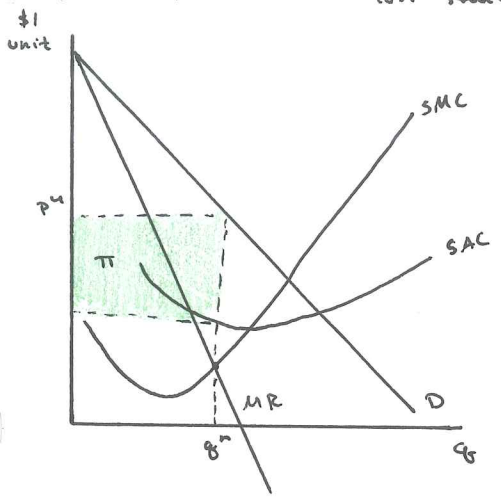
Monopoly

- Firms with market power are:
  - typically bigger
  - have some technological advantage over competitors
  - have a differentiable product
  - industry has barriers to entry

- Non-Price taking firms face a downward sloping linear demand curve. They have influence over the price, but in order to sell more, must lower the price

Graphical representation of cost structure of non-price taker



- Firms will still maximize profits by producing where $MC = MR$
- Profit is the difference between P & AC

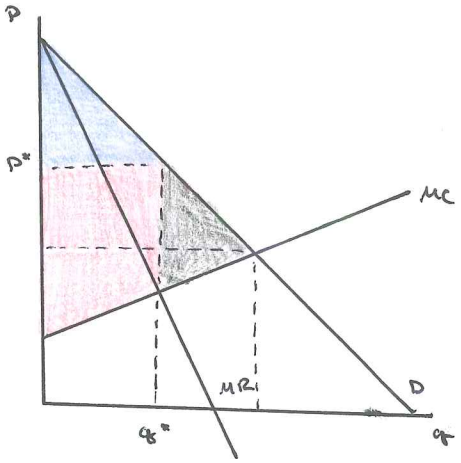
$$(P - AC)(Q) = \pi$$

- Revenue maximization occurs at the point at which $MR = 0$, this is also the quantity and price of unit-elasticity
- In order to maximum revenue and profit to occur simultaneously, $MR = MC = 0$, meaning the additional unit is free to produce

Monopoly

- Situation in which there is only one seller of a good
- Markets are unstable because of constant entry and exit of other firms
- Monopolies require sufficient barriers to entry. They can be in the form of:
  - Technical barriers to entry, such as high startup costs or massive and increasing returns to scale
  - Ownership of a natural resource
  - Legal barriers to entry, the government may create laws that ensure the availability of necessities or to encourage research, innovation, and creativity
- Downsides of monopoly include:
  - price of good is higher than at competitive equilibrium
  - quantity of good sold is less than at equilibrium
  - economy suffers because of lost efficiency

Graph: Typical form



- note that monopolists have no supply curve because supply is a function of the interaction between MR & MC, which is derived by demand
- Monopolist will produce at the profit maximizing quantity where $MR = MC$

- Competitive equilibrium occurs where $MC = D$
- Monopoly price and quantity cause decrease in efficiency, DWL creation, reduction in consumer surplus, and increase in producer surplus

Monopoly Quant and Graph Example

Demand Function: $Q = 50 - 5P$ Rearranged, $5P = 50 - Q$

$$P = 10 - \frac{Q}{5}$$

MR = Demand (P-Form) with 2x slope (half the denominator)

$$MR = 10 - \frac{Q}{2.5}$$

Cost Function: $TC = 2Q + \left(\frac{1}{15}\right)Q^2 + 30$

↑ fixed-costs (short-run situation)

$$MC = 2 + \left(\frac{1}{7.5}\right)Q$$

Profit-Maximizing Quantity and Price: Occurs when $MR = MC$

$$MR = 10 - \left(\frac{1}{2.5}\right)Q \qquad MC = 2 + \left(\frac{1}{7.5}\right)Q$$

$$10 - \left(\frac{1}{2.5}\right)Q = 2 + \left(\frac{1}{7.5}\right)Q$$

$$8 = \left(\frac{1}{2.5} + \frac{1}{7.5}\right)Q$$

$$Q = \frac{8}{\left(\frac{1}{7.5} + \frac{1}{2.5}\right)} = 15, \quad Q^m = 15$$

Price @ $Q^m = 15$, plug 15 into demand function

Demand: $P = 10 - \frac{Q}{5}$

$$P = 10 - \frac{15}{5}, \quad P = 7$$

$P^m = \$7$

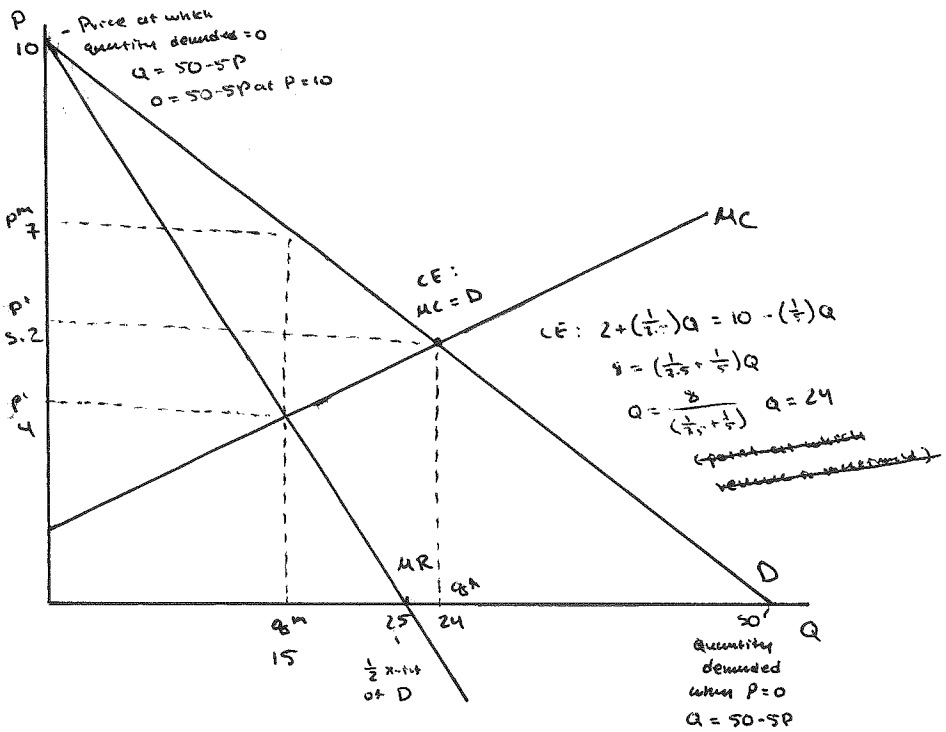
$Q^m = 15$

$P^m = \$7$

Profit: General Form: $\pi = (P - AC)q$ or $\pi = R - TC$

$$\pi = [(15)(7)] - [2(15) + \left(\frac{1}{15}\right)(15^2) + 30]$$

Full Graph:



CE: $2 + \left(\frac{1}{7.5}\right)Q = 10 - \left(\frac{1}{2.5}\right)Q$

$$8 = \left(\frac{1}{2.5} + \frac{1}{7.5}\right)Q$$

$$Q = \frac{8}{\left(\frac{1}{7.5} + \frac{1}{2.5}\right)} \quad Q = 24$$

(point at which revenue is maximized)

P^* = price of competitive equilibrium

put Q^* into demand function

$$P = 10 - \frac{24}{5}$$

$P = 5.2$

P' = the marginal revenue as well as the marginal cost at the Q^m

To find, plug Q^m into MR & MC

$$MR = 10 - \frac{Q}{2.5} \qquad MC = 2 + \left(\frac{1}{7.5}\right)Q$$

$$MR = 10 - \frac{15}{2.5} \qquad MC = 2 + \left(\frac{1}{7.5}\right)(15)$$

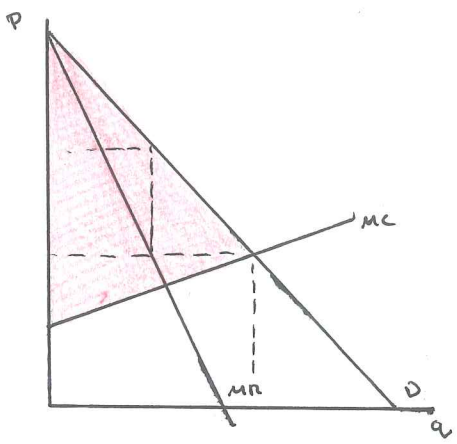
$MR = 4$ $\qquad$ $MC = 4$

* Use these measures to calculate DWL

Price Discrimination

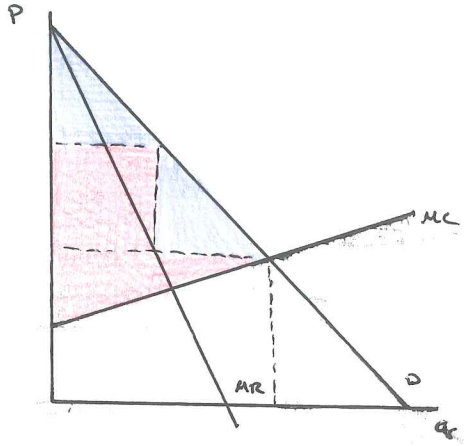
- Situation in which firm charges different consumers different prices based on their willingness to pay (individuals)
- This is difficult because:
  - It is impossible for firms to have sufficient information of every consumer's individual willingness to pay
  - Consumers have incentive to misrepresent how much willingness to pay
  - Consumers will have perception of unfairness
  - Many costs associated with charging prices
- Price discrimination results in loss of efficiency, and thus, no DWL, but increases producer surplus and decreases consumer surplus (extent dependent upon the situation)

Perfect Price Discrimination



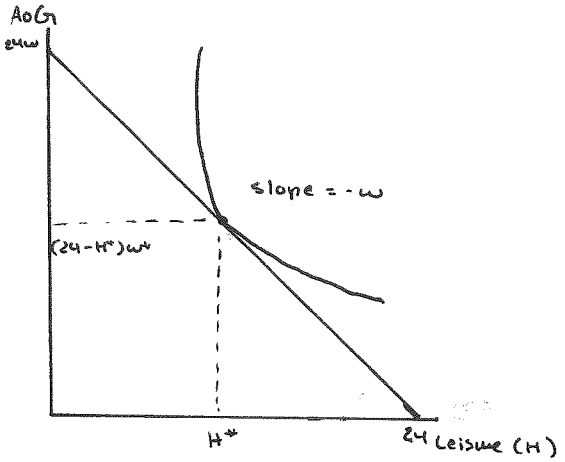
- Every consumer is charged the exact willingness to pay

Imperfect Price Discrimination



Labor Supply

Individual's Budget Constraint

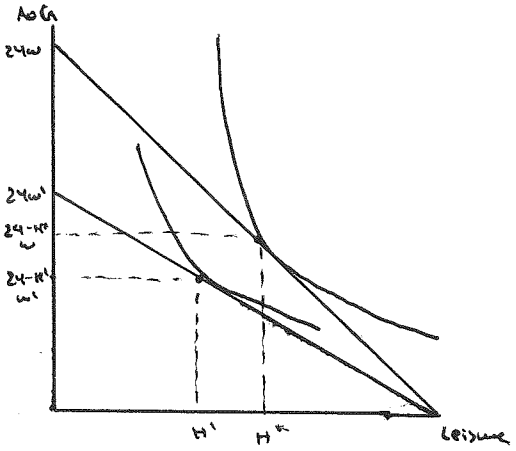


- Individuals face the tradeoff of working vs. leisure. They must choose how to allocate their time
- This tradeoff is represented through a budget constraint representing the available options between leisure (a good) and working (a bad)
  - We represent consumption through AoCn
- X-intercept will always be 24 hours (unless the total time frame is different)
- Y-intercept will be $24 \cdot w$, because that is how much one can earn in a day

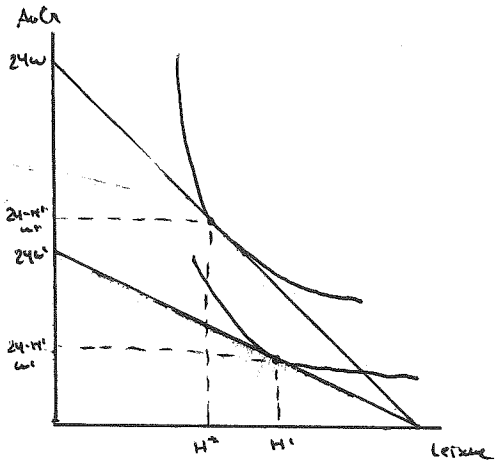
- The slope of the budget constraint = w
- The optimum point will be where the MRS for AoCn → leisure = w, MRS = w
- Indifference curves are downward sloping because we need to give up one to have more of the other, and convex because the more of one good you have, the more you will give up to have additional units of the other

Comparative Statistics: the wage and number of hours in a day can't be changed, so the only available comparative statistics are changes in wage and changes in the preferences of leisure vs. labor

Example 1: wage decrease



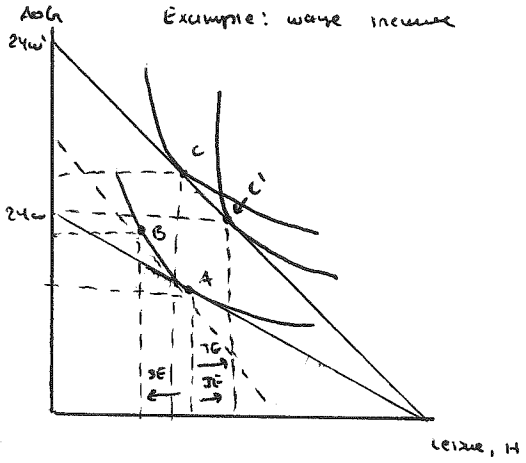
- Y-intercept falls with w because at lower wages, the maximum amount of AoCn that can be consumed by $24w decreases
- The slope of the new BC = w'
- The new optimal point will continue have a lower amount of consumption of AoCn (and thus, lower overall utility), but the change in leisure/labor will be dependent upon the individual's preference for labor and leisure
- Here, the person ended up working more as a result of the decreased wage



- Alternatively, the individual could end up working less, represented by an increase in leisure (H↑)
- This would result in a lower level of consumption of AoCn

Income and Substitution Effects

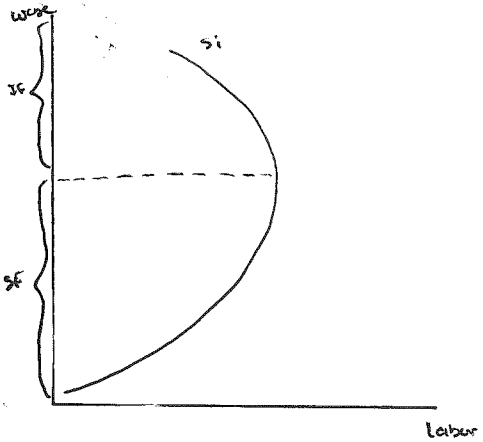
- When wage changes, the consumer's choice of the new optimum will have both income and substitution effects
- Substitution Effect: when w changes, the relative price of leisure as it compares to labor changes.
  If wage increases, the relative price of leisure increases, so individuals substitute towards labor
  If wage decreases, the relative price of leisure decreases, so individuals substitute towards leisure
- Income Effect: when w changes, level of income changes
  Leisure is a normal good, so when w increases, income increases, consumption of leisure increases
  when w decreases, income decreases, consumption of leisure decreases
  Consumption of AoC is also a normal good, so when w increases, income increases, consumption of AoC increases
  when w decreases, income decreases, consumption of AoC decreases



Example: wage increase

- To model: draw both old and new budget constraints
  - Draw a budget constraint tangent to the old indifference curve and parallel to new budget constraint. This change is the SE.
  - This is a wage increase, meaning the relative price of leisure has become more expensive, so the individual will substitute towards labor
  - Next, draw point C by accounting for the fact that income has increased, so consumption of leisure and AoC will now increase relative to B. ?

Individual Supply Curve



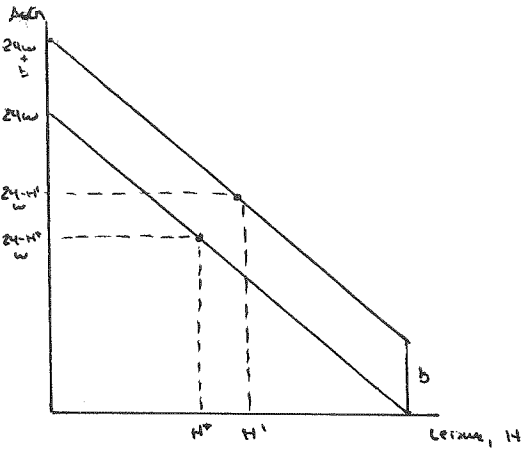
This is what an individual's labor supply curve will typically look like.
At low levels of income, increases in income cause them to work more, and in this area, the SE effect dominates.
Eventually, when income is high enough, increases in income/wage cause them to work less, and is when IE dominates.

Market Labor Supply Curve

- The market supply curve to labor is the aggregate of all individuals. It is typically upward sloping because as wage increases, people are willing to work more time, SE dominates. Also, high incomes expand the labor force.
- Reservation wage: the minimum wage someone would be willing to do a job for. This implies:
  - Employed: market wage > reservation wage
  - Not participating: market wage < reservation wage
  - Unemployed: market wage > reservation wage, but unable to find job

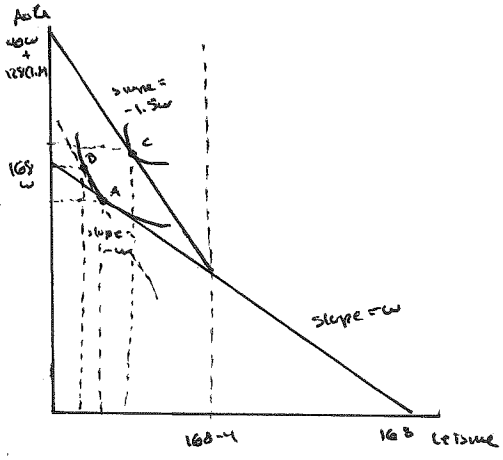
Non-linear Budget Constraints

① Non-Labor Income



- Non-labor income is any income that is not dependent on labor
- Examples include: welfare, inheritance,
- Non-labor income increases income, so individuals will consume more leisure and AoCh
- Here, non-labor income doesn't change the relative price of leisure and consumption of AoCh, so there is no substitution effect
- The slope of the new budget constraint remains = -w

② Overtime

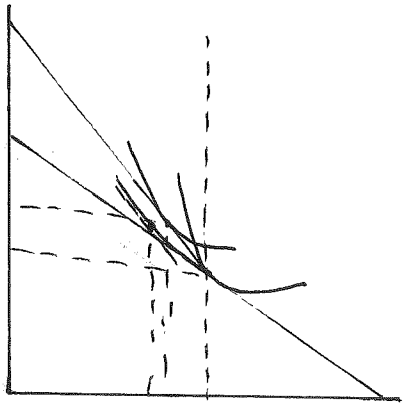


- If after a certain number of hours worked, an individual receives overtime, it changes the budget constraint
- Their new budget constraint will have a slope reflecting new wage (say 1.5w) and will increase the new maximum amount of AoCh they can consume

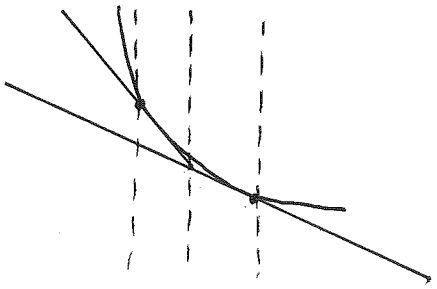
a) Those who work under 40 hours per week will exhibit no change in their behavior because their wage / income / relative prices have not changed.

b) Those who work over 40 hours per week.
Their income has increased as a result of the wage increase, so they will consume more leisure and more consumption of AoCh
The wage increase has made the relative price of leisure more expensive, & they will exhibit an SE towards labor.

c) Those who were working 40 hours per week will a relatively small IE towards more consumption, but will have a large SE towards labor.



d) Those who work just below 40 hours a week may end up being indifferent if their new indifference curve falls.



-If they do decide to work more, it would result from SE, not IE

Labour Demand

- Derivation of labour demand comes from profit maximization, where $MR = MC$. Firms hire until the marginal benefit of labour = marginal cost of labour.

Terminology:

Marginal Revenue Product of Labor (MRP_L): defined as the additional revenue a firm makes when employing additional labor

$$MRP_L = \frac{\Delta TR}{\Delta L} \qquad MRP_L = MP_L \cdot MR$$

Marginal Factor Cost of Labor (MFC_L): defined as the cost incurs by employing an additional unit of labor

When firms are price takers on the input market, $MFC_L = w$

* When firms are price-takers on the output market, $MRP_L = MP_L \cdot P$

When firms are price-takers on the input market, $MFC_L = w$

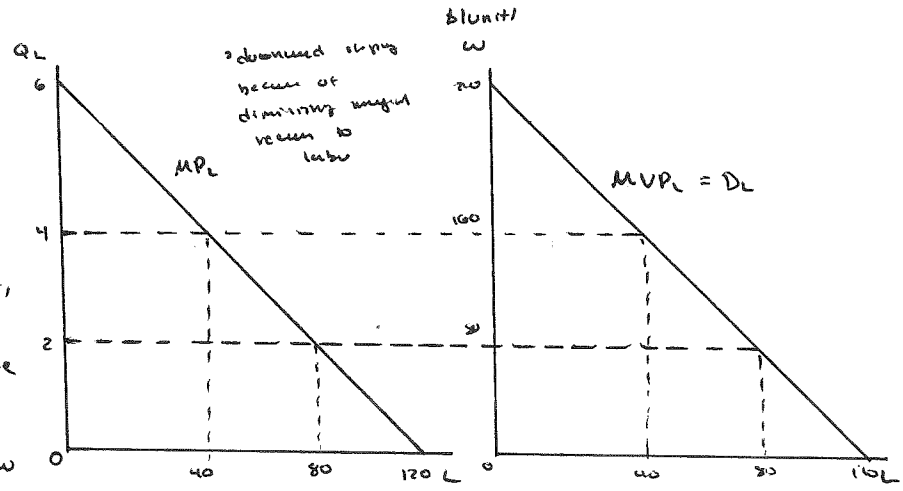
Marginal Value Product (MVP_L): used when the firm is a price-taker on the output market.

$MVP_L = MRP_L$ when $MRP_L = MP_L \cdot P$

* The MVP_L curve is the labor demand curve, it summarizes how much labor a firm should use at any given output good price (and wage)

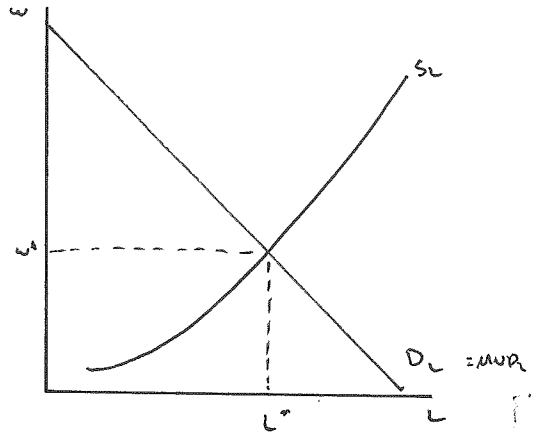
- Firms should employ such that $MVP_L = w$

$MR = MC$



Labor Market

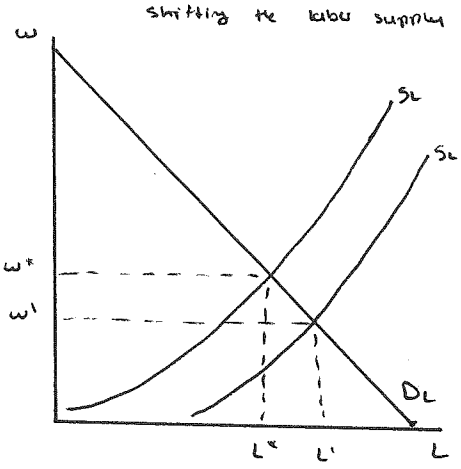
Labor Market Equilibrium



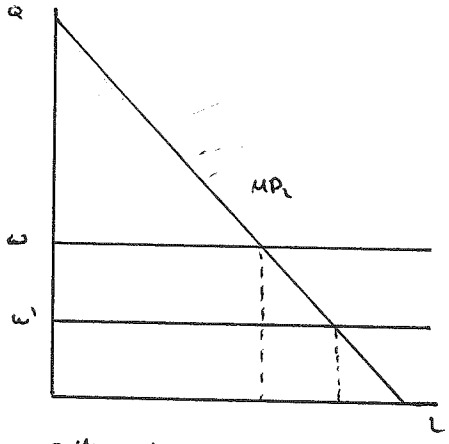
- The position of the labor demand curve is dependent upon marginal product of labor and the price of the output good
  - If MP_L and P increase, D_L shifts out, increase
  - If MP_L and P fall, D_L shifts in, decrease
- The position of the labor supply curve is dependent upon individual's preference for labor vs. leisure

Comparative Exercise

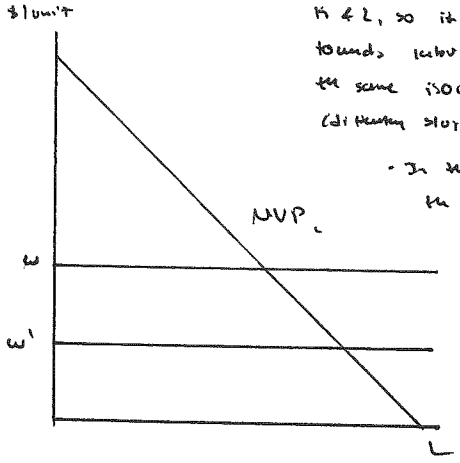
- Example: individuals preferences for labor have ~~decreased~~ increased, shifting the labor supply curve out



- This results in the market wage, w, falling, and labor quantity increasing



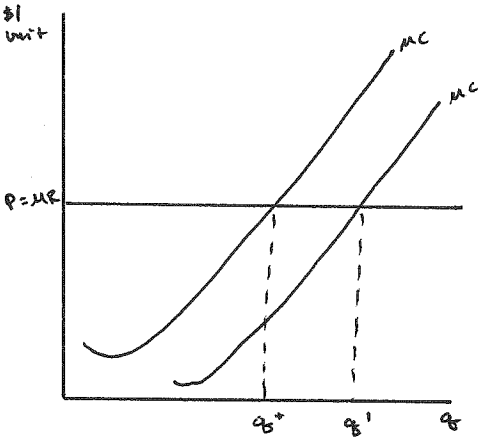
- Marginal product of labor decreases because of diminishing marginal return to labor, $L \uparrow \rightarrow MP_L \downarrow$



- As wage falls, firm hires more workers so that $MVP_L = w$

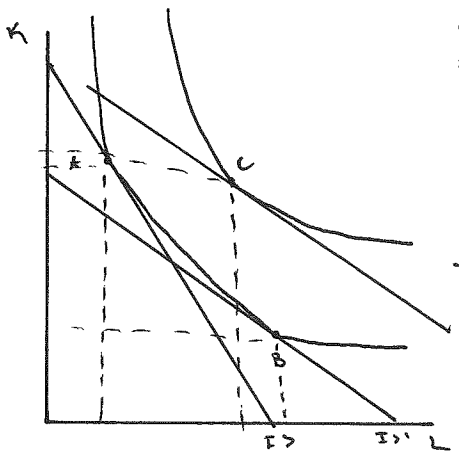
* In the long-run, the firm can rearrange combinations of K & L, so it can substitute towards labor and stay on the same isoquant (different slope of isocost)
  - In the long-run, the market demand curve becomes more elastic because firms can substitute away for labor

Because the market wage has changed, marginal costs have changed. Thus, the profit maximizing quantity has also changed.



Now, the profit-maximizing quantity is higher

Effects: If the firm chooses to produce at a different quantity, it's decision incorporates effects

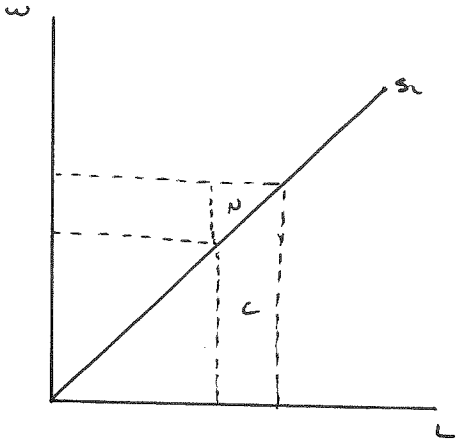


- First, redraw a ~~budget~~ isocost with the same TC and the new isocost's slope
  - Because wage has fallen, the firm will substitute towards labor. A → B (same isoquant)) ⇒ SE
- Next, draw new isocost, further out, (more higher total cost due to higher production) and the new point includes the OE (output effect) which represents the increase in K & L as a result of higher costs

Monopsony

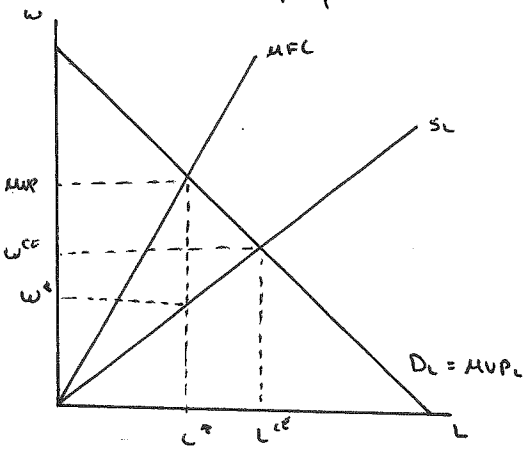
Monopsony is the input market equivalent of monopoly.

Meaning, there are the sole employers.



- The labor supply curve faced by monopsonies is upward sloping, similar to how the demand curve faced by monopolies is downward sloping.
- This means that in order to hire more labor, wages must increase (for the new and future/current employees)

Market wage in Monopsony



- The MFC_L curve for monopsonies will be the supply curve with 2x slope (similar to MR curve for monopolies)
- Monopsonies choose labor at a profit-maximizing quantity where $MFC_L = MVP_L$, and then the market wage is given this quantity meets the supply curve
- As demonstrated, the market wage is lower than in equilibrium, and the quantity of labor is lower, resulting in DWL

Quantitative Example:

Labor Supply: $L = 80w$

Labor Demand: $L = 480 - 40MVP_L$

MFC curve = labor supply with 2x slope

LS: $L = 80w$

$w = \frac{L}{80}$

$w = \frac{L}{40}$

$MFC = \frac{L}{40}$

Profits are maximized when $MFC = MVP$

$L = 480 - 40\,MVP$

$40\,MVP = 480 - L$

$MVP = 12 - \frac{L}{40}$

$MVP = MFC$

$12 - \frac{L}{40} = \frac{L}{40}$

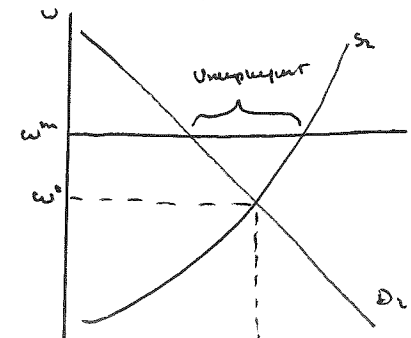
$12 = \frac{2L}{40}$

$480 = 2L$, $L = 240$

$L^* = 240$

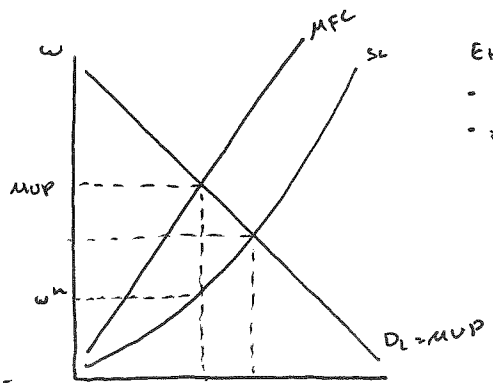
$L = 80w$, so $240 = 80w$, $w = \$3$

Minimum Wage



Minimum wage is a kind of price floor. If it is binding and effective if it is set above competitive equilibrium, will create unemployment

- wage are people's income
- firms become accustomed to



Efficiency wage:

- firm loyalty
- improve morale

Intertemporal Optimization

Intertemporal optimization describes the process by which individuals decide how much and when to spend.

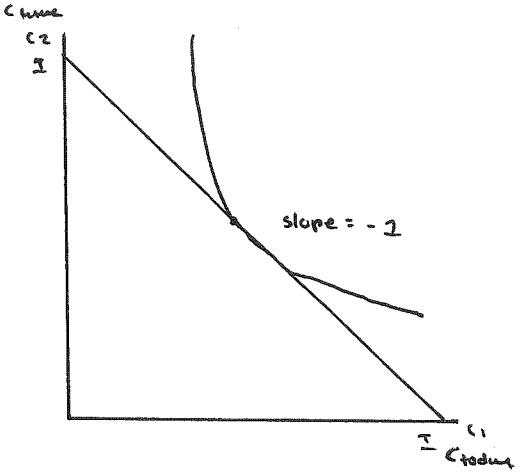
Divides income into two categories:

$C_{today} \leq I$

$C_{future} \leq I - C_{today}$

The goal is to maximize lifetime utility

Intertemporal Budget Constraint:



- Individuals have different preferences for spending today vs. future

Marginal Rate of Time Preference (MRTP): the amount of consumption in the future an individual would be willing to give up to have more consumption today.

Optimum when MRTP = slope (C_{fut}, -1)

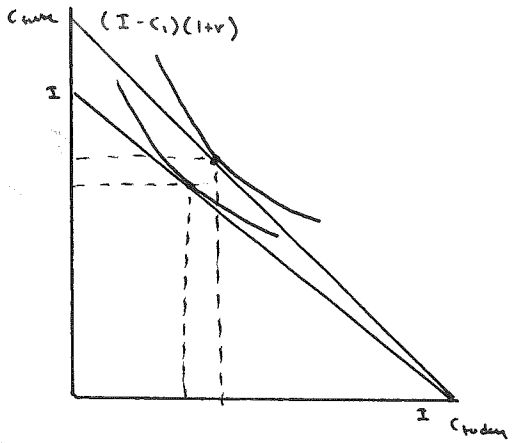
More Realistically...

Income that isn't spent today can be invested to earn a return

$C_2 = C_{today}$

$C_2 = C_{future}$

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



This results in an increase in consumption due to the fact that overall utility can be raised by investing money.

...Effects... Yay!

- The possibility of investment results in...

  Substitution effect: consumption today's relative price has increased, so substitute towards consumption in the future

  Income effect: income has increased, so C_{today} and C_{future} has increased

Preferences result from: - Impatience (spend now!)
- Uncertainty (spend and die then pay?)
- Opportunity cost (save today, earn more)
- Inflation

Discounting: Individuals tend to discount future consumption

The discount rate refers to the rate at which individuals discount future consumption

If $100 today = $110 next year, Discount Rate = 10%

Present Value: a future amount's equivalence to today's dollars

if r = 10%, $110 has $100 present value

(what amount today, given r, results in an equivalent amount)

Future Value: $FV = PV(1+r)^t$ $\quad PV = \frac{FV}{(1+r)^t}$

Examples: what is the PV of a $50,000 salary over the next 5 years?

$$PV = 50{,}000 + \frac{50{,}000}{(1+r)} + \frac{50{,}000}{(1+r)^2} + \frac{50000}{(1+r)^3} + \frac{50000}{(1+r)^4}$$

If r = 3%, = $234,850

$FV(234{,}850) = 234{,}850(1+0.03)^5 = \$250{,}000$

Two Options: 50,000/year for 5 years ... or school and then $100K/year for 3 years, r = 3%

Option 1: $50{,}000 + \frac{50{,}000}{(1.03)} + \frac{50{,}000}{(1.03)^2} + \frac{50{,}000}{(1.03)^3} + \frac{50{,}000}{(1.03)^4} = 234{,}850$

Option 2: $0 + \frac{0}{(1.03)} + \frac{100{,}000}{(1.03)^2} + \frac{100{,}000}{(1.03)^3} + \frac{100{,}000}{(1.03)^4} = 274{,}620$

Example: smoking

$10 utility $5/pack $50 healthcare in 10 years

PV of Benefits = $10 PV of costs = $5 + \frac{50}{(1+r)^{10}}$

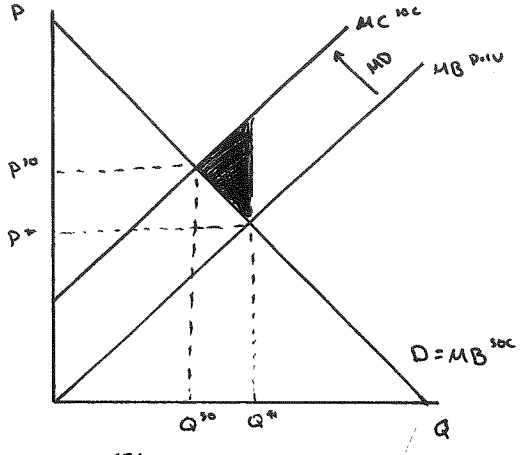
PV of Benefits > PV of costs ... smoking is rational!

- Behaviors that have short-term benefits with long term costs may be considered rational behavior if the PDV of Benefits > PDV of costs, this would require a substantially high discount rate

Externalities and Public Goods

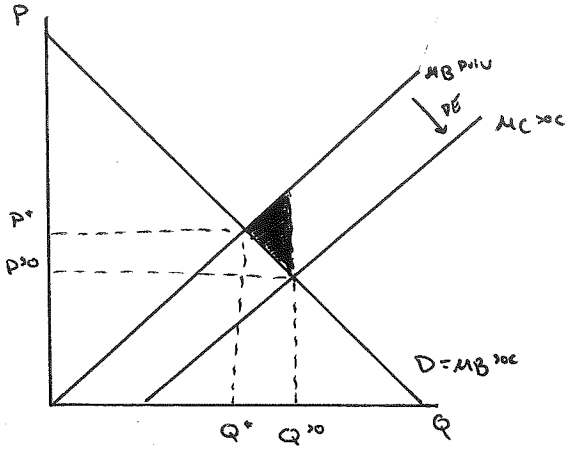
Externalities occur when one party's activities affect another person's utility in a way not reflected by the price.

Negative Production Externality

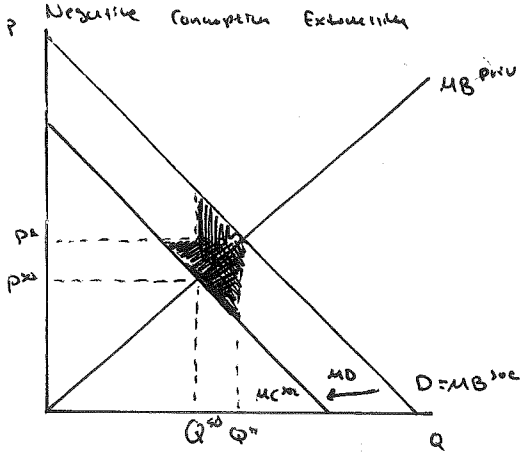


$MC^{SOC} = MB^{PRIV} + MD$

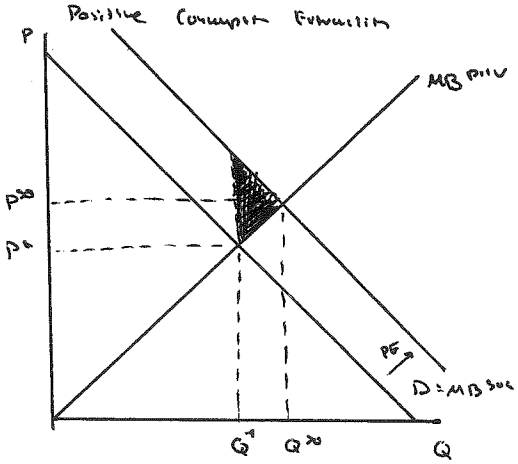
Positive Production Externality



Negative Consumption Externality



Positive Consumption Externality



Solutions to Externalities:

① Internalize the externality by making the responsible party absorb the cost of the externality. Basically, make the perpetrator the victim. Property rights!

- Coase Theorem states that it doesn't matter who you assign the property rights to so long as:
  - bargaining is free (not true due to time/effort and legal fees) .. also enforcement is difficult due to the issue of calculating and assigning damages and also holdout problems (free rider)

- IF property rights go to perpetrator, it incurs the costs and thus will produce socially optimal quantity

② Pigouvian Tax

- Pigouvian tax is a solution that creates a tax equal to the value of the marginal damage
- Potential issues include:
  - consumers end up being taxed by the tax
  - question of what you do with the revenue

③ Regulation

- The government can set a production cap to minimize negative externalities
- Issues:
  - doesn't promote the reduction of the externalities
  - government needs to know firms' cost structures
  - government must keep up with technology

④ Promote positive externalities

- Regulation mandating the production of positive production externalities
- Merging two firms who benefit off each other's work
- Pigouvian subsidy encourage production

Public Goods

Public Goods: - You can get it even if you don't pay for it
- One's consumption doesn't inhibit another's
- Additional consumption doesn't require producing another unit, zero marginal cost

Pure Public Goods: Non-excludable and Non-Rivalrous

Problems with Public Goods:

① Free-Riders

Free-riders attempt to consume public goods paid for by others. They have incentive not to pay their full willingness to pay, but also have incentive to misrepresent their willingness to pay.

Solutions: - Social norms
- Stigmas
- Excluding non-payers
- Threats
- Being among
- Promising good publicity
- appealing to religious/ethical values
- compulsory finance

② Tiebout Equilibrium

- Public goods are often paid for at the local level allowing for individuals with similar values to live together (education, public health and safety, utilities, parks and recreation)
- Individuals can move to places that match their preferences
- In Tiebout Equilibrium, in the long-run, with an infinite number of places, everyone will end up somewhere that matches their preferences, and noone will be asked to pay more than the willingness to pay

Game Theory

Assumptions:
- All players know the full rules of the games, including the other players' payoffs
- All players are rational and flawless
- All players are risk-neutral to payoffs

① Simultaneous Games
- Both players play at the same time
- They don't know the other person's strategy until the game is over

Dominant Strategy: strategy that no matter the other's decision, is the best strategy (opposite of dominated strategy)

Nash Equilibrium: a set of strategies that are the best options for each player, regardless of the other's strategy

- Cooperation requires:
  - They derive pleasure from each other's utility (violates the assumption of selfish, rational, risk-neutral)
  - They don't know the other person's deal (violates assumption of full knowledge)
  - One of them makes a mistake (violates flawless → Trembling Hand)

- If this were a repeated game, they could cooperate (may employ a trigger strategy where if one person deviates, the agreement is off)
  - However, if this was a finitely repeated game, cooperation wouldn't work because final payoff is deviating, and they would pre-deviate that anticipation back to round 1

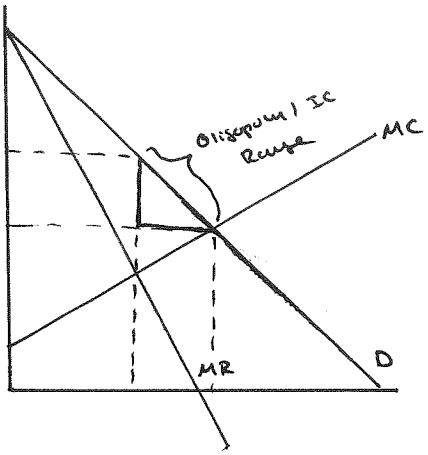
- Deviate vs. Cooperate (with $p_r = \bar{r}$)
  - Payoff for staying street forever: $-2/(1-r)$
  - Payoff for deviating: $-1 - 3r(1-r)$

Imperfect Competition

- Imperfect competition is between perfect competition and monopoly

① Oligopoly

Market in which there are only a few sellers of a good.



$P^M \geq P^{IC} \geq P^{CE}$

$Q^M \leq P^{IC} \leq P^{CE}$

- DWL is smaller in imperfect competition than in monopoly, but still exists

② Collusion

Collusion occurs when existing firms combine to make what is essentially a monopolistic firm. They find the profit-maximizing quantities and price, then divide $\frac{\Pi}{n}$.

- Individual firms have incentive to sell at low prices behind the cartel's back, so measures must be taken to stop them.

③ Cournot Duopoly

- Simplest model of imperfect competition in which there are two firms who set their quantities as best response functions of the other firm (we are assuming that goods are perfect substitutes, market homogenous)

To Solve: ① Find MR_1 and MR_2

② Set $MR_1 = MC_1$, and $MR_2 = MC_2$ to get response functions

③ Find q_{01} and q_{02} by finding the intersection of BR_1 and BR_2

④ Find $Q = q_{01}$ and q_{02} to find P

⑤ Determine profits

Example: Demand: $Q = 30 - \frac{P}{2}$

Supply: Firm 1: $MC_1 = 2q_{01}$

Firm 2: $MC_2 = 4q_{02}$

MR: $Q = 30 - \frac{P}{2}$

$P = 60 - 2Q$

$MR_1 = 60 - 4q_{01} - 2q_{02}$

$MR_2 = 60 - 2q_{01} - 4q_{02}$

BR_1: $60 - 4q_{01} - 2q_{02} = 2q_{01}$

$6q_{01} = 60 - 2q_{02}$

$q_{01} = 10 - (\frac{1}{3})q_{02}$

BR_2: $60 - 2q_{01} - 4q_{02} = 4q_{02}$

$8q_{02} = 60 - 2q_{01}$

$q_{02} = 7.5 - (\frac{1}{4})q_{01}$

$q_{01} = 10 - (\frac{1}{3})[7.5 - (\frac{1}{4})q_{01}]$

$q_{01} = 10 - (\frac{7.5}{3}) + (\frac{1}{3} \cdot \frac{1}{4})(q_{01})$

$(1 - (\frac{1}{3} \cdot \frac{1}{4}))q_{01} = 10 - (\frac{7.5}{3})$

$q_{01} = \frac{10 - (\frac{7.5}{3})}{(1 - (\frac{1}{3} \cdot \frac{1}{4}))} = 8.18$

$q_{02} = 7.5 - (\frac{1}{4})[10 - (\frac{1}{3})q_{02}]$

$q_{02} = 7.5 - 2.5 + (\frac{1}{4} \cdot \frac{1}{3})q_{02}$

$q_{02} = \frac{5}{(1 - (\frac{1}{4} \cdot \frac{1}{3}))} = 5.45$

$Q = 8.18 + 5.45$

$Q = 13.63$

$P = 60 - 2(13.63)$

$P = \$32.74$

④ Bertrand Duopoly

Market situation in which two firms compete on price. Their best response, as a function of the other's price is to undercut. They would continue to undercut until, according to the Bertrand Paradox, they would end up at a perfectly competitive market.

⑤ Stackelberg Duopoly

Market situation similar to Cournot duopoly, except that one firm has first mover advantage.

Example: $BR_1: q_1 = 10 - (\frac{1}{2})q_2$

$BR_2: q_2 = 7.5 - (\frac{1}{2})q_1$

Demand: $P = 60 - 2Q$

$P = 60 - 2Q$

$P = 60 - 2(q_1 + q_2)$

$P = 60 - 2q_1 - 2[7.5 - (\frac{1}{2})q_1]$

$P = 60 - 2q_1 - 15 + \frac{1}{2}q_1$

$P = 45 - \frac{3q_1}{2}$, $MR = 45 - 3q_1$

$MR_1 = MC_1$

$45 - 3q_1 = 2q_1$

$45 = 5q_1$

$q_1 = 9$

$BR_2 @ q_1 = 9$

$BR_2: q_2 = 7.5 - (\frac{1}{2})9$

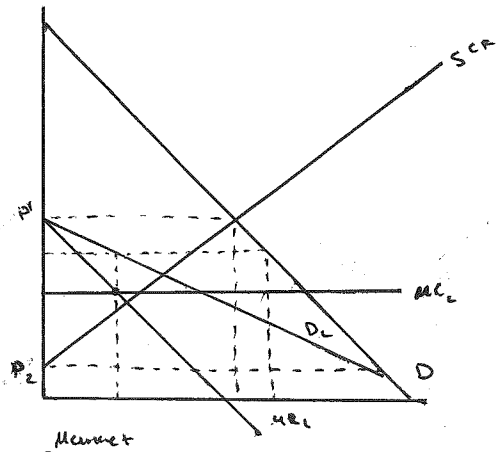
$q_2 = 5.25$

$Q = (q_1 + q_2)$ $Q = 14.25$, $P = 31.25$

Under Stackelberg duopoly, first mover has better position than in Cournot

⑥ Price Leadership

Under price leadership, there is one firm that has sufficient market power to set price. Other competitors act as competitive fringe and are price-takers.



- ~~Price leader~~ faces demand curve D and marginal cost curve MC_L
- S^{CF} is supply curve for competitive fringe
- P^1 is the point at which competitive fringe supplies all demand
- P^2 is the point at which leader supplies all demand

③ Monopolistic Competition

The most realistic model is monopolistic competition, in which in the short-run, a firm has a differentiable product and is able to have monopolistic profits. In the long-run, firms enter the market with goods that function as substitutes. This results in the demand curve shifting in and becoming more elastic. Eventually, it will become a market that exhibits competitive equilibrium (perfectly competitive) price and quantity.