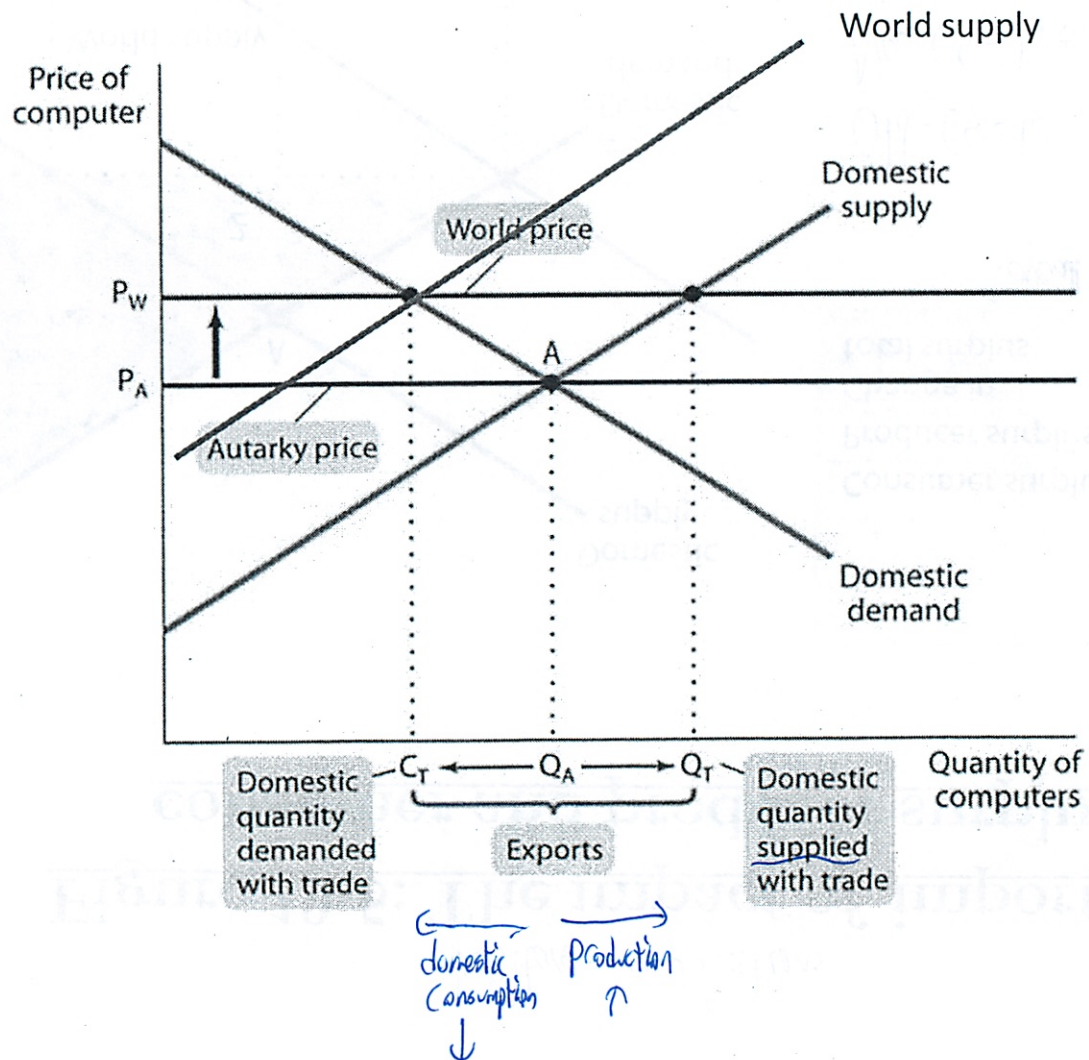
Old CS = W

New CS = $W + X + Z$

Old PS = $X + Y$

New PS = Y

Figure 19-6: World price and exports

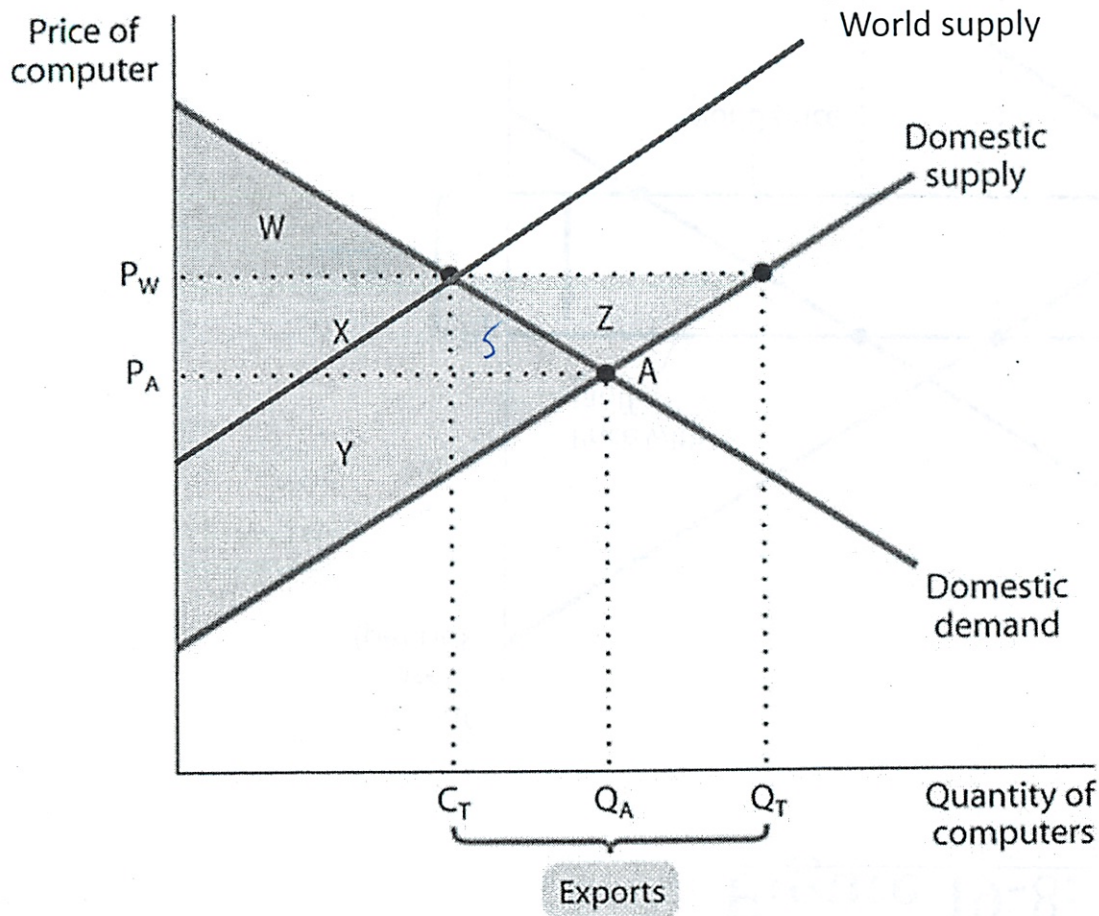


because of exports, ~~the~~ price higher since we are competing w/ rest of world for computers
 domestic quantity ↓

Consumers are worse off

Slide Wrong — Prof will send update

Figure 19-7: The impact of exports on consumer and producer surplus



	Changes in surplus	
	Gain	Loss
Consumer surplus		- X
Producer surplus	X + Z Y	
Change in total surplus	+ Z Y	

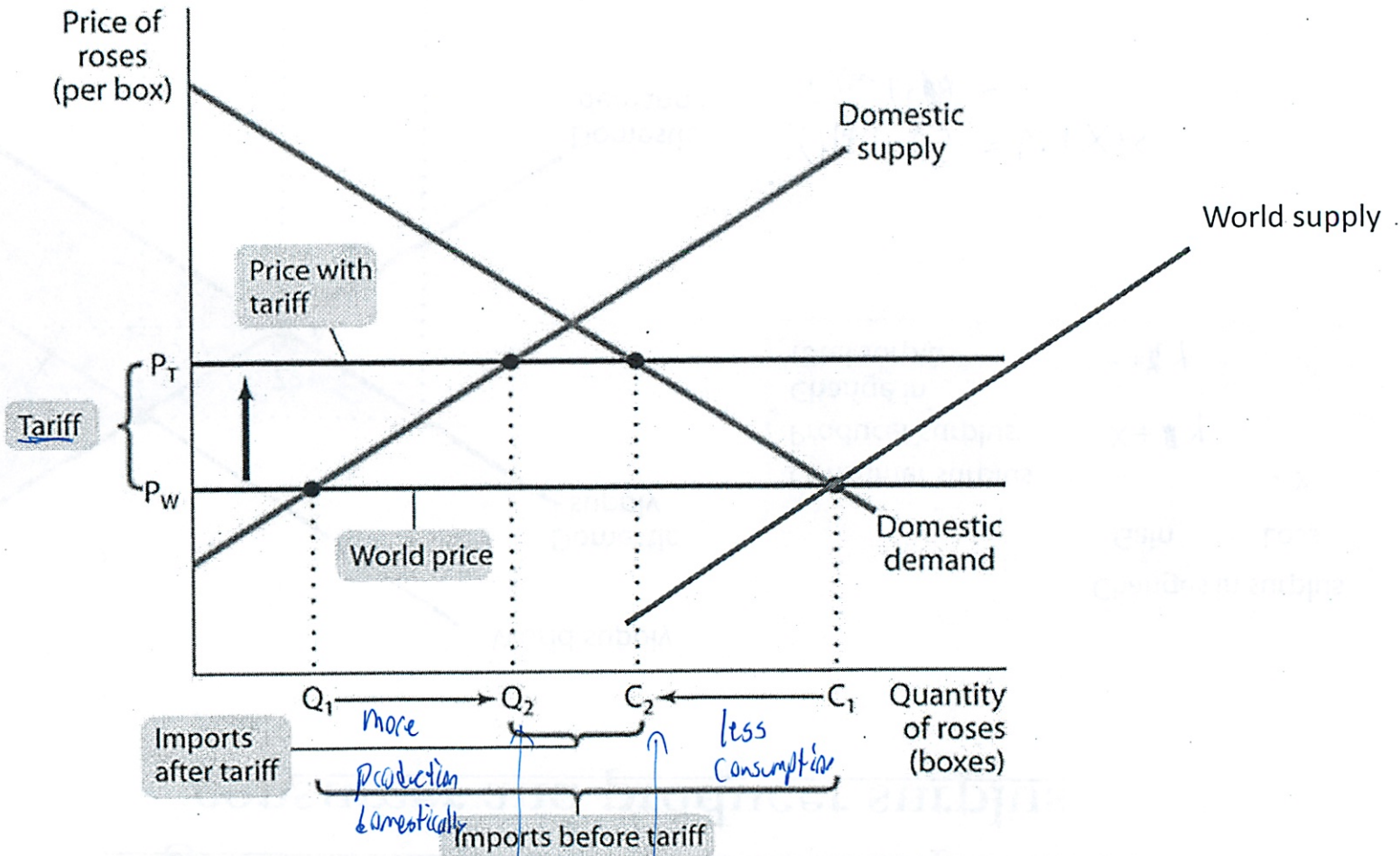
Old CS = W + X + S

New CS =

Old PS =

New PS =

Figure 19-8: Tariff



Imports after tariff

Imports before tariff

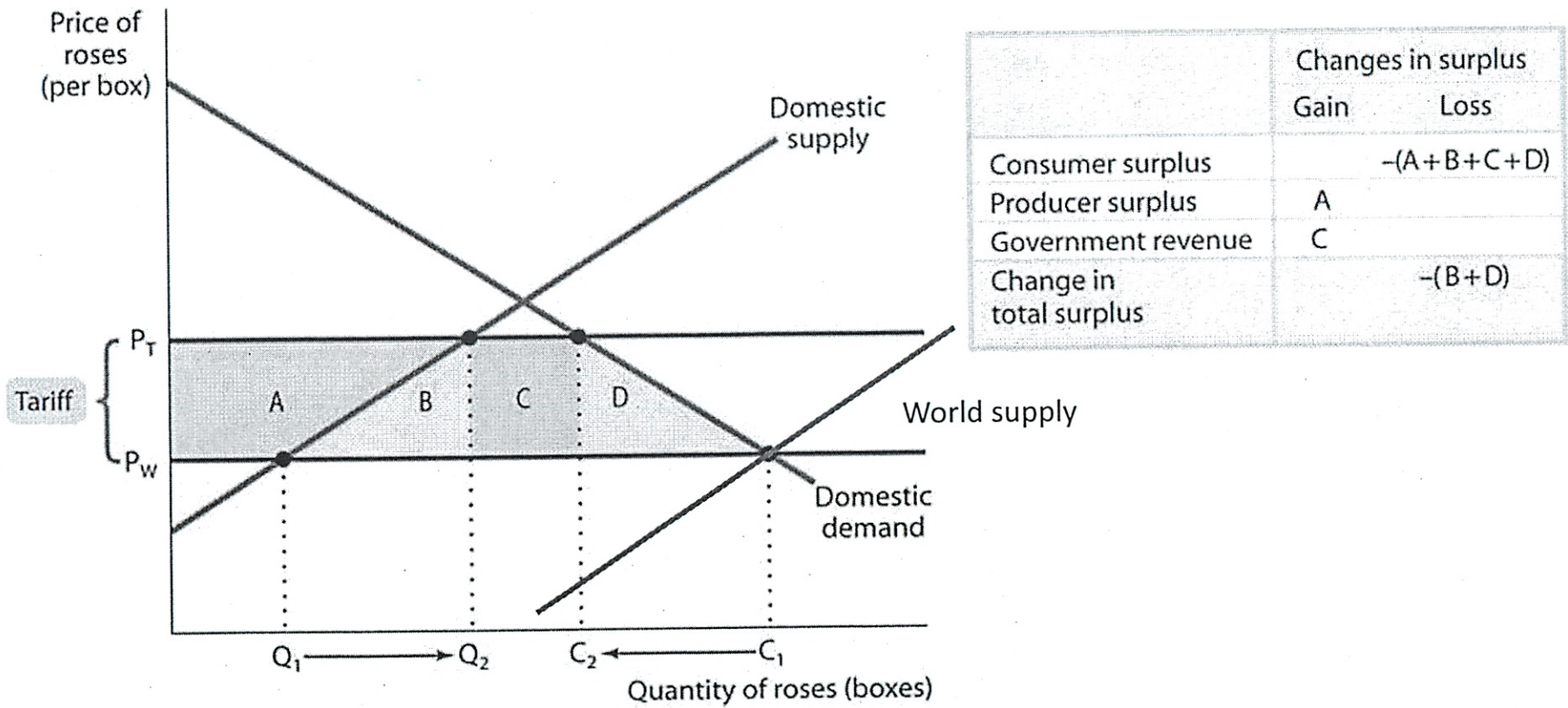
production domestically

less consumption

at the higher price consumers only want this many

domestic produces make this man

Figure 19-9: Impact of tariff on surplus



Lecture 19 International Trade

11/15

we are heading into real world

International trade

- have a whole class on this

We used to grow Valentines Roses in large greenhouses

Now we buy from Columbia

Good: cheap roses

Bad: people in US laid off

) the international trade debate

$$\text{trade deficit} = \text{Exports} - \text{imports}$$

$\$160 \text{ billion}$ $\$200 \text{ billion}$
month month

Is that a problem?

Not necessarily

Due to comparitive advantage

Start w/ 2 good, 2 cantry model

US = good at computers

Columbia = good at roses

figure 19-1

) has a comparative advantage in relatively good at producing

Trade allows for specialization

Figure 19-2

* both countries are better off
- its magic

②

If countries were the same - would be no gains

"Synergy" - same things for companies

- whenever comparative advantage + gains from trade

Where do comparative advantages come from?

1. Difference in Factor endowment

- Middle East has lots of oil

- Canada has lots of trees

- so produces lots of paper

- China has cheap low-skill labor

- so make clothes

- w/ specialization → cheaper

2. Technological Leadership

- better at tech

- gives yourself a comparative advantage

- can steal + compete

- argument for gov to subsidize tech development

Is trade a good thing or bad thing?

- Trade unambiguously ↑ social welfare

- figure 19-3

- figure 19-4 (already did this)

③ welfare impacts 19-5
Exports 19-6

Any form trade makes US better off in total

- but some people will be losers
- the losers are very loud to politicians

So leads to policies that limit imports

tariffs - taxes on imports

quotas - limit on # of goods sent to US

) bad to social welfare

hurt US consumers more than help US producers

19-8 figure for it

19-9 ~~imp~~ " " impact on social welfare

restrictions on trade lowers welfare

this is just static analysis

Colombia may retaliate w/ a tariff

- would be even worse for US

- "trade war"

- things can be even worse

- free trade prevents this

- producers as a class like free trade

(9)

but different producers lobby the different way

lets say we care about rest of world

- allowing trade w/ Colombia improves their lives better off

1. Simple welfare gain

2. Dynamic " "

3. Increasing other countries' gain if we care

NAFTA - demolished trade barriers US + Canada + Mexico

- was a mess

- very hard

- ~~country~~ some producers in every country upset

Gov bad at taxing the winners and compensating the losers

- life is better off than autarky,

- " " " " " tariff

- when you tax all sweatshirts

These things true if true factor endowment

But what if other country has advantage b/c they don't do human rights + environmental protection

For US gains are the same

From a world point of view - may not be a good thing

5

So need to think about broader society
- not just DWL triangle

As part of NAFTA we got new work + environmental
'conditions in Mexico

Became virtuous cycle

Free trade vs fair trade

↑
always
good

↑
can be used
to make it better

Lecture 20

1/17

Uncertainty - need to weigh opp costs vs benefits
- but don't know benefits/opp costs

need to model decision under uncertainty

Uncertainty gets more important as ya get older

Expected Utility theory

Prob of outcome • value of outcome

$$Pr(L) \cdot V(L) + Pr(W) \cdot V(W)$$

fair bet \rightarrow expected bet of \$0

Why do people not want to take a more than fair bet

1. Individuals don't use expected value \rightarrow use ~~an~~ expected utility.

\hookrightarrow Utility functions have diminishing marginal utility

- joy of winning is less than pain of losing

$$E[U] = Pr(L) \cdot V(L) + Pr(W) \cdot V(W)$$

- if its $\sqrt{-\#}$ than just 0

- compare to utility w/o gamble

- figure 20-1

People willing to pay to avoid gamble

②

This is the power of risk aversion + uncertainty

Alternatives

1. $(U = , | C)$ linear utility function

- people would actually take this gamble

- (for the experiment on 20-1)

- people are risk neutral

- only care about expected value

- utility ~~is~~ linear w/ \$

- figure 20-2

2. $U = C^2/100$ increasing marginal utility

- risk loving

- 20-3

- huge increase in utility from the gamble

- happier to win \$ than lose a \$ ← confirm

- weird - have not worked w/ before

- would actually take unfair bets for them

- a $E[U]$ that is \ominus

3. Utility function can be closer to linear in some parts

- like for small bets

- even a risk adverse person, would ~~take~~ ^{bet} a small value relative to their resources

3

What determines

- you risk aversion
- size of gamble

Real World Examples

1. Insurance - allows you to avoid taking gambles

25 year old → totally healthy

$Y = \$40,000$ income

1% chance hit by car → \$30^a bill
per year

$U = \sqrt{C}$ risk adverse

So $E[\$] = \300 / year

↳ would be even in an ∞ amt of years

"actuarially fair" insurance - price = prob (bad outcome) * cost (bad income)

So like break-even insurance

utility

$$E[U_{\text{no insurance}}] = .01 \cdot \sqrt{\underset{\substack{\uparrow \\ \text{income -} \\ \text{car crash}}}{\$30,000}} + .99 \sqrt{40,000} = 199$$

How much would be willing to pay

4

Well how much would I pay so same utility level

$$E[V_{ins}] = .01 \sqrt{40000 - 30000 + 30000 - x} + .99 \sqrt{40000 - x}$$

↑
insurance premium

=

then set = to 199 same utility

$$x = \$399 \text{ WTP}$$

Even though value is \$300
because you are risk adverse

The $399 - 300 = \$99$ is a risk premium

Risk neutral's person risk premium = 0

That's why insurance companies make so much money

2. Lotto

$$\text{The } E[\text{lotto ticket } \$1] = .50$$

- incredibly unfair bet

- but very popular

5

Why?

1. People are risk loving - but they buy insurance

2. People could alternate risk loving / risk adverse

- risk loving on ~~large~~ gambles
- risk adverse on ~~small~~ gambles

gambles that leave you
w/ large small wealth

- figure 20-4

- but people play small lotto

3. Entertainment - Thrill of winning

- the optimal thing is to play lots of small lotto

- but very expensive entertainment

4. Loss aversion - like #2

- people really risk adverse on downside

- ~~not~~ winning is a small bump in happiness \rightarrow risk neutral

- losing anything is annoying

but people playing lotto ~~do~~ don't think playing large gambles

5. People are stupid

- a tax on the stupid

or

It matters a lot for gov which it is
if its #3 \rightarrow its a win-win

6

But if its #5 - its a bad idea

- on the other hand → voluntary tax

- politicians never say anything bad about lotto

4/17

Lecture 20

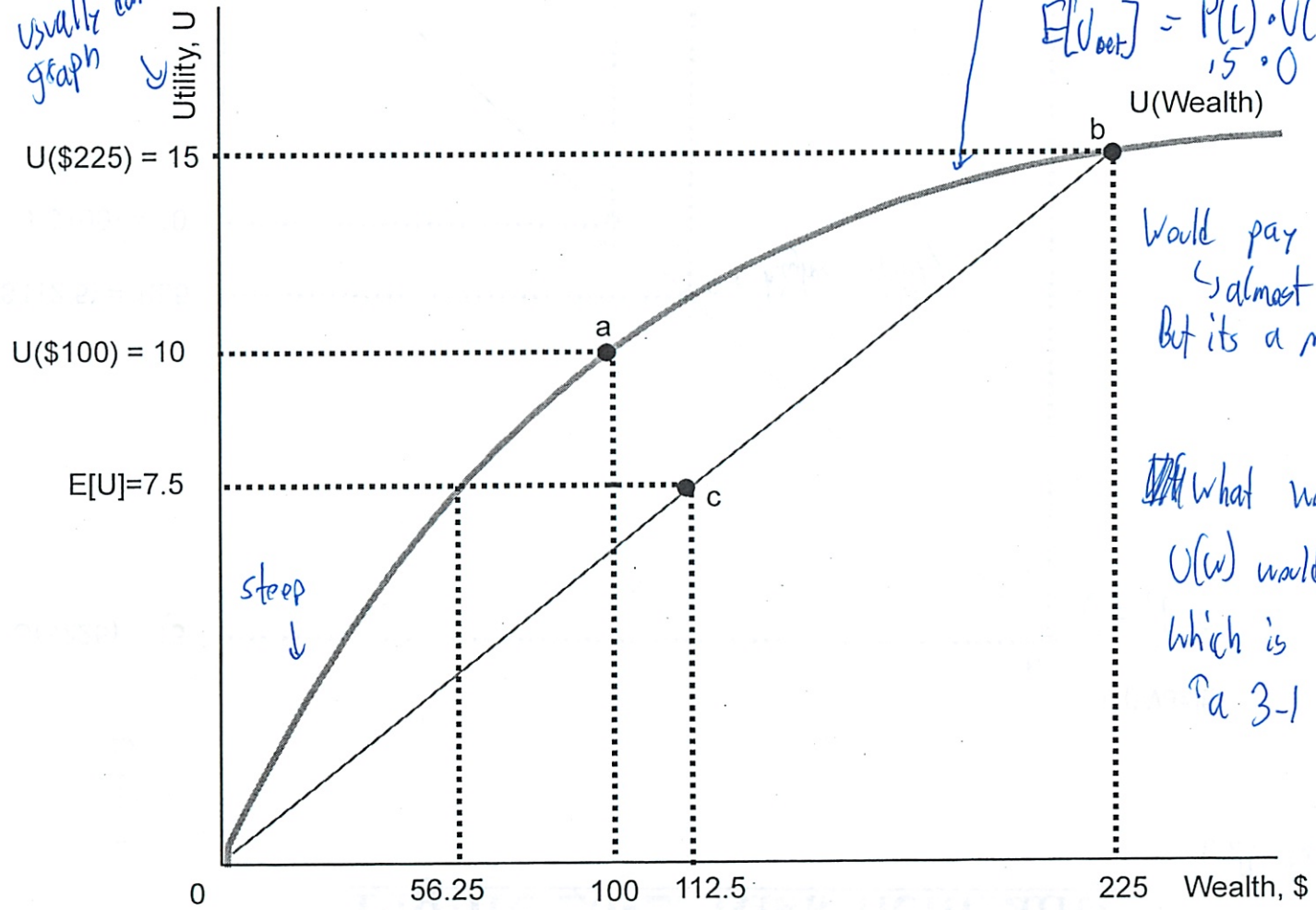
Figure 20-1: Risk aversion

$$E[\$] = P(L)V(L) + P(W)V(W)$$

$$= .5 \cdot 100 + .5 \cdot 125$$

$$= \$112.5$$

usually don't graph



$$U = \sqrt{C}$$

$$C = 100 \quad \text{so } U = 10 \text{ w/o game } \& \text{ less}$$

$$E[U_{\text{bet}}] = P(L) \cdot U(L) + P(W) \cdot U(W) = 7.5$$

$$= .5 \cdot 0 + .5 \cdot 15$$

Would pay \$43.75 to avoid bet
 ↳ almost half wealth
 But it's a more than fair bet

What would bet need to be
 $U(W)$ would need = 20
 which is \$300
 ↳ a 3-1 payoff needed just to play

Figure 20-2: Risk neutrality

will take any fair bet

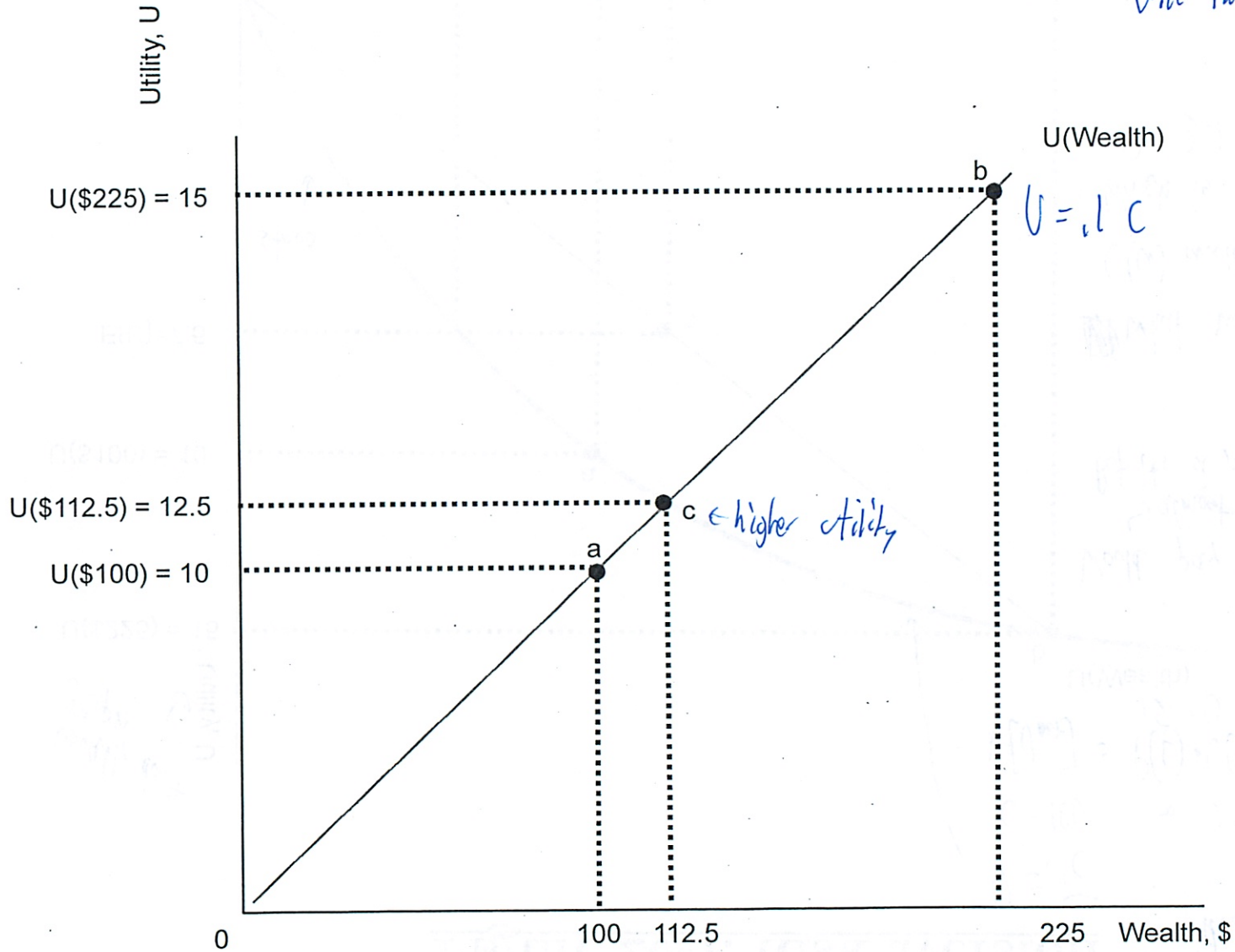


Figure 20-3: Risk loving

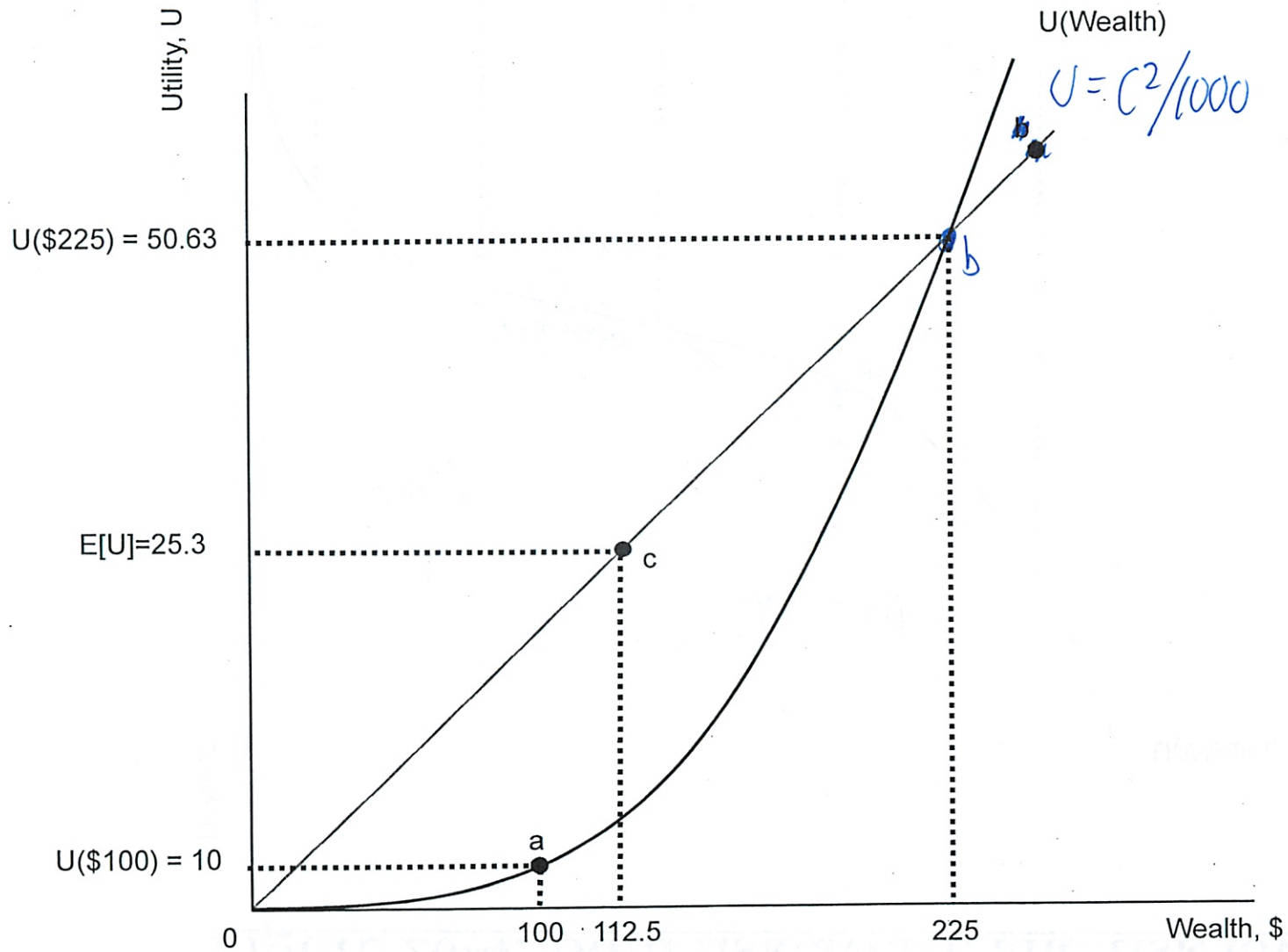
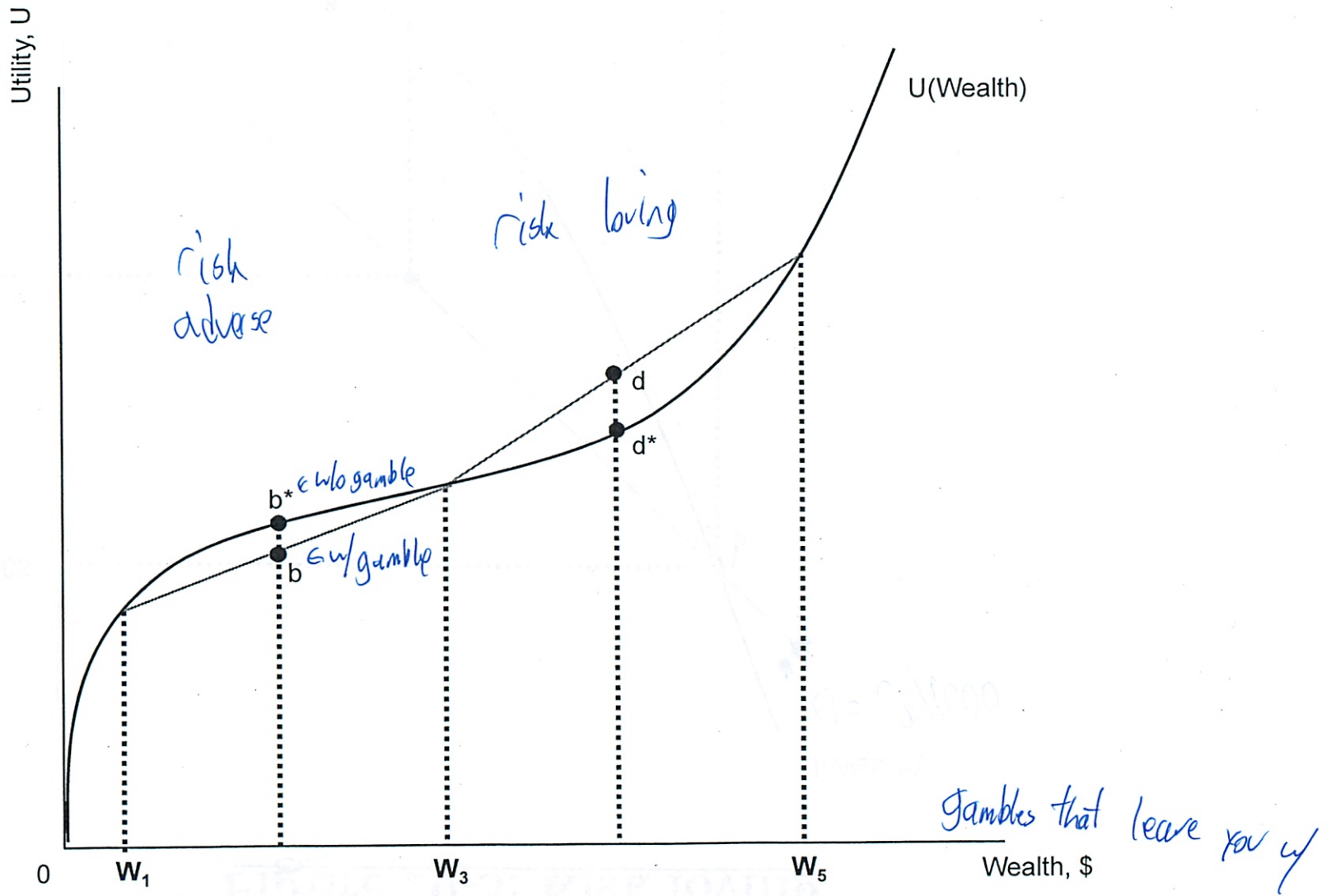


Figure 20-4: Both risk averse and risk loving



AC = MC

~~only works on constant marginal cost~~

LR = long run competitive model - but firm specific
when all firms are identical

Only LR or constant MC

no demand info - in LR \Rightarrow firm price + firm output just depends on this

MR = MC

When have market demand \rightarrow # of firms

always hold ~~for~~
need some demand info

When no long run - does not
give you more info
only constant MC

When is it?

SP ($MC = P$
 $MC = MR$) firm
LR ($AC = MC$) market

77

1. R+D and effects of gov borrowing

- Pharma company is considering whether to invest in R+D
- \$100 million/year for 10 years
- \$1.5 billion worth in 11th year
- Or \$10 million ↑ in profits
- 5% interest rate

a) PV of project is

in millions

end of year	0	1	2	...	10	11th year
		-100	-100	...	-100	+1500
		0.95238	0.90703	...	0.61391	0.61391
		-77.2				+920
						148 million

-S

Or summation

$$\sum_{y=1}^{10} \frac{-100}{(1+0.05)^y} + \frac{1,500}{(1+0.05)^{10}}$$

1) But how does the advertising fit into this?

- opportunity cost

But how exactly do they pay for it?

- just 1 year \$100 million - good deal
- 10 years \$100 million/each - bad deal
- forever " " - really bad year

(2)

b) Suppose the internal rate of return on the project is 5.28%, will do project?

Yes - the project's expected rate of return is greater than the interest rate, so they should borrow ~~it~~ and do this project

Advertising rate of return depends on how you interpret its cost from the wording of the p-set

③

c) Gov considering increasing gov consumption

Market for funds is

$$Q_s = i$$

funds τ interest rate

$$Q_D = 10 - i$$

If gov borrows \$1 bill'ns, will the company still do the project

$$Q_D = Q_s$$

$$10 - i = i$$

$$10 = 2i$$

$$5 = i$$

$$Q_D' = 10 - i + 1 = Q_s = i$$

$$11 - i = i$$

$$11 = 2i$$

$$5.5 = i$$

Nope, project is off the table now

As the market interest rate is now 5.5%

(4)

↓) This gov spending ↑ can hurt long run productivity because companies will make less investments in capital, which will hurt future consumption

The government by borrowing (and spending on consumption) is choosing b/w \$ today and \$ tomorrow,

Less money for tomorrow hurts long run productivity

5

2. Intertemporal consumption + savings supply

10 individuals in econ w/ following util function

$$U(C_1, C_2) = C_1 + C_2$$

$\begin{matrix} \uparrow & \uparrow \\ \text{Present} & \text{Future} \end{matrix}$

$P_1 = \$ 1$

can save at r

$P_2 = \$ 1$ ten

$T = 10$ time period 1
 0 " " 2

a) What is PV of 1 unit of future consumption

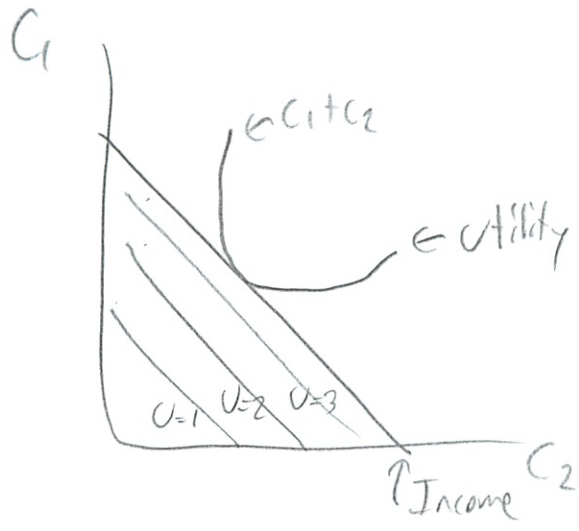
$$PV = \frac{1}{(1+r)^t} \quad \text{with } t=1 \quad = \frac{1}{1+r}$$

b) Write an expression for individuals' budget constraint in terms of today + tomorrow

$$I = P_1 C_1 + P_2 C_2$$

$$10 = 1 C_1 + \frac{1}{(1+r)} C_2$$

(6) c) How much income would individuals consume or save



$$U = X + Y$$

$$Y = U - X$$

$$C_1 = U - C_2$$

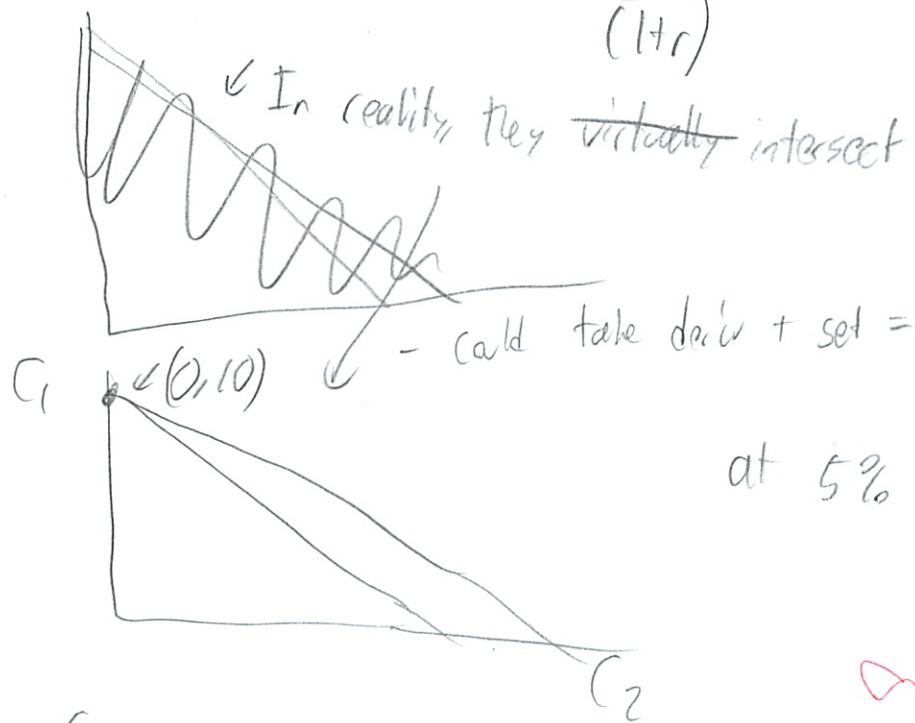
$$C_1 = 10 - \frac{C_2}{1+r}$$

$$C_2 = (10 - C_1)(1+r)$$

$$= 10 + 10r - C_1 - C_1r$$

$$10 = C_1 + \frac{C_2}{1+r}$$

$$C_1 = 10 - \frac{C_2}{(1+r)}$$



at 5% interest

Spend all your \$ today

Because \$ ~~will~~ be worth less tomorrow sitting in a mattress

OCC
Lecture
notes

$$\frac{\partial U}{\partial C_1} = 1 + r = MRS$$

$$\frac{\partial U}{\partial C_2}$$



7

d) Suppose Market Demand for funds is $Q_D = 100 - r$
 $r = \bar{i} = r$?

What is market supply of funds?

- Is this like above where $Q_S = \bar{i} = r$?
- simply the cost of \$

$$Q_D = 100 - r = Q_S = 10r$$

$$100 = 11r$$

$$r = 9.09$$

r seems very unrealistic

$$Q_S = 10(9.09) = 90.90 \text{ or } \$9.09 \text{ per person}$$

-5

$$\text{So } 10 = C_1 + \frac{C_2}{(1+0.09)}$$

Who is supplying the funds?

- the 10 people

Who they are they selling to?

But then 9.09 is rate of inflation,

so consumers are indifferent

8

3. Demand for flu shots $MC = 8$

$$P = 13 - .0005Q$$

a) In a competitive market what is equilibrium P, Q

$$R = Q \cdot P \\ = Q \cdot (13 - .0005Q)$$

$$TR = 13Q - .0005Q^2$$

$$MR = 13 - .001Q = MC = 8$$

$$13 - .001Q = 8$$

$$-.001Q = -5$$

$$Q = 5000$$

$$P = 13 - .0005(5000)$$

$$= 13 - 2.5$$

$$= 10.5$$

-3

b) However the social benefit = $13Q - .0005 \frac{Q^2}{4}$

What is socially optimal Q .

Assuming $MSB = MC$

$$MSB = 13 - \frac{.0005Q}{4}$$

$$= 13 - .00025Q$$

9

$$13 - .00025Q = 8$$

$$-.00025Q = -5$$

$$Q = 20,000$$

~~$$P = 13 - .0005(20,000)$$~~

~~$$= 13 - 200$$~~

~~$$= -187$$~~

clearly not right

$$\text{Cost} = 8Q$$

$$= 160,000$$

Quantity is much larger because of the "network" effect, that the normal inverse demand function does not apply

c) The government could buy the vaccines and distribute them, because consumers would not buy them on their own (well only $\frac{1}{8}$ of the socially optimal quantity)

2. What price should the government sell at to get this Q ? (and provide $(8-P)Q$ to producer as subsidy)

$$P = 13 - .0005(20,000)$$

$$P = 3$$

10) ...
4. Government redistribution + Social Welfare

Consider an econ w/ only 1 good: food

3 people in country: A, B, C

A has 400 units

B has 100 units

C has 16 units

$$U_i = \sqrt{f} \quad \forall A, B, C$$

$$\text{Social welfare} = U_A + U_B + U_C$$

(utilitarianism?)

a) What is current social welfare

$$S = \sqrt{400} + \sqrt{100} + \sqrt{16}$$
$$= 34$$

b) The government implements the following redistribution problem

$$A' = A - 175$$

$$B' = B + 96$$

$$\text{Spillage} = +79$$

$$S = \sqrt{400 - 175} + \sqrt{100 + 96} + \sqrt{16}$$
$$= 33$$

11
c) Or a different program

$$A' = A - 175$$

$$C' = C + 81$$

$$\text{Spoilage} = +91$$

$$S = \sqrt{400 - 175} + \sqrt{100} + \sqrt{16 + 81}$$

$$= 25 + \sqrt{97}$$

$$\approx 34,84885$$

-3

d) Compare.

Even though the government loses more food with plan 2, the utility function we chose pins utility at \sqrt{F} - so ^{marginal} social benefit trails off as F increases

$$\frac{d}{dF} \sqrt{F} = \frac{1}{2\sqrt{F}}$$



R-Set 9

1. R&D and effect of government borrowing

A pharmaceutical company is considering whether to invest in the research and development of a new drug. It will incur a cost of \$100 million starting in this year for 10 years, and it will get a patent that is worth \$1.5 billion at the beginning of the 11th year. Alternatively to the R&D project the firm can expand advertising for an already existing drug, which will increase its profits by \$10 million forever. The interest rate in the economy is 5% and is constant over time.

1. What's the present value of the project? Write an expression for the net present value?

$PV = \frac{1500}{1.05^{10}} \cdot 10^6 = \text{dollars}$. When considering whether to invest in the project or not the firm has to take into account the full opportunity cost of not investing, which amounts to an annual outlay of \$100 million for conducting the R&D plus the forgone increase in profits of \$10 million per year. Hence, $NPV = -100 \cdot (1 + \frac{1}{1.05} + \frac{1}{1.05^2} + \dots + \frac{1}{1.05^9}) \cdot 10^6 - \frac{10}{0.05} \cdot 10^6 + \frac{1500}{1.05^{10}} \cdot 10^6$

2. Suppose that the internal rate of return on the project is 5.28%. Will the project be undertaken? Why?

Since the IRR of the project is higher than the interest rate in the economy, the project will be undertaken.

3. The government is considering increasing government consumption. Suppose that the market supply of funds is given by $Q_S = i$, where Q_S is funds supplied per year (in billion) and i is the interest rate. Market demand for funds is given by $Q_D = 10 - i$. The government is considering permanently increasing annual borrowing by \$1 billion. Will the project get undertaken now? Why?

By increasing borrowing the government shifts out the market demand for funds by \$1 billion. Hence, the new equilibrium interest rate will be given by $Q_S = Q_D + 1$ or $i = 5.5\%$. Hence, the IRR now is lower than the interest rate in the economy and the project will not get undertaken.

4. Given your results in part (c) discuss why a fiscal expansion could hurt productivity growth in the long run.

A fiscal expansion leads to an increase in the equilibrium interest rate in the economy due to increased demand for funds. This decreases private investment of any kind, in particular investment in R&D as, for example, happens with the project in part (c). Since productivity growth depends on R&D investment, lower R&D investment would hurt growth.

2. Intertemporal consumption and savings supply

Suppose that there are only 10 individuals in the economy each with the following utility function over present and future consumption:

$$U(c_1, c_2) = c_1 + c_2$$

where c_1 is consumption today, and c_2 is consumption tomorrow. Buying 1 unit of consumption today costs \$1 today and buying 1 unit of consumption tomorrow costs \$1 tomorrow. All individuals have income of \$10 dollars today and no income tomorrow (they are retired tomorrow) but they can save at the market interest rate $r \geq 0$.

1. What is the price today of one unit of consumption tomorrow? Why?

Given an interest rate of r in order to enjoy a unit of consumption tomorrow, an individual has to save $\frac{1}{1+r}$ dollars of their income today. Hence today's price of a unit of consumption tomorrow is $p = \frac{1}{1+r}$.

2. Write an expression for an individual's budget constraint in terms of today's and tomorrow's consumption expenditure.

The budget constraint will be:

$$c_1 + \frac{1}{1+r}c_2 = 10$$

3. How much of his income would an individual consume and how much would they save given the interest rate of r ?

We have to solve the utility maximization problem:

$$U(c_1, c_2) = c_1 + c_2$$

s.t.

$$c_1 + \frac{1}{1+r}c_2 = 10$$

Note that in the context of intertemporal consumption what is known as the marginal rate of substitution is referred to as the rate of time preferences.

Given the linear preferences, we have that as long as $r > 0$, then $c_1 = 0$ and $\frac{1}{1+r}c_2 = 10$ or $c_2 = 10(1+r)$. For $r = 0$, any combination of c_1 and c_2 such that $c_1 + c_2 = 10$ is optimal.

4. Suppose that the market demand for funds is given by $Q_D = 100 - i$. What is the market supply for funds? What is the equilibrium interest rate that clears the capital market? What is aggregate consumption at that interest rate?

Given the optimal consumption/saving decision of an individual, we have the following individual supply curve

$$q_S = \begin{cases} 10 & \text{if } r > 0 \\ [0, 10] & \text{if } r = 0 \end{cases}$$

Hence, the market supply of 10 individuals is

$$Q_S = \begin{cases} 100 & \text{if } r > 0 \\ [0, 100] & \text{if } r = 0 \end{cases}$$

Given the market demand, the equilibrium interest rate that clears the capital market is $i = 0$ with equilibrium demand of $Q_D = 100$. Aggregate consumption is then 0.

14.01 Problem Set 9

3. (15 points) Demand for flu shots

The demand for flu shots this season is given by: $P = 13 - 0.0005Q$. The marginal cost of a flu shot is \$8.

a) (5 points) In a competitive market, what are the equilibrium price and quantity of flu shots?

Set price equal to the (private) marginal cost to get: $P = 13 - 0.0005Q = 8$, so $P = 8$ and $Q = 10,000$.

b) (5 points) The social benefit of flu shots is $SB = 13Q - 0.0005\frac{Q^2}{4}$. What is the socially optimal quantity in the market? Compare your result here to the quantity in part a) Explain any differences you see.

The social benefit is defined to include any private benefits as well here. The social marginal benefit from flu shots is $MSB = 13 - 0.00025Q$. Set $MSB = MC$ to find the socially optimal price and quantity of flu shots. $13 - 0.00025Q = 8$, $0.00025Q = 5$, $Q = 20,000$ and from the demand $P = 3$.

c) (5 points) What government policies could be implemented to achieve the social optimum in this case?

There are different ways to achieve the socially optimal number of flu shots. The government could subsidize flu shots by \$5 each, so the effective price of a flu shot becomes $8 - 5 = 3$. Since at this effective price there is demand for 20000 flu shots, the socially optimal level of immunization is achieved. The government could alternatively require 20000 people to get the shot by passing an appropriate law. This works well if we happen to have 20000 (or fewer) people in the society, but if there are more than 20000 people it is not clear which 20000 should be mandated to get the shot.

4. (29 points) Government Redistribution and Social Welfare

Consider an economy with only one good, food. There are three people in the economy, A, B and C . A has 400 units of food, B has 100 units and C has only 16 units. All have the same utility, $U_i = \sqrt{f}$ for $i = A, B, C$. The social welfare function for this society is the sum of the utilities of the three individuals.

a) (6 points) If each agent simply consumes his own endowment, what is the utility level for A, B and C ? Find the social welfare level.

Utilities are respectively $U_A = 20$, $U_B = 10$, $U_C = 4$. Welfare is $W = 34$.

b) (8 points) The government decides to redistribute food more equally, so it takes 175 units from A and gives them to B . However, the government spoils 79 of these units in transportation, so B ultimately gets only 96 units of food. What is each person's utility level now? Find the social welfare level in this case.

$U_A = 15$, $U_B = 14$, $U_C = 4$, $W = 33$.

c) (8 points) Assume now that the government considers a different redistribution scheme. Starting with the

original endowments, the government takes 175 units from A. This time it wishes to give them to C, but in transportation it destroys 91 units, so C only gets 84 of these extra units. What is each persons utility level now? Find the social welfare level in this case.

$$U_A = 15, U_B = 10, U_C = 10, W = 35.$$

d) (7 points) Compare parts b) and c) in terms of social welfare. Note that the government is more wasteful in c) and explain your result.

Since the marginal utility of food is decreasing in f , in order to increase welfare it is better to transfer food from the richest to the poorest. Hence, even if there is more waste in transferring resources from A to C than from A to B, when such a difference in waste is relative small, then welfare increases more when food is transferred to those that have a higher marginal value for it.

Last Recitation

12/3

Review Session 6-8pm 12/9 TBA

1. Monoposy

2. P. Set 9

3. Consumption/Leisure choice
Labor Supply Decision

4. Price discrimination

PSet 8 #3

Monopsonist

Demand $L = 120 - 2w$

inverse demand $w = 60 - \frac{1}{2}L$

Supply $L = 8w$

$$w = \frac{L}{8}$$

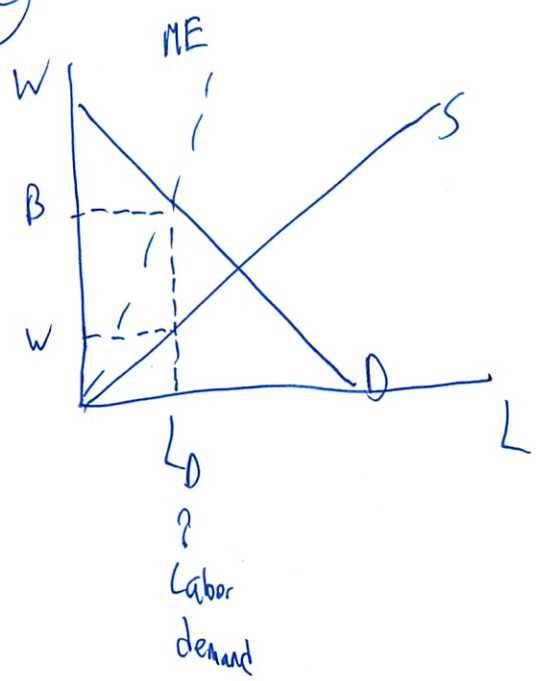
How solve for optimal demand

Find monopsonist's ME curve

$$TE(E) = w(L) + L = \frac{1}{8}L^2$$

$$ME = \frac{\Delta TE}{\Delta L} = \frac{1}{4}L$$

2



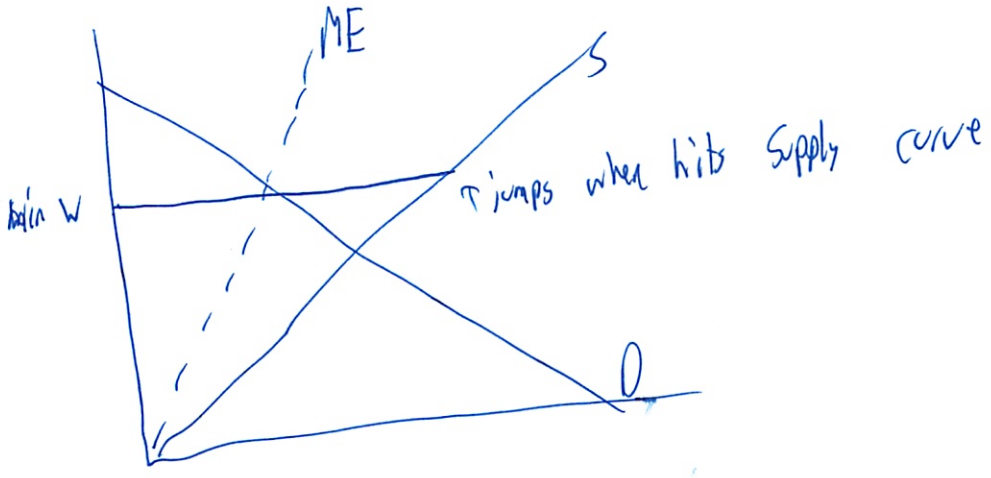
B = Benefit
 W = wage

~~W/A~~ $ME = D$

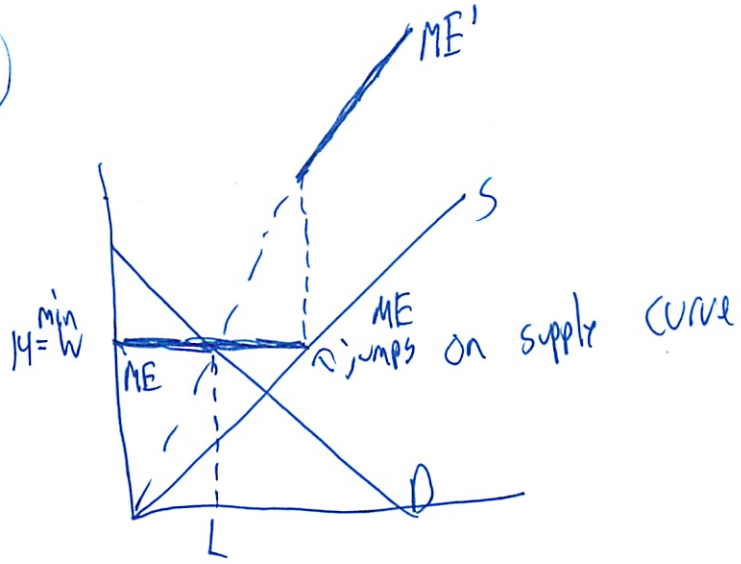
$$\frac{1}{4} L = 60 - \frac{1}{2} L$$

So $L^* = 80$
 $W = 10$

Now add a min wage



3



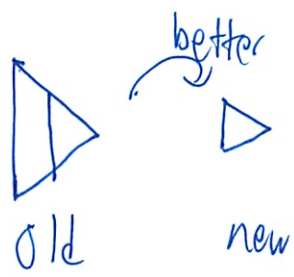
~~Here~~

with min wage

$$L_0 = 92$$

$$w = 14$$

What is DWL from normal monopsony vs min wage



When does min wage hurt?

- when set above where ME intersects D (the MB)
- will ↑ DWL

4

P-Set 4 #1

in millions

$$1. \text{ NPV} = -100 \cdot \text{today} - \frac{100}{(1+r)} - \dots - \frac{100}{(1+r)^9} + \frac{1500}{(1+r)^{10}}$$

↑
he set it

Very confusing wording

Advertising → spend nothing
- but mutually exclusive

So must discount the advertising as an opportunity cost

$$-\frac{10}{r}$$

↑
? perpetuity

Do if NPV is positive

b. internal rate

- interest rate where $\text{NPV} = 0$

(obvious - why did I not think of this?)

$$2. Q_0 = 100 - r$$

↑ exogenous = outside the model

5

Price today of unit of consumption tomorrow

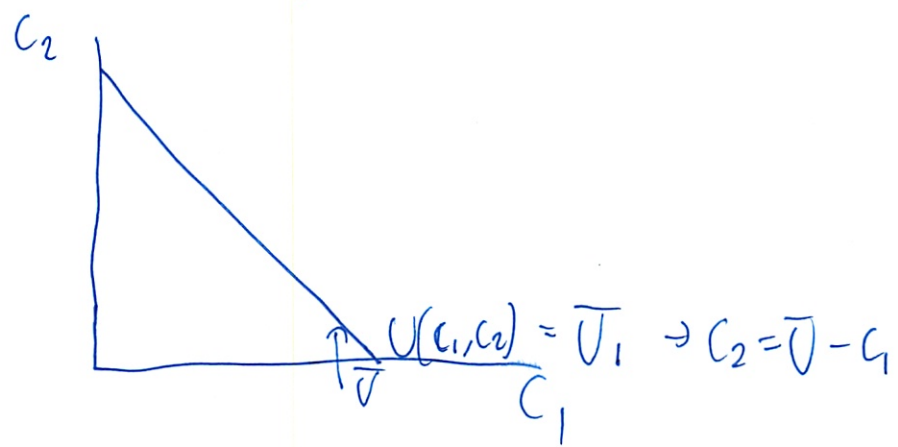
~~U(c1, c2)~~ $U(c_1, c_2) = C_1 + C_2$

a) $p = \frac{1}{1+r}$

b) $C_1 + p \cdot C_2 = 10$ \textcircled{D} had

Consumption Savings

c) How much consume/save for given r ?
Consumer optimization



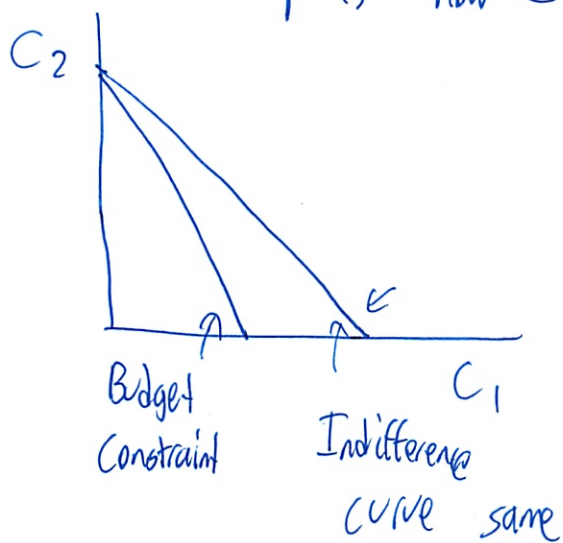
For $p=1$ budget line = indifference curve
 ↖ So totally indifferen
 ↖ $r=0$

$C_1 \in [0, 10]$
 $C_2 = 10 - C_1$

) must state because piecewise

(6) If $r > 0$

p is now < 1



~~Must~~ Corner solution \rightarrow save everything

(Did I misread my graph and say spend everything?)

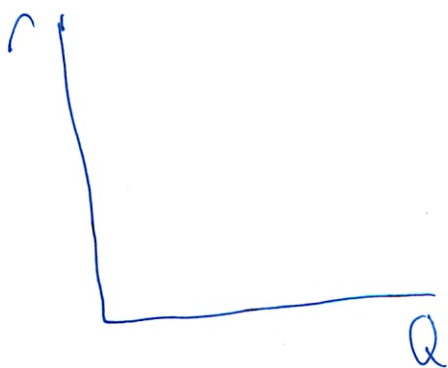
$$C_1 = 0$$

$$P^0 C_2 = 10$$

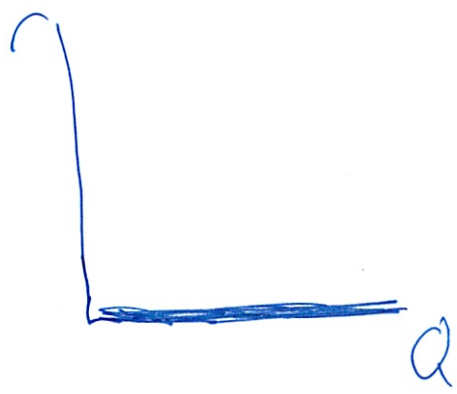
$$C_2 = (1+r) \cdot 10$$

d) $Q_D = 100 - r$

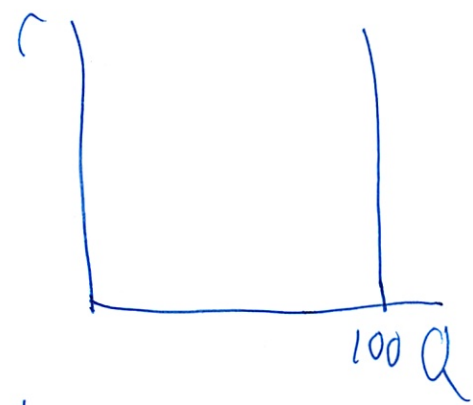
individuals supplying funds



⑦ If $r = 0$, they will be indifferent b/w consuming + saving



If ~~the~~ $r > 0$, then each would supply 10



So together
and w/ demand



So $r = 0$
 $Q_D = 100$
 $C_1 = 0$
 $C_2 = 10$ each

Also ambiguous

- more of a macro question

8 Review

Labor Leisure Choice - Consumer optimization

1. Labor supply decision

$$U(C, L) = \ln C + \ln L$$

w = wage rate

Worker has 24 hours so $L + H = 24$

Must allocate the 24 hrs b/w working + resting

H = hours worked

L = hours leisureing

~~1~~

$$C = H \cdot w$$

$$C = (24 - L)w$$

$$C + w \cdot L = 24 \cdot w$$

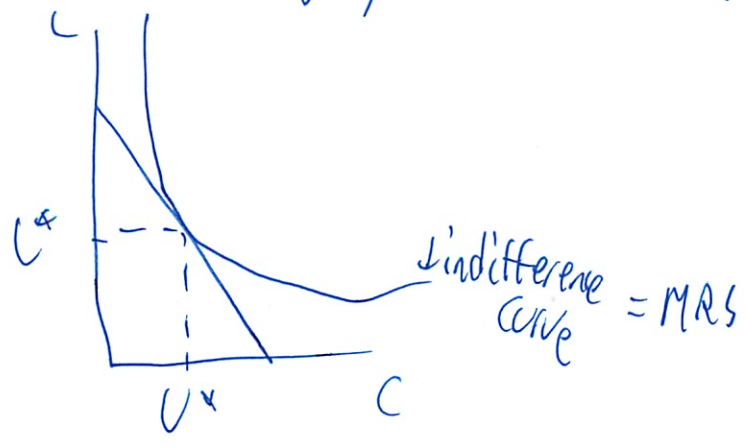
What is consumer's optimal choice?

max
 C, L utility

max
 C, L $\ln C + \ln L$ such that $C + wL = 24w$

9

Look at tangency on indifference curve



$$MRS = \frac{MU_C}{MU_L} = MRT = \frac{\frac{1}{C}}{\frac{1}{L}}$$

$$MRT = -\frac{1}{w}$$

$$MRS = MRT$$

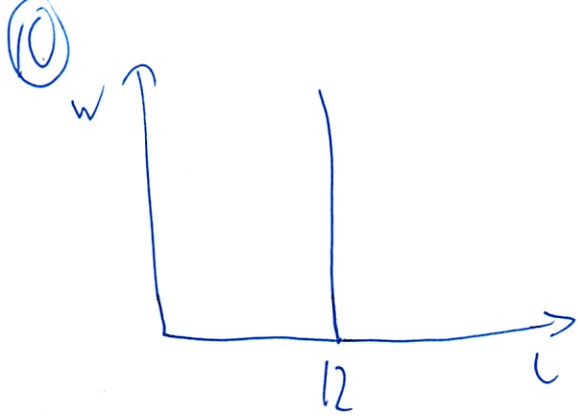
$$+\frac{\frac{1}{C}}{\frac{1}{L}} = +\frac{1}{w}$$

$$\text{So } C^* = w \cdot L^*$$

$$C^* + w \cdot L^* = 24w$$

$$L^* = 12 \quad \leftarrow \text{perfectly inelastic}$$

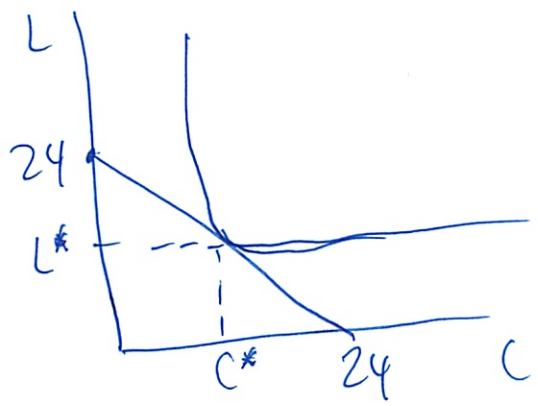
$$C^* = 12w$$



Suppose $w = 1$

So $L^* = 12$

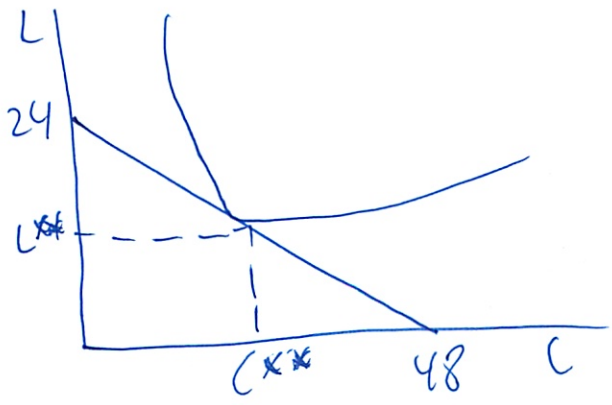
$C^* = 12$



Suppose now $w = 2$

$L^{**} = 12$

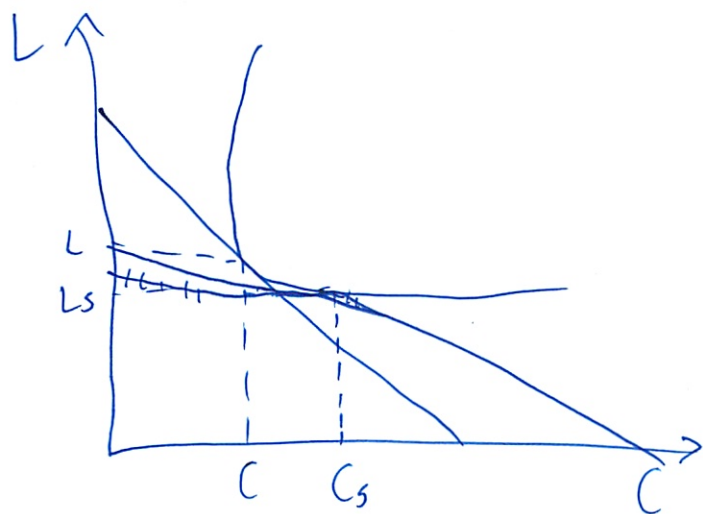
$C^{**} = 24 \leftarrow \text{\$ of consumption}$



①① Now find income + substitution effect

To find pure sub effect

- keep utility at original level
- make fictional budget constraint
 - tangent to existing indiff curve
 - but w/ new prices



Then Income effect

- all change in L offset
- as wealth \uparrow , consume more \rightarrow normal good
- not inferior since wage affects your leisure and your actual income
- not like other curves

(12) Nothing can prevent ...



So if gov ↑ labor tax

- tax rate ~~never~~ ↑

- leave demand elastic, so tax revenues simply ↑

- no laffer curve

(still confused on this)

Equity + Efficiency Part 3

12/6

95% of transfers gov makes are not income transfers

- are social insurance

- take \$ from everyone and give it to everyone

US spends \$2 trillion year on insurance

- health

- disability (tax)

- unemployment (employers pay)

← private

Private insurance exists

So why does gov provide extra \$1 trillion in insurance?

- What is the market failure that makes gov come in?

- asymmetric information

← - can lead to market failure

~~market~~ Lemons problem

- used car market

- Seller knows about it

- buyer can only visually see

+ suspicious - why is the seller selling it?

- so buyer willing to pay less

- market failure if seller not willing to accept lower price

Insurance - opposite case

- you know more about your risk than others

- insurer does not

(2)

Example

90 people \$ 0 - don't know which
10 " \$ 1000 - aka % chance happens

Find $E[\text{payout}] = \$100$
per student

So perhaps sell at \$110

- profit or cushion for uncertainty
- people may pay risk premium

But many healthy people know they will spend less

40 people \$ 0

10 people \$ 1000

$E[\text{payout}] = \$200$
per person

Now must double price - then even less people buy in

Insurance problem

- You can never win as you keep raising price
- Only the sickest people stay in
- Need dist. of healthy people

3

Possible Solution

1. Subsidize healthy people to come in

2. Mandate that everyone buy health insurance

Canada - insurance paid out of taxes

Mandate - new in US - force healthy people to buy
Something they don't want

Government provides ~~now~~ some health insurance now

- Medicare - heavily subsidized for old people

- Medicaid - means tested poor programs

Enormous cost

Disability Insurance (DI) - compensates you for not being able
to work

Workers Compensation - insurance on the job

Unemployment Insurance - replace wages if laid off

Argument is same for all - for gov to come in

All programs → moral hazard - when you insure people
against adverse risk, they have adverse insurance

You will misrepresent your state to collect it

Injured on job hard to verify
Straining back - hard to verify

4

He worked at a Doctors office that handed out workers
Comp slips all day

Depends on program

Lots of evidence ~~that~~ workers comp ~~is~~ suffers from moral hazard

- If program gets more generous, then more people should not
be injured.

- Lots of studies showing enormous ↑

~~And~~ Esp in workers comp

And health insurance \$500 billion/year

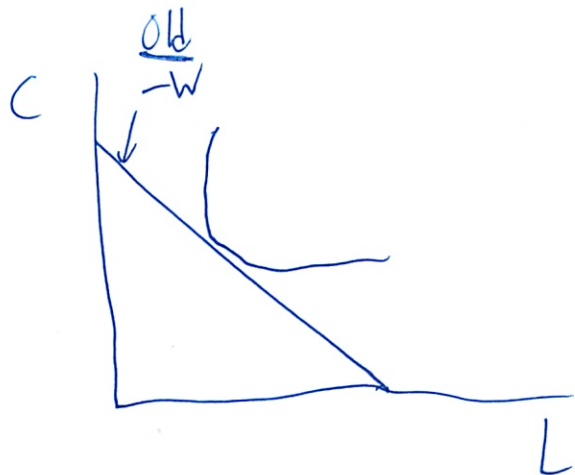
- care just used because they are insured

The Social Insurance Tradeoff

- insurance goal - desired

- but tax cost/DWL of taxation

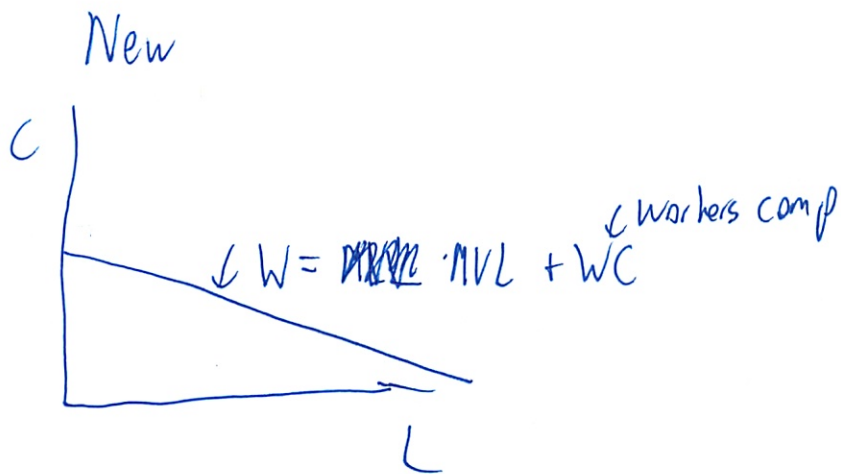
- and moral hazard - efficiency loss



the wage = MVL

marginal value of leisure

5



If WC had 100% replacement rate - would never work
efficiency loss - you are sitting at home when you could
be working

So have social insurance - but not as generous

Social Security

- largest gov program
 - Medicare will pass in 2 years
- insurance offsets income loss when you retire
- 6.2% from both you + employers
- moral hazard - make retirement more appealing
- age 62: can get ~ half your wage
- in US we recognize: can get a actuarial adjustment
- If you work one more year, you will get 7% ~~per~~ more per month
- So moral hazard pretty modest.

6

Not so in Europe

The Netherlands 90% of income at age ~~and~~ 55

- But 40% tax on work
- So benefit to retire!
- No one works (officially) at age 55

Countries are starting to recognize

France wanted to raise retirement age 60 \Rightarrow 62

Overall every one would benefit

"But people too short-sighted to recognize this

Social Security is running out of \$

- Ponzi scheme
 - Pyramid scheme
 - Asset behind scheme is trust
 - Use recent income to pay off current people
 - Social Security is a Ponzi scheme
 - Trust in gov forcing people to do this
 - We think it is unlikely it will collapse
 - Works when lots of people paying in
- Now: 8 workers for every retiree
2025: 4 " " " "

⑦

We are moving to a very aging society

In ~~next~~ 30 years program will go bankrupt

Must ~~one~~ either

- raise taxes 3.5-4%

- cut benefits

retirement age 62 \rightarrow 64

If they cut benefits it will be complicated

- Health Care
- 3 min late
- gov way over committed on health insurance
- is a market failure
- people get health insurance through companies
 - works well
 - law of large #
- does not work for ~~individuals~~ individuals
 - only sick people want to buy in
 - asymmetric info
- 18% of people (non elderly) don't have insurance
- non-group market
 - high cost
 - discrimination vs pre existing condition
 - drop people who got sick
 - clearly lead to market failure
- so we have a lot of uninsured people + rapidly rising cost
- Health Care Act
 - tries to deal w/ market failure
 - vague stab at rising costs

②

Canada - Free universal health care

- costs a lot of \$
- \$2 trillion in US

Or Mandate

- everyone buys

Law does 3 things

- 2014: individual mandate
 - but exemptions
 - ~60% of uninsured will be covered
- No longer discriminate in health ins
 - exclude people not allowed
- A whole range of subsidies (\$120 billion) to the poor
 - can't buy if you can't afford it

Don't know exactly how it will shake out

More in 14.431

Politics

- two problems
- must pay for subsidies
 - raises \$450 billion from top 5%
 - depends on social welfare
- mandate is not free either
 - a lot of people don't want to buy it

3

Are tradeoffs

Mandate enforced through tax penalty
\$ 700

Bigger problem: Costs spiraling

- moral hazard - if you insure people, will act differently

- Classic - individual precaution
- not that big a deal

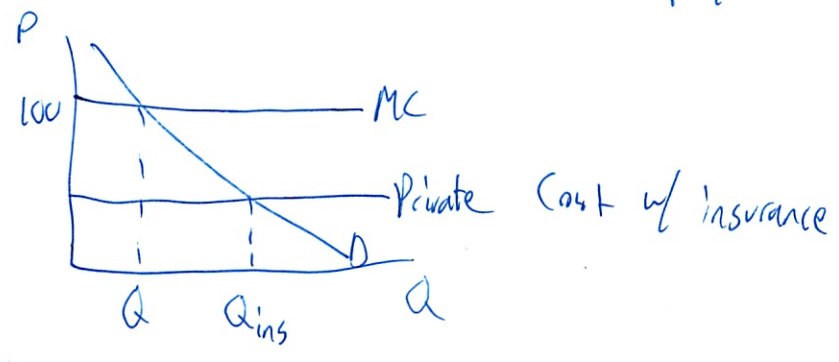
- Resource overutilization - because people insured will over use it



Uncertain what this is
- what elasticity is

RAND experiment (70s) said downward sloping

But people w/ insurance don't pay Full Cost



Leads to DWL

Private market outcome is optimal

- as long as no other market optimal

- fully informed about right level to use

4

We can tell it optimal if people used less ~~insurance~~ care

- look at their health
- totally unchanged

In America we over use health care because it is so cheap

Provider Moral Hazard

- care about making patients better
- and how much \$ ~~you~~ ^{they} make

June 9 New Yorker McCallan TX
↑↑

- where people spend largest amt on health insurance
- people are no healthier
- Not hurting people
- But not helping them

US wastes $\frac{1}{3}$ of medical spending

Very hard to fix

- people make \$ off all this
- hard to make it stop
- we don't know which is $\frac{1}{3}$ of health care that is being wasted

Medical care much better today

Info. asymmetry on what works

- we don't know this

By adding more people to system makes the moral hazard thing worse

5

How to fix?

Do more work on comparative effectiveness?

FDA only looks if effective

Not is it more effective than previous?

And esp not is it cost effective

Change patient/provider incentives

- patient: higher co-pays
higher deductibles

- provider: remove incentives to ~~higher~~ more care

- prospective reimbursement

- make doctors bear the risk

- does it go too far?

- found it does not hurt health w/ mixed system

- Medicare paying hospitals by diagnosis

- 20% drop in nights

- but no reduction in care

- bill tries to ~~and~~ set incentives

(6)

Final Exam

- cumulative
- short ans, TF w/ explanation
- longer problem
- mix of math + intuition
- hard test
 - will be times you get stuck
 - go for partial credit
 - solve for x
- core more about econ than math
- key concepts - draw on
- previous exams

-
- do course evaluations
 - do you want to do more econ?
 - lots of ~~stuff~~ courses build on this