ECONS H2 ① RESOURCE ALLOCATION

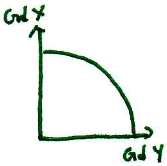
NIGEL FONG

① WHY ALLOCATE RESOURCES

(a) Factors of prod & the Products Possibility Curve

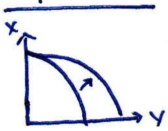
FOP		FACTOR PAYMENT
LAND	Prod res supplied by nature	Rent
LABOUR	Human effort (no workers x av no hrs)	Wage
CAPITAL	Man-made res used to prod gd/svc; land altered by man = capital	Interest
ENTREPRENEURSHIP	Org FOP, innov	Profits

PPC = graph showing max. attainable combi of gd/svc that can be prod
- when all av. res used fully & efficiently
- at a given state of tech

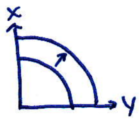


- Bowed outwards ⇒ inc opp cost.
  - As more of a gd prod, ↑Q of alt sacrificed
  - FOP not perfectly suitable to prod of both gd; as prod x ↑, start using res that are ↓suitable; divert ↑res from alt gd — ↑sacrifice of alt
- Point within PPC = inefficient.
- Point outside PPC = unattainable

Shifts in PPC



Skewed shift: new res/tech better suited to prod of 1 gd



Parallel shift: new res/tech suited to prod of both gds

Eco growth = ↑prod cap. of eco.
→ ↑Quality & Quantity of resources (FOP)
→ Tech. improvement — more gd for less res...

* ↑efficiency, PPC ✗Δ

(b) Scarcity

- Limited resources, unlimited wants
- Decision-making units choose alt that gives max satisfactn

Opp cost = Cost in terms of next best alt that has to be forgone
↳ explicit & implicit cost.

→ Diff in opp cost reflect diff in prod of labour... diff land, capital endowments...

(c) Economic Systems

CEN PROB
1. What & how much to produce
2. How to produce
3. For whom to produce

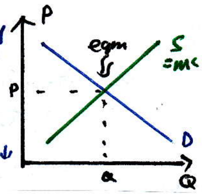
} planned/command eco; free-market eco

FREE MKT
- Priv ownership of property
- Sovereignty of choice.
- Pursuit of self-interest (satisfactn, π, wages...)
- Competition ⇒ efficiency } Smith ⇒ this leads to max welfare for soc
- Price mech.
  - unplanned & decentralised cood of res alloc
  - automatic, no need for costly bureaucracy

② MARKET EQM

(a)

Demand = amount willing & able to buy at given P and time, c.p.



Supply = amt prod willing & able to offer for sale at given P, time, c.p.

→ Income effect
P↑, real Y↓, afford↓, D↓

→ Substitution effect
P↑, rel P of sub↓, switch to sub, D↓

→ D = horiz summation of indiv cons DD

→ Dim marginal return
- keep adding var factors to fixed factor
- Q↑, MC↑, will prod ↑ if P↑.

→ S = horiz summation of indiv prod SS

→ S = MC for PC firm

(b) Factors

FACTORS THAT ΔDD
- Tastes & Pref — ads, soc Δ.
- P. of Interrelated gds — sub, complem
- Populatn & Demographics
- Seasonal changes
- Expectatns of future — speculatn
- Y Income.

FACTORS THAT ΔSS
- Cost of prod — P. factor inputs; ↓TC = ↑efficiency?
- Other Prices — joint ss, comp ss
- Innov/tech — ↑productn of FOP, ↓costs
- Natural factors — e.g. climate
- Govt policies — interventn
- Expectatn of price Δ
- Size of ind — no of firms

These lead to a change in DD/SS — DD/SS shifts.

(c) Price-adjustmt proc.

Change in QUANTITY DD = mvmt along DD/SS due to ΔP

P > Eqm : Surplus of $Q_1 - Q_2$
: Prod x sell all output, compete by ↓P
: Cons recog excess & ask for ↓P
: Mkt fall to eqm, $Q_D = Q_S$

Simultaneous shifts may occur. — dpd on rel. shift in DD/SS

DD↑	SS↑	Q↑	P?	DD↑	SS↓	Q?	P↑
DD↓	SS↓	Q↓	P?	DD↓	SS↑	Q?	P↓

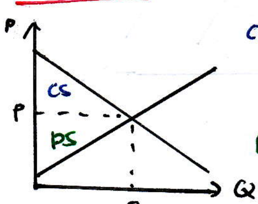
* market P is det by consumers @ ē margin!

(d) Interrelated Gds

* Draw curves for diff mkts...

COMPLEMENTS Joint DD	Use of A req B to gen satisfactn; If Q_{DA}↑, Q_{DB}↑
SUBSTITUTES Compet DD	Alt. gds that satisfy ē same want; If Q_{DA}↓, Q_{DB}↑
DERIVED DD	DD not for own sake, but to prod other: DD_{car}↑, DD_{labour}↑
JOINT SS	Prod fr same source S_A↑, S_B↑ — eg. beef & leather
COMPETE SS	Compete for same FOP S_A↑, S_B↓ — e.g. corn, ethanol

(e) Surplus

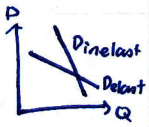
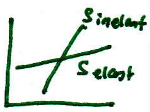
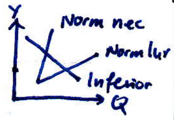


CS Cons Surplus — Diff between max amt cons willing to pay (utility) & what they actually pay

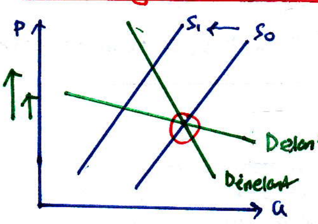
PS Prod Surplus — Diff between amt received & min amt willing & able to accept

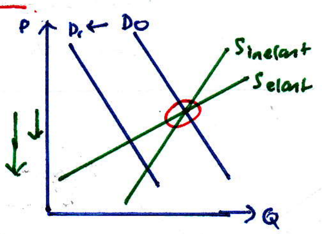
③ ELASTICITY

(a)

	PED | Price-Elasticity of DD	PES | Price-Elasticity of SS	YED | Income-Elasticity of DD	CED | Cross-Elasticity of DD
DEF & SIGN	Measures deg of responsiveness of Q_D to ΔP, ceteris paribus $PED = \frac{\% \Delta Q_D}{\% \Delta P}$  Sign = -ve (ignored) except giffen gd. * Use when SS shifts to det ΔP	Measure deg of responsiveness of Q_S to ΔP, ceteris paribus $PES = \frac{\% \Delta Q_S}{\% \Delta P}$  Sign: +ve (ignore) * Use when DD shift to det ΔP	Measure deg of responsiveness of DD to cons ΔY, ceteris paribus $YED = \frac{\% \Delta Q_D}{\% \Delta Y}$ * DD shifts  YED -ve: Inferior gd (↓quality poor sub) 0-1: Normal necessity (Y-inelast) 1+: Normal luxury (Y↑, ↑DD more than porp)	Measure deg of responsiveness of DD of gd to ΔP of another gd ceteris paribus $CED = \frac{\% \Delta Q_{D}, A}{\% \Delta P, B}$ COMPLEMENTS : CED -ve SUBSTITUTES : CED +ve UNRELATED : CED = 0
DET	TIME PERIOD | ↑T to resp to ΔP dup/discov sub Durable gd - not urgent to buy OR ST - can postpone purchase or no choice? SUBST | No + closeness of subs ↑subst, ↓PED % Y spent ON GD | ↑% Y, ↓real Y when P↑ Forced to ↓consump more ∴ ↑PED. NECCESSITY v LUXURY | Must elab why nec/lux Nec: ↓PED | Lux: ↑PED	TIME PERIOD | Instantaneous PES = 0 FOP fixed ST. P-inelast. FOP restr LT. P-elast. FOP all var STOCKS, SPARE CAP | If stocks in store, ↑PES until stores run out FACTOR MOBILITY | If var F can be put to prod more easily, MC ↑slowly as Q↑, Q↑ more for P↑ ⇒ ↑PES LENGTH OF PROD PERIOD | Longer prod period = new supply takes longer to come onstream, PES↓ NO. FIRMS | ↑firms, ↑PES.	DEG OF NECESSITY | → Must justify → Nec in 1°W may be lux in 3°W! depends on Y.	TIME PERIOD | ↑T, can develop or discov substitutes. ↑+ve CED CLOSENESS OF C/S | ↑closely rel, ↑val of CED CED=0 = unrelated
GOV APP	TAX | Inelastic gd ↑tax, ↓fall Q_D ↓CONSUMP OF DEM GD | DD for addicts gd p-inelast. Tax must be ↑ to be eff. CORR BOP DEFICIT | Success of import duties in ↓import spending dpd on PED for imports	TAX BURDEN | The one w/ ↑inelastic curve bear ↑tax burden	PREDICT TAX | Due to ΔY.	
FIRM	P-POLICY (p-strat) | P-elast gd: lower P ↓TR due to ↑P < ↑TR due to ↑Q P-inelastic gd: raise P ↓TR due to ↓Q < ↑TR due to ↑P ⇒ max TR P-DISC | Diff PED nec to disc! MARKETG. (non-p) | Adv: ↑DD, make ↓p-elast. (↓substitutable) PROD DEC | ST: gd w/ p-inelast - ↑P to ↑TR LT: gd w/ p-elast - try to ↓PED Small F: X EOS, ↑P ↳ focus on p-inelast Large F: √ EOS, ↓P → do p-elast gd UNIONS | Easier to ask for wage ↑ if DP_{pdt} is p-inelast		PROD PLANS | Predict Δ spending & respond Y↑ - prod lux gd - upgrade pdt (↑YED) ↳ up-mkt ↳ up img of inf gd Y↓ - prod inf gd - focus on grp that view gd as essential - promote gd as value for money CONS TARGETS | Segment mkt into diff Y-gps Prod appropriate P & quality e.g. ex. premium supermkt in CBD	P-POLICY | - If pdt ↑CED wrt rival - Have to respond to ΔP of rival or lose cust (rival-conscious) - Try to ↓P to ↑sales MKT SUBS | Try to make gd ↓substitutable ⇒ Adv ⇒ Prod diff ⇒ Brand loyalty MKT COMP | Package complements together for sale Link marketing strat (e.g. airline & hotel alliances

(b) Predicting ΔP due to ΔSS / DD





Price less volatile when DD more elast

* Diag: triple intx for "cp" cond (circled)!

(c) Limitations of elasticity

1. No c.p. → concurrent influences/changes - xpdt effect of p. policy
   → other factors causing DD to fall/rise on ΔSS.
2. Inaccurate & obselete est → elast vals uncertain, may be outdated
   → data collects costly & difficult
   → may be wrong elast val based on inacc info
3. Profit-max assumptn may not hold
4. Prescriptns of elasticity only predict ΔDD/TR.
   Need to consider TC too esp of scale of prod ↑

ECONS H2 ② OPERATN OF FIRMS

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① INTRO

FIRM | Org of entrepreneurs bring FOP together to prod gd/svc 4 sale
Trad obj : Max π
Alt obj : Dividends, val of company
Max TR / growth
LR max π
Satisfy min acceptable π
} principle-agent problem
sep of ctrl/own.
multip obj

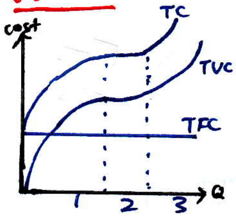
PLANT | Phy loc where gd/svc prod
IND | Gp of firms producing single/related gd/svc
PROD | Proc by which FOP create gd & svc
Pri - res extractn
Sec - manufacturing
Ter - services

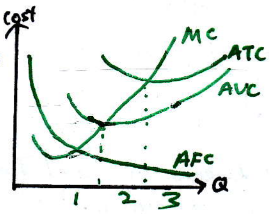
PROFIT | Revenue − explicit cost − implicit cost = Profit
explicit cost: payment to input suppliers
implicit cost: opportunity costs
Profit: +ve : supernorm; 0 : normal; −ve : subnorm

FIXED FACTOR − Cannot ↑SS in SR (e.g. capital) | SR = At least 1 FF
VARIABLE F − Can ↑SS in SR (eg labour) | LR = All factors variable

② SR PROD & COST

(a) Curves





* MC cut ACs @ AC min
* Dist bet AVC & ATC ↓ as Q↑

ΔFC : ΔTFC, TC, AFC, ATC
ΔVC : ΔTVC, TC, AVC, MC
LDMR start min AVC NOT min MC

(b) Expln

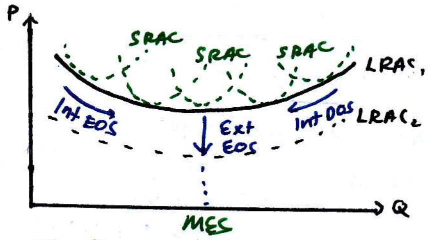
	TC	TVC	TFC	AFC	AVC	ATC	MC
	Σ all cost of prod for any Q TFC+TVC	for use of VF	X Δ w/ Q even Q=0	TFC/Q	TVC/Q	TC/Q AFC+AVC	Add C of prod +1Q in SR (some FF)
1. Specializn / Division FF used more eff by VF e.g. lab sp in diff task. Each VF add more & more to output	↑ at dec rate	↑ at dec rate	X Δ	Falls overhead (TFC) spread over more Q	Each add VF add same amt to c but not to o/p. o/p per VF ↑ cost per o/p ↓ Falls	Falls	
2. Law of diminishing MR As more VF added to fixed FF, extra o/p fr add VF dim beyond a pt L poorer factor combi L ↓ eff VF use L each VF add ↓ to o/p	↑ at inc rate	↑ at inc rate	X Δ	Falls	o/p per VF falls / cost per o/p ↑	Falling AFC offset ↑AVC / ATC falls	
3. Each additional unit causes o/p to ↓ L overcrowding	↑ at inc rate	↑ at inc rate	X Δ	Fall	Rise	Rise	

(c) Lim cost curves

- Firm may not know cost curves
- Outdated info
- Costs Δ ?

③ LR PROD & COST "scale" = LR

(a) LRAC



LRAC = Σ SRAC rep diff plant size
- X rise as sharply, plant can expand.

Assump
- factor P cnst
- factor quality & tech cnst
- firms choose least-P combi of FOP for each o/p

Min eff scale = smallest plant size beyond which X sig IEOS ach.
2) opt size of firm 2) measure ext of IEOS
- can be a range

(b) Int EOS — ans why ↓ cost ↓AC as a result of exp of firm.

TECHNICAL | FACTOR INDIVISIBILITY | - Input of min size, X use eff if o/p ↓ (eg combine harvester)
- ↑Q, ↑eff use of input, ↓AC

↑DIMENSIONS | - Cost ∝ surf area, but ↑vol faster than ↓SA
- e.g. storage tank, DD bus ≠ 2x cost SD bus.
- ↑scale, cost ↑ not as fast → ↓AC

LINKED PROC | - Large factory ~ sev stage of prod @ same loc
- ↓ tpt costs

SPECIALIZ/DIV OF LABOUR | - Workers do simpler & ↑repetv jobs → ↑efficiency
- eg assembly line

MANAGERIAL/ADMIN | - ↑specializ e.g. research worker
- Greater use of existing staff e.g. secretary o/p x2 ≠ costs x2

MARKETING/COMMC | · Bargaining adv w/ suppliers - bulk purchase - ↓AC
| · Bulk advertising, ↓AC

R&D ECONOMIES | · Can afford ↑outlay, spread over greater Q
· ↑impvmt in technique, new pdt

FINANCIAL | · Easier to raise funds - shares / loan

RISK-BEARING | · Bear non-insurable risk better (ΔDD/SS)
· Diversity of mkt / supplies
L area of gain offset area of loss

ECO OF SCOPE | · ↑range of pdt — share overhead c, ↓AC

(c) Int DOS ↑AC due to exp of firm

COMPLEXITY OF MGT | · Hard to coord/ctrl
· Rigid org sys/red tape } slow dec making slow resp to ΔDD/SS
· Principle-agent prob → ownership & mgt divorced

STRAINED RLS | · Long chain of authority - impersonal.
· Slacking, apathy, strike

(d) Ext EOS ↓AC occur to all firm in ind due to ind exp/conc @ loc

ECO OF CONC | · ↑avab of skilled labour
· Well-dvp infrastructure
· Reputatn → ↑π
| EG · Silicon valley
· Jurong Island
· Broadway.

ECO OF DISINTEGRATN | · Sub ind dvp to cater to needs of maj ind
· eg specialized firm to prod input / proc wastes

ECO OF INFO | · Trade journals — ↓R&D cost | EG science shipping

(e) Ext DOS ↑AC, occur to all firm in ind due to exp/conc @ loc

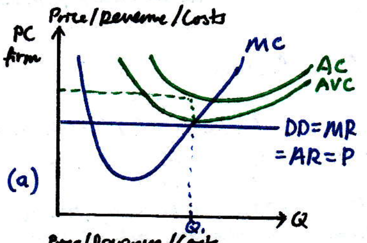
STRAIN ON INFRASTR | e.g. traffic congestn

↑COST OF FOP | eg 1990s IT grad DD ↑pay Guangzhou

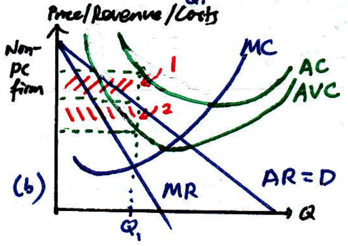
4 OPERATION OF FIRM

(a) Profit maximisation & loss minimisation / shutdown

PC firm



Non-PC firm



Note : Follow Q_1 up! not other pt
: AC, AVC min pt cuts MC
: (b) MR = ½ AR
: Height of AC det norm/s π.

π-max

Cond 1. MC=MR
2. MC rising

Exp $Q<Q_1$: MR > MC.
↑Q, ↑TR > ↑TC

$Q>Q_1$: MR < MC
↑Q, ↑TR < ↑TC.

Loss min / Shutdown cond

- Both a, b making subnorm π (follow Q_1 up! NOT other pt)
- Amt. loss = (AC − AR) × Q.
- Will continue prod if $AR_Q > AVC_Q$
- (b) - loss if prod cont. = (1)
  loss of shutdown = AFC = (1)+(2)
- by cont prod, VC covered and at least some FC recover

(b) Price discrimination

Def
- Prod sell sp. pdt to diff buyers @ diff P
  OR
- Same cons charged diff P @ diff T

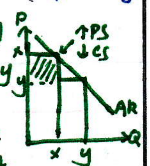
} for reasons X assoc w/ cost diff.

Cond possible {
1. Firm has mkt pwr / ctrl over mkt supply
2. No possb of resale between diff mkt (child sell tix to adult)

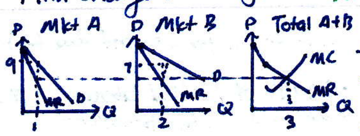
profitable - 3. Firm able to segmt mkt into separate & identifiable gps
∟ each submkt diff PED − ↑P in p-inelast mkt, ↓P in elast

1° PD (perfect p.d.)
- Each cust charged max P. willing & able to pay.
- Cons : 0 CS
- Prod : MR = DD curve.
- EG : auction.
- Lim 1 Impractical to charge each cons diff P
  2 Cons usually X reveal max price willing to pay

2° PD (block pricing)
- Diff P charged for diff blocks of same gd
  i.e. uniform P for 1st x units, lower P for next y
- Cons : ↓CS ⟶ ↑PS
- EG : 1st few kw P_x − no substitute, lights etc
  Addit'n kw ↓P − elec in comp w/ gas, alt



3° PD (disc among buyers)
- Same pdt, diff P for diff cust
- Cond 1. 2 or more separable sub-mkt
  2. Diff PED in each sub-mkt
- Firm charge P ind by DD curve in resp sub-mkt



- Fix Q=3, MC = MR_{tot}
- Divide between each mkt so $MC_1 = MR_1 = MR_2$
- If $MR_A > MR_B$, switch Q → ↑TR
- Then trace up, find P.

Costs
- ↓CS (but X DWL to soc as PS↑)
- Inefficient/complacent → pass costs on
- ↑π fr. 1 mkt used to withstand π-war in other mkt ⇒ M

Benefits
- ↑Q
- ↓Y gps subsidised − can consume gd/svc that otherwise X
- Prov gds that may not otherwise prod due to ↑C (↑TR!)
  ∗ loss-making comp can → profitable w/ p.dn.
- ↑π − R&D, Pdt impr, ↓C.

5 FIRM SIZE & GROWTH

(a) Measuring firm size → Why Grow

1. Q_{output} → Exploit EOS
2. TR / turnover → TR ↑
   → Prevent takeover
3. Mkt share (% firm's sales / mkt) → Gain mkt pwr
   → Gain security by ↑range of pdt/mkt
4. Capital stock → ↑mkt valuat'n
5. No. employees

(b) Methods of growth

1. Int. expansion − ↑Q, ↑plant size
2. Ext growth — M & A (1 firm lose identity completely)

a ∘ vert. integrat'n - between firms of diff stages in prod proc.

FWD - move into succeeding stage of prod (eg brewery buy pub)
→ secure ↑mkt outlet
→ ensure mkt outlet live up to image
→ closer to cust

BWD - move into prev stage of prod (eg refinery buy oil well)
→ ensure secure raw mat SS
→ control SS quality
→ restrict competitor SS

b ∘ horiz integ - between firms in same stage of prod
→ ↓compet'n − ↑mkt pwr
→ ↑specializ, EOS

EG: adidas buy reebok.

c. ∘ conglomerat'n - between unrelated firms
→ diversify output : ↓risk, ↑growth.

(c) Existence & survival of small firms

Existence = Why stay small (cannot grow big)
Survival = Why make norm π ∴ ↓compet'n
} "Final links!"

∗ Bear in mind qn 'how small firms coexist w/ large firms'
→ X EOS pt ⇒ qn says ind can accom large F

Surv	Ext	DD-side (nature of pdt)		EG
✓	✓	1. Lim range	- Bulky, perishable gds - ↑tpt cost - localized mkt.	- Fresh fish - Food stores - Bricks
✓	✓	2. Lim scope	- Variety DD (x mass prod) - Personalized svc	- Food - Doctors, tailors.
✓	✓	3. Lim price	- Prestige mkts (small!)	- Lux. yacht.

Surv	Ext	SS-side		EG
✓	✓	1. MES	− EOS quickly exhausted − DOS set in early (fav small)	
	✓	2. Cond G	− X capital.	
	✓		- x time to grow (start-ups, early stg of product cycle)	- IT
	✓		− X risk appetite	- Fam. busic.
	✓		− Non π-max / want indv ctrl	
✓	✓	3. Mkt	- ↓entry barriers − ↑small firms	- Food
✓	✓		- Banding : gain adv of bulk buy/sell while retaining indep.	- Coops. - OTOP - Floral N.
✓	✓		- Actions of other firms: no abusive monopolist.	

ECONS H2 ③ MARKET EFFICIENCY & STR

① MARKET STRUCTURE

(a) Cond	PERFECT COMPETITION	MONOPOLISTIC COMPETITION	OLIGOPOLY	MONOPOLY
1. No of sellers in rls to mkt size	Many small independent firms └ indv firm ✗ set P, accepts mkt P	Many small independent firms	Few large firms; interdep ✗ firm conc ratio = mkt share of ✗ largest firms	One large firm.
2. Product differentiatn	Homogenous pdt └ buyer ✗ show preference to 1 firm	Differentiated – quality – design – branding ↳ but ↑ close substitutes	Homogenous or differentiated (subst for each other)	One unique pdt ∴ ↓ CED, PED
3. Knowledge	Perfect knowledge Prod: know rival P, CoP, tech Cons: know P, quality ↳ will not pay more than mkt P	Imperfect knowledge - cost str of firms differ e.g. some lower rental	Imperfect knowledge └ cons ✗ know costs	Assymetrical knowledge └ cons ↓ kn
4. Barriers to entry/exit	None - mobile factors of prod available to firms at unform P ↳ no/low cost advantages to any firm - ✗ transaction / transport costs - ↓ fixed costs: ease of entry/exit	Low	High NTL – Sig. EOS ⇒ ↑ MES relatv to mkt size – ↑ FC rel to mkt DD – exclusive control of raw materials ART → product differentiatn & brand loyalty – Legal protection e.g. patents, licenses . . . – Ability to carry out R&D	High } natural M give both ntl/art.
5. EGs	-Newspaper vendors -Agri pdt -Stock mkt	- Barbers: some $10, some $50 - Restaurants	- OPEC - Telco in SG - Taxi & petrol companies in SG	- SMRT NS & EW line ⇒ Starhub ✗M Starhub EPL ✓M } careful of defn

(b) Feat

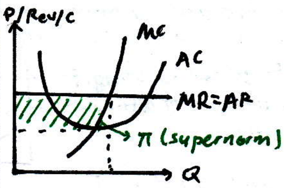
1. Power to set P

PERFECT COMPETITION

Power to set P

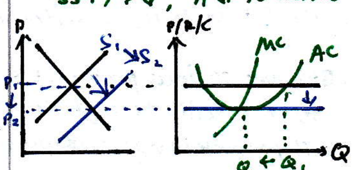
Firms ✗ set P (price taker)
- many small F
- if set P > Pmkt, cons buy identic. pdt fr other firm, $Q_D \to 0$
- No incentv to set P < Pmkt, can sell any Q at Pmkt

- Firm prods @ MES since AR same at any amt i.e. $\pi_{max} = C_{min}$ . . .



Adj fr SR supernorm π → norm π

Only makes norm π in LR.
w/ supernorm π, new firm enter. SS↑, P↓, π ↓ to norm:



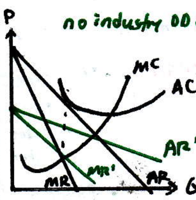
(sim for other mkt str)

MONOPOLISTIC COMPETITION

Power to set P

Firm able to set P-output strat
- no need to cons rxn of other F
- if ↓P, rival firm suffer neglig due to ↑ no. firms
- ✗ collude – too many firms

no industry DD curve – unique pdts



* curves ↑ elast than M
* AR' & MR' if DD falls & becomes ↑ elast

LR π

LR – only norm π : ↓ BtE
SR supernorm π – firms enter
subnorm π – firms leave

Non-P competn (MC, O)

OBJ: Increase DD
make less p-elastic

In LR, MC – norm π, cannot cut P further, hence ↓ p-comp

1. Real physical differences
   - product innovatn / R&D
   - better quality
2. Imaginary differences
   - adv / mkt tech
   - packaging
   - pdt image
3. Diff cond of sale
   - diff loc & quality of svc
   - eg restaurant v food court pepper lunch.

Non-P comp in O > in MC
In MC, pdts have ↑ similarity

O also: brand proliferatn (cosmetics)
orig 3 firm – new entrant can take 25% of mkt
but 5 brands – can only take 1/6
⇒ new F harder to enter! BtE

OLIGOPOLY

Power to set P

- Can set P / output but firms are interdependent (esp. homog pdt)
- Conflicting obj
  - max industry TR → collude
  - max indv mkt share → compete
- Collusion likely if
  - few firms (check on each other)
  - eff. comm & monitoring (✗ cheat)
  - stable DD/SS cond (can alloc quota)
  - sim cost cond – ✗ incentv to cheat

Collusion

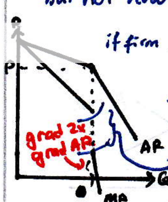
→ Cartel (formal agreemt, act M)
- set output quota
- set P (✗ non-P comp for mkts)

→ Agreemt not to poach each other's markets

→ Price leadership
- dominant firm (largest)
- barometric firm (sense cond)

Competition on P

→ Kinked DD explains p rigidity but not how P came about



if firm > P: other firm ✗ follow
: lose TR & mkt S
< P: other firms follow
✗ Δ mkt share
when MC fluc bet here, maintain P

→ Price competition
- when excess cap / new F appear
- undercut P to drive rival out, remaining F ↑ mkt share, pwr
  └ ↑π
- SR losses
- Firms w/ ↑ res survive

Non-P-comp (see MC)

Alt between P & non-P comp
P-comp avoided, non-P comp fav

* other factors DD · Y, gov policies
  SS · Tech, CoP
  · Obj of firms

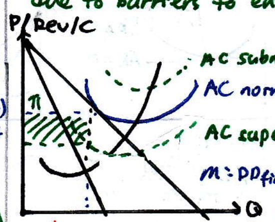
MONOPOLY

Power to set P

- Can set either P or output but not both

LR π (M & O)

Able to retain supernorm π due to barriers to entry.



Use AVC to show shutdown

Maintaining BtE (M, O)

1. Use cost savings fr I EOS
   ↓AC: discourage new F entering
   : can ↓P to ward off comp (new F ✗ make π)
2. Gaining control
   SS: gain ctrl of raw mat
   DD: Adv – conv cons ✗ subst
   R&D → new pdt.
   Legal protectn of patents
3. Dumping – sell below CoP to (have finan res) gain mkt share
4. Mergers & Acquisitions

* But BtE remain temp!
  M πs are v. attractv to new firms who will try to enter.

② ECONOMIC OBJECTIVES & COMP OF MKT STR

CRITERIA

1. Allocative efficiency
2. Productive efficiency
3. Dynamic efficiency (innov)
4. Distributⁿ efficiency (equity)
5. Variety / Cons choice
6. Price & output, EOS
7. π of firms

Give EGs

To COMPARE, ASSUME
- LR eqm
- π-max
- No externalities

(a) Allocative efficiency

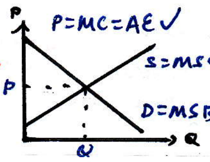
DEF AE = pareto optimum alloc of res among diff gds
↳ cannot reallocate res to make someone better off without making someone else worse off
↳ max PS + CS (≠ equitable) right amt & type of gd

COND P = MC
val. soc places of last unit of gd = opp cost of res used to prod it = val of ben of alt gd

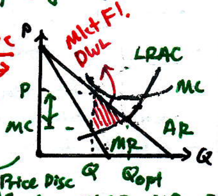
Assumption • no externality / pub gd.

P>MC : value > opp cost ⇒ prod more
P<MC : value < opp cost ⇒ prod less

PC / 1°PD M



Non-PC ↙ excepts



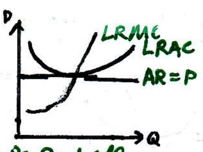
M prod @ MC=MR
X AE: P>MC
Should ↑Q.
DWL shaded
↳ mkt fails! Pt ↓o/p underprod

✱ exceptⁿ : 1° Price Disc may be AE since MSB = MR_PD = P

(b) Productive efficiency

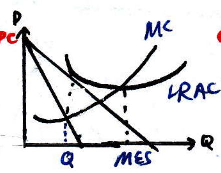
DEF / cond FIRM POV : Any given level of output PE if prod @ min AC
⇒ all pt on LRAC are PE (x-efficient)
SOC POV : LRAC min = PE ; all IEOS exploited
⇒ PE @ min LRAC i.e. MES

PC



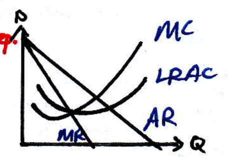
PC Prod eff
↳ if X eff, X norm π, X stay in business

X PC



Prod eff : firm POV ✓ soc POV X

except



✱ Exceptⁿ : can hit PE for supernorm π M

→ Mkt Failure!

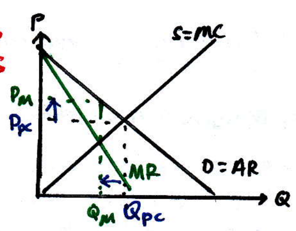
X-ineff M & O may suffer X-inefficiency
- no competⁿ pressure on π
- lax cost ctrl - overstaffing
  - prestige buildings / eqpt
- ↓ effort to keep tech up to date or to develop new dom / exp mkt

• Prod abv LRAC
• More res used than nec to given o/p

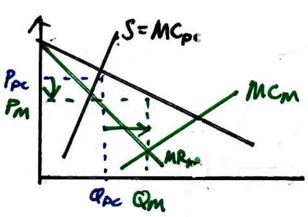
Ev : contestable mkt
: glob competⁿ
: excess cap.

Adv ? O & MC : Wasteful competⁿ 1. Advertising (but may ↑ info?)
2. Brand proliferatⁿ

P / op IEOS



Assuming • no cost sav / IEOS
• SS & DD cnst
Output ↓ and P↑ under M compared to PC



But if M enjoys substantial IEOS, cost savings may be passed on
Output ↑ and P↓ under M w/ sub IEOS

(c) Profits

PC & MC - norm π in LR
M & O - can make LR supernorm π due to barriers to entry

Equity

P & MC - spread wealth over many small firm
- but X rectify existing ineq
M & O - Supernorm π conc in dom F at expense of cons ⇒ INEQ

(d) Dynamic efficiency (innovation)

DEF Dyn eff = efficiency over a period of time ; Δs @ best rate
⇒ innovatⁿ in process - ↓ CoP
product - ↑ quality, ↑ cons satisfactⁿ
⇓
Productⁿ of economy ↑

	Can afford R&D?	Incentⁿ to R&D?
PC	No. Only norm π in LR	No. - homogenous pdt, quality irrel (real wrld?) - perfect info; innov quickly copied by rivals
MC	Lim. Only norm π, LR	Yes - can get supernorm π in SR - focus on pdt differentiatⁿ rather than groundbreaking innov
O	Yes. Supernorm π / LR	Yes - Can ↑ mkt share (comp) - ↑ tech = ↑ BtE — reward of R&D = LR ↑↑π No - collusⁿ / entrenched O may ↓ R&D
M	Yes. Supernorm π / LR	No • complete BtE, no comp. pressure to innov - innov erodes val of existing pdt Yes - threat of comp — may innovate

(e) Variety of pdt / consumer choice

PC - Homogenous gd, but choice of producer
- Responsⁿ to cons DD → ΔDD = ΔP.Q, pdt → cons sovereignty

MC - ↑ variety, pdt diff — intense comp over quality & design

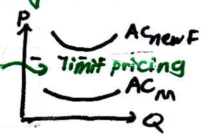
O - Usually pdt diff ⤳ but may be illusⁿ - pdt prolif / multp branding

M - Only 1 choice of pdt ; or a choice fr a range

(f) Evaluatⁿ

INTV | Intⁿ by gov may ↓ drawback, while retaining merit of M

CONTESTABLE MARKET | • If unimpeded / costless entry & exit | EG : airline
- new firm can enter at ↓ cost
- can leave (if mistake) by moving mobile FOP to another mkt w/o losing orig investmt
• Threat of new F forces existing F to - keep P↓ to not attr new firms → limit pricing
- prod efficiently



• Implⁿ : what's crucial is not no. F, but cost of entry / exit
• Gov X intef w/ behav of F, but entry / exit costs
↳ eg LTA make bus routes contestable
↳ award by tender, ↓ quality svc = OUT.
• But no real W mkt perfectly contestable . . .

CREATV DESTRUCTN (Schumpeter) | Monopoly π, BtE not serious prob in LR
⇒ stimulus to ē creativity reqd to destroy ē BtE
⇒ monopoly π powerful engine of prog in LR
Old ways of doing things make way for new
2 release assets & resources ; make avab for others

GLOB | E.g. M at home, may face comp fr. other countries / impts

COUNTERVAILING POWER | • Power of oligopolists offset if they sell their pdt to other powerful firms
↳ O prod of baked beans sell to giant supermkt chain, who then uses its mkt pwr to keep P. down . .

COMP FOR CORPORATE CTRL | • M w/ potentially low costs but run inefficiently may be subject to takeover bid
• Forced M to be efficient to avoid takeovers

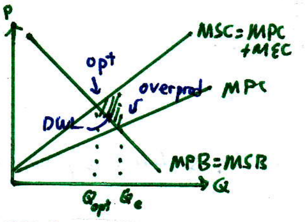
③ MARKET FAILURE & GOVT INTERVENTION

DEF Market Failure = Failure of unregulated free mkt to
1. Allocate resources efficiently, or
2. Achieve social goals.

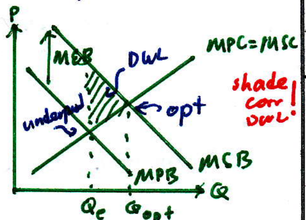
(a) Externalities

DEF = 3rd party effect arising fr prod / consump of gd/svc for which the 3rd party neither pays nor receives compensation.

TMP
- An EG of a -ve ext is ____
- In the pursuit of self-int, prod of ____ will only consider private costs, ignorg ext c e.g. ____ (must exp soc ben/c)
- [Diag] this creates a divergence between MSC & MPC of the distance of the MEC (cnst or increasing)
- Assuming MEB = 0, i.e. MSB = MPB
- Free mkt will result in overprod of ____
- Above the soc opt o/p (Q_*) where MSC = MPC
- Resulting in DWL (area y)
- Indicates ineff alloc of res in free mkt.



NEG EXT: OVERPROD

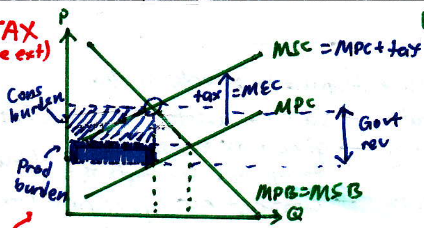


POS EXT: UNDERCONS

EGS

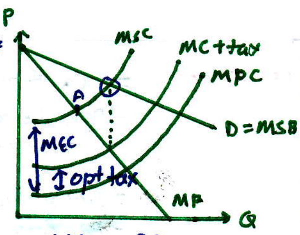
	NEG EXT	POS EXT
prod	chemicals, polln	R&D
cons	car usage	educatn, healthcare

TAX (-ve ext)



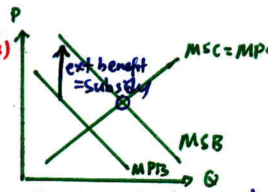
PERFECT COM
- Impose tax = MEC
- Achieve soc opt o/p, ↓ DWL
- Internalises ē ext
- Cons/prod: the one w/ ↑ inelast bears ↑ tax burden

eg ERP

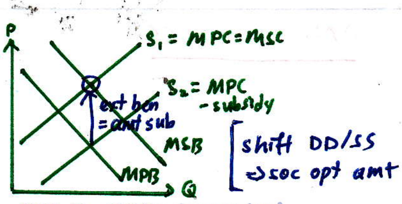


NON-PC
- If tax = MEC, prod @ A (MC = MR) not eff!
- Opt tax < MEC ...

SUB. (+ve ext)

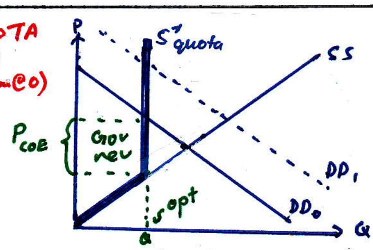


SUB TO CONS (DIRECT)

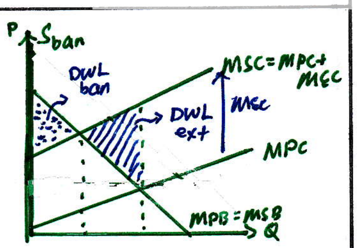


SUB TO PROD (INDIRECT)

QUOTA BAN (quota @ 0)



- Quota lim Q.
- If $DD_0 \to DD_1$, S X Δ, P ↑.



- There will be DWL due to ban
- CBA: $DWL_{ext} > DWL_{ban}$?

LEGIS.
- Force cons/prod to behave in certain ways
- Prod more des outcome than that achv by free mkt

EG - force polluters to bear cost of proper waste disposal (↓/0 MEC)
- ban smokg @ bus stop, ban gun sales...
- compulsory edu, seatbelt use...

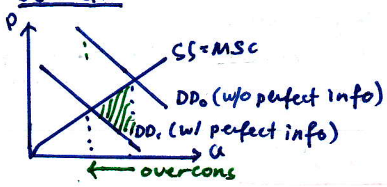
(b) Merit / demerit goods : Imperfect info

Demerit gd
- Gds consid. bad for soc
- Govt try to ↓ prod/cons

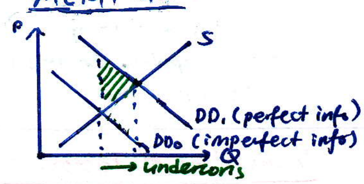
Merit gd
- Gds consid. gd for soc
- Gov try to ↑ prod/cons

① Externality argument - merit gd: +ve ext (see a)
② Personal well-being / Imperfect info argument.

DEM GD



MERIT GD



- Imperfect info ⇝ ignorance on cons part ⇝ persuasive adv: oversell benefits of gd.

Demerit		Merit
Ind underest MPC ∴ overconsump	paternalistic govt!	Ind underest MPB ∴ undercons
EG - alcohol - cigarettes		EG - healthcare - education.

(also see measures for ext): TAX / SUB, LEGIS ...

DIRECT INFO PROV.
- Allow ext c or real B to be made known.
- DD shift towards soc desirable level.

EG
- job centres: info for job-seekers, firms
- prov. of consumer info
- prov. of govt stats on P, c, employmt, trends
- prov. of info may put pressure on firms to ↓ MEC, e.g. hostile public rxn if govt adv effect of dump toxin

DIR PROVISION Prov gds w/o charge / well below cost due to
- Sig +ve ext
- Imperfect info: if people had to pay, they may go w/o
- Social justice: X prov according to ability to pay : merit gd - prov acc to need.
- Dependants - or quality of children's edu dpd on how much parents cared (sim elderly and)

(c) Public gd

	EXCLUDABLE	NON-EXCLUDABLE
RIVALROUS	Private gd - food - congested toll road	Common gd - fish in ocean - congested non-toll road
NON-RIV.	Club gd - cable TV - uncongested toll rd	Public gd - ntl defense - uncongested non-toll road

NON-RIV
- Consump of gd/svc by 1 person X ↓ amt avlb to others (explain in terms of ē eg)
- Once provided, MC of prov to add. user = 0
- For alloc eff, P = MC = 0 ... no priv mkt will do this

NON-EX
- Not possible to exclude non-payer fr cons gd/svc
- Lead to free-rider prob, no one has incentv to pay

CONSEQ
- ∴ public gd will not be prov by mkt tho pple want it
- Ineff alloc of res

unless entrepreneurs find innov ways to overcome, e.g. adverts - prov free radio.

EGS
- Ntl defence
- Law & order

DIRECT PROV
- Govt take over prov of public gd
- Nec for overall eco. efficiency
- CBA, MSB = MSC to decide right amt of gd
- Not nec govt prov itself ⇝ can subcontract

✓

(d) Imperfect info

→ Merit / Demerit gds - see prev
→ Imperfect comp
- firms X know most eff prod methods
- cons X know P & quality of gd on sale
- Workers X know job opp / wages
- Resources misalloc when dec w/ imperfect info

→ Persuasive adv - see prev

→ Asymetrical info e.g. health care
- Dr w/ ↑ kn, patient X knowledge
  ↳ patient rely on Dr to prov info.
- Unscrupulous dr may advise more tests & treatmt than nec
- DD > $DD_{soc\ opt}$

→ DIRECT INFO PROVISION . . .
→ EDU/CAMPG
- mobile screening vans.
- anti-smoking campaigns. e.g. commercial.

→ LEGISLATION
- health warnings of damaging eff of smoking display on cigarette packs . . .
- misleading labelling e.g. "light", "mild" not allowed
- min legal age to smoke
- cig. comp banned fr sponsoring public events

→ LEGISLATION
- govt encourages Drs to display price of svc
- medical ethics / discipline boards

* See imperfect comp. measures

(e) Immobility of factors of production

1. OCCUPATIONAL IMMOB

LABOUR
- Mismatch between skills on offer fr é unemp & req
  = structural unemployment
- unemp / underemp of res → waste of res; mkt F

CAPITAL
- Some units of capital are specific to ind they have been designed for (e.g. special machines)
- If DD for gds prov by these ind ↓, unemp / underE

2. GEOGRAPHICAL IMMOB

LABOUR
- X move to other loc to find work
  - family / soc ties
  - financial costs in moving
  - reg Δ in house P.
  - Δs in cost of L

3. IMMOB DUE TO IMPERFECT INFO

LABOUR
- pple may not know what jobs available
  ⇒ job-search / frictional unemployment.

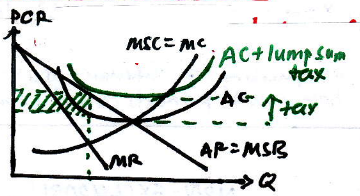
→ SKILLS TRAINING
- SPUR skills upgrading prog
  ↳ fund by skills dvp fund
- Equip str. unemp w/ new skills → new jobs
- Solve prob of skills mismatch.
- Can ↑ prod cap. of economy (PPC move out)

→ INFO PROV
- Career fairs
- Job agencies . . .

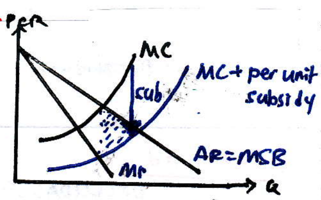
* Normative issues! Cannot be settled by eco analysis!

(f) Regulation of monopolies (why MF see earlier)

TAX/SUB

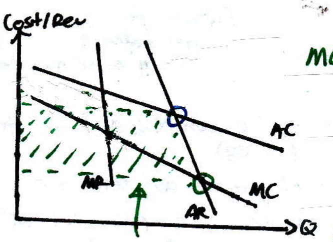


Lump-sum windfall tax
- is FC, shift AC upwards
- Reduce supernorm π, XΔQ



Per-unit subsidy
- Shift AC, MC downward
- ↑Q of M to soc opt Q.

REG I



loss under MC-p.

MC-PRICING
- Prod @ P = MC ⇒ A.E
- But X max π (AC > P)
- Govt subsidies nec
- Or 2-tier pricing to ↓ loss
  Tier 1: cover FC
  2: Charge P = MC

AC-PRICING
- Charge P = AC
- M. break even
- X AE but ↓ mkt F.

REG II
- Merger policy → mergers that create M: X allow
- Regulate M
  - insist on certain std of prov (e.g. LTA/PTC)
  - price-cap reg: P allowed to ↑ by (RPI-X) % rate of inflatn - expected ↑eff
- X anticomp behav
  - outlaw predatory pricing (P < COP) done to destroy competn
  - GPs X allowed to collude to set P.
- ↓ BtE
  - Telco: allow phone no. switching
  - make mkt contestable.

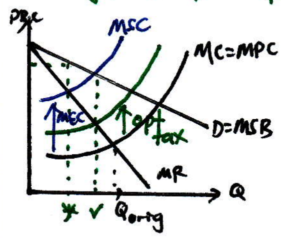
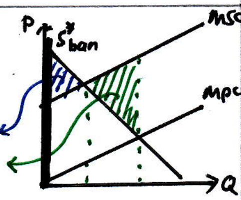
PRIVATISATN = Sale of pub enterprise to private sector
- Denationaliz → sale of assets / shares (Singtel)
- Franchising → give priv owner right to operate for length of t (buses)
- Priv productn → contract out; gov X prod (road const)
- Priv financing → rely on consump charge not tax rev (hospitals)

DEREGULN
- Dismantling of restrictv rules, liberaliz of reg
- ↑ freedom & competn (Singtel)
- ↓ BtE → ↑ contestable → ↓ DWL (allow foreign banks)

(g) Measures in SG

4 EV OF INTV & GOVT FAILURE

(a) Ev of measures (specific) – also see gov failure.

	EFFECTVNESS ~ corr mkt F ⟷ if x eff, x des!	DESIRABILITY ~ effects on diff pple	FEASIBILITY
TAX & SUB – ext – merit/dem good	+ Internalise ext cost, ↓ DWL + Mkt based soln ~ allow mkt forces to op ~ P & Q os w/ DD & SS + Adjustable if mag of ext C/B, imp info Δ + Incentv to ↓ -ve, ↑ +ve - Valuatn of ext cost/ben/info difficult └ over val of c: Q < opt, welfare ↓ └ underval of c: Q > opt, still not opt } ≠ eff - Det right tax for imperfect mkt hard  If tax = MEC, M prods * at MC=MR, X opt. Opt tax < MEC (✓) Hard to det	+ Tax – gov rev ~ use for edu/infracstr/social + Soc still enjoy prod of gd + Eco eff – growth – tourism – productivity. - ↑ tax burden ~ may affect poor more (esp sin taxes) - Sub: Cost to gov ~ opp cost! - Eco eff – employmt – competness of export/ind → export sub? → tax competitor imports fr countries w/o sim tax? – Cost of living? - If det wrong, DWL fr tax too!	+ Simply understood - Tax evasion? - Black mkt - Pol. resistance.
QUOTA/BAN	- May not est opt Q, X know MEC... - Any ways to get round it? + Effective in short term...	(as above) DWL due to ban exists Pes dpd on ε, size of ε 2 +DWL ban -DWL ext 	+ Quick & easy to implement - Ease of enforcemt? - Corrupts? - Sustainab over time?
REG OF M	- Dilemma when P-setting (+MC pricing needs sub) - DD/C curves only est, → regulated firm may withhold info → utility firm overstate cost to charge more - RPI-X: X set too low? still supernorm π - Regulatory capture: regulator gets to know firm mgt on personal level, become ↓ strict - Serve pol. interest or eco one? No matter what, better than unreg?	+ Benefit to soc fr ↓ monopoly power + Rev fr tax / - sub costs - ↓ monopoly R&D if ↓ supernorm π? └ ↓ innov, ↓ efficiency? - But should let ntl m keep IEoS: ↓ AC	
LEGIS	- Can get round it?	- Monitoring/enforcemt cost - side effects?	+ Easy to administer - Difficult enforcemt? - Penalties may be harsh.
EDU/PROV INFO	- Effect only in LT, X solve ST prob - Results X guaranteed → What do results depend on?	- Mcost ~ opp cost! * cost of reg must be lower than ben!	

(b) Nationalisatn v Privatisatn

BEN. NTL / -ve PRIV

- ↓ M – ntl M private instead of ntl bad
  - X profit-max → ↓ P
  - ↓ Duplicatn / wasteful comp
  - In ind w/ ext ~ ensure Q opt.
- Equity – e.g. ↓ fares for ↓ Y / post-65s
  - below CoP: eg rural train svc
- Strategic – LT planning
  - vital ind X pub ctrl
  - ↓ instab / SS shocks
- LT govt revenue.

BEN PRIV / -ve NTL

- Profit motive – ineff = loss, bankrupt
  - accountable to shareh.
  - X govt guarantees
- ↓ Bureaucratic
- ↓ X-inefficient, ↑ R&D
- ↓ DOS if too big
- ↓ Govt inteference → pol obj
- Restructuring, layoffs
- Share ownership
- ↓ cost-push inflatn – ↓ ineff
  - no wage ↑ w/o productv ↑
- X crowd out investmt – gov no use $
- ST gov revenue from sale

(c) Govt failure

1. Imperfect info – lack of info
   – inaccurate ~ X est MEC acc ~ outdated / X rep sample
2. Time lag – recognition lag – time to identify prob aft surfaced
   – administrative lag – time to come up w/ discuss policy
   – operation lag – time for measures to take eff
3. Incentive prob – Politics vs eco! May choose vote-buying (tax ↓ pop)
4. Conflicting aims – efficiency v. equity – consump/sin taxes may affect poor more
5. Bureaucracy – time lag, cost of admin.
6. Shifts in policy – uncertainty for firms.

ECONS H2 ④ WELFARE & EQUALITY

① LABOUR MKT

(a) DD for labour (Derived DD)

NON-WAGE DET.

1. ΔP·final pdt (↑P_{pdt}, ↑D_{lab})
2. Productivity of labour (↑prod, D?)
   - marginal revenue pdt = $ of add. gd/svc each unit of lab can prod
   - ↓cost per unit gd per worker when prod↑ = D↑
   - or need less pple to perform task = D↓
   - ∝ edu, tech, capital stock . . .
3. ΔP other FOP
   - capital is a substitute for labour
     - ↳ ↓Pmachines, use mach not lab
   - may also be comp: ↑Qmes, ↑DD_{lab}

DET OF ELAST

1. PED of final pdt
2. Rate of diminishing returns
3. % labour cost to TC
4. Ease of substitn
5. Time period: PED↑ in LR

(b) SS for labour (no. workers × no hr worked)

SS to economy

1. ΔPop: BR/DR; migratn p.
2. Lab force participatn rate
   - ↳ retirement age
3. Tax/benefit levels
   - ↑tax, × incentz to work
   - ↑unemp ben, × incentz to work

SS to an industry

1. No. of pple qualified
   - highly specialized job ↓SS
   - sudden govt req of qualif ↓S
2. Job scope/cond – non wage benefits
3. Δwage/ben in other ind

DET elast: 1. Length of training
2. Special aptitudes – some inherent abilities only held by a few, inelast.
3. Factor immobility.

(c) Wage Differentials

2 TYPES | Dynamic – temp, due to ΔSS/DD
Eqm – Persistent, no inherent forces to elim.

THEORY OF WAGE EQUALIZATN |
- DDlab A ↑, wage ↑ in LT . . .
- But in LT lab move fr jobs w/ ↓wage to ↑wage
- Equalizes wage rates → only 1 P persists.

Assmp 1. Lab. homogenous
2. Lab perfectly mobile
3. All jobs equally attractz
4. Perfect kn, perfect gd & factor mkts

THEORY OF EQ. NET ADVANTAGE | Total ben = Wage + non-wage ben (eg. status, env)
- Wage differentials compensate workers for non-wage
- eg. ↑risk jobs ↑pay.

NON-COMPETG GROUPS | - Heterogenous labour ⇝ Dr × complete w/ cleaners
- Immobile labour

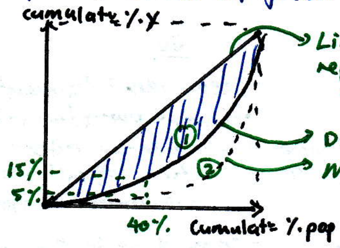
GOV INTV | - Δwage rate: equal opp laws, min wage, CPF, workfare
- SS: trade unions – restrict SS
- DD: monopsonist (dominant buyer of FOP) exploitatn, force wages down.

DISCRIMINATN | Is allocatz ineff!

③ INEQUALITY

(a)
INCOME | $ recv per period of time (flow concept)
WEALTH | Val of person's assets @ certain point in t (stock cpt)

LORENZ CURVE | Cumulatz frequency curve showing ē proportn of ntl Y earned by given % of pop.



- Line of perfect equality rep eq dist of Y
  - poorest 10% earn 10% of Y
  - 30% earn 30% . . .
- ① Deviatn fr 45% = inequality
- ② More ineq – poorest 40% earn only 5% of NTLY vs 15% for ①

GINI COEFFICIENT | Measure deg ineq: $= \frac{\text{Area bet 2 curves (shaded)}}{\text{Total area under line of perf eq.}}$

0.0 = total equality
1.0 = 1 member got all Y.
Validity dpd on quality of stats
↳ can be manipulated, no intl std

Glob av = 0.4
Finland = 0.3
SG = 0.451 (2000)
LatinAm = 0.6

(b) Causes of ineq.

P-MECH | DD
- ↑edu → ineq in access to edu.
- ↑talent
- ↑hardworking
  } ↑prod, ↑return, ↑Y
- Having ē right skills now ⇝ talent to acquire

SS
- ↓able
- aged, sick
- discrim

MISC
- property (non-wage Y)
- inheritance

MONOP | M gains PS at expense of CS.
Ignorance/uncertainty . . .

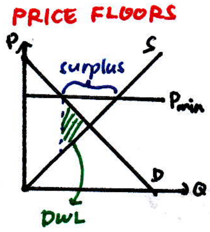
GLOB | Cheaper sources of lab fr overseas pushes down wages in developed countries

CORRUPTN | Power @ corrupt officials → ab to accum wealth for themselves

(c) Problems of ineq (mkt F) & interventn

- Mkt uses prices as signal for res alloc ⇝ alloc to those who can pay
  ↳ those w/ $ dictate mkt (self-int) to enhance own wealth ⇒ ↑ineq!

PRICE FLOORS

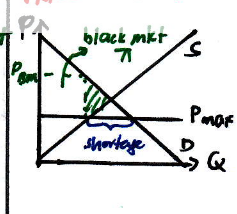


REASONS
- Protect Y of prod (e.g. EU CAP)
  - ↳ ↓fluc
- Create surplus to store (agri buffer stock in case of bad harvest)
- Prev exploitatz (maids)

PROBLEMS
- Surplus – gov must buy – taxpayer $
- Ineff – DWL
- Cushion inefficiency, protect π
- LAB: Unemploymt

SOLN · quotas
- ↑DD-side measure

PRICE CEILINGS



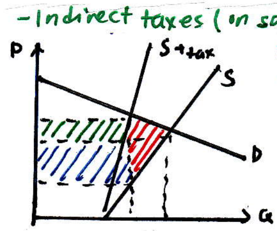
REASONS
- Equity e.g. rent ctrl
- Protect cons e.g. wartime Pctrl

SOLN: SS-side measure
Reg/ctrl BM

PROBLEMS
- Shortage – misalloc of res, DWL
- Exacerbate shortage divert FOP fr al scarce gd, further reduces SS!
- Black mkt (P_{BM}) – unfair extra π BM – violence

TAX

- Progressive income taxes – Disincentz to work!
- Tax on wealth (eg inheritance tax)
- Indirect taxes (on sale of gd/svc) – Tend to be regressive

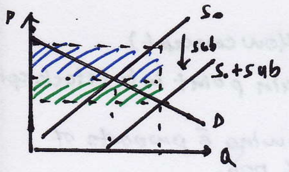


Specific tax: per unit gd
Ad valorem: certain %
– Raise rev for govt – sub – redist

//// Prod burden } gov tax rev
\\\\ Cons burden
– the one w/ ↑inelast curve bear ↑burden

/// DWL ⇝ tradeoff bet equality & inefficiency (see ev in ⑤)

SUBSIDY



Blue shaded area = Prod ben
Green shaded area = Cons ben
— the one w/ ↑inelast ↑ben
— draw corr ben : $Q_0 \to Q_1$

Blue + Green = govt expenditure

BENEFITS

Monetary ben
- L means-tested
  - recp have to prove $Y < Y_{max}$
  - e.g. means-testing in hosp
- L universal
  - e.g. univ state pension, child benefits

Benefits in kind : direct prov of gd/svc

EV
- Gen. ben : disincentive to work
- Expensive to administer
- Low take-up rates
  - forms difficult to fill in
  - embarrassed to apply
- Some $ go to those who don't need it

TRADE OFF BET EQ & EFF !

EC H2 ⑤ MACRO AIMS & INDICATORS

— NIGEL FONG —

Calc of indicators

$\%\Delta: \frac{X(2010) - X(2009)}{X(2009)} \times 100\%$

Internal stability : Sustained growth, Low & stable Inflatn, Low Unemployment

External stability : Healthy BOP, Stable FOREX

① AIMS & IND

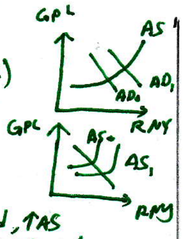
(a) E. Growth

Actual growth + Potential growth (o/p @ full emp)

*mention both.

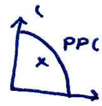
FACTORS

- Actual growth
  1. ↑AD (but ↑↑↑AD : inflation)
  2. Investmt ⟶ ↑AD
- Potential growth
  3. I : capital formatn
     - ↳ ↑infra, ↑eff prod, ↑AS
     - ↳ ↑cap : lab : ↑lab prod
  4. S : ↑S, ↑I (MEI theory)
  5. Ntl res.
  6. Quality & Quantity of lab force
  7. Technology – ↓CoP – new pdts
  8. Stab : domestic / external (eg ↑oil P)



EFFECTS

⊕
1. UnE, min. lost output
   ↳ econ. efficiency
2. Ease of Y-redist, help poor
3. Amt of S & I ⟶ LR growth
4. Mat & Non-mat SoL



⊖
1. Trade off : curr vs future consump
2. Ineq. ... but easier to red?
3. Env cost ... but easier to clean?

INDICATORS

GDP = Val of all final gd/svc prod within given cty in given period t.
- ↳ Ntl pdt = Ntl Y = Ntl Exp
- ↳ Uses
  - Measure EG & SoL
  - Guide to firm plan/policy
  - Gauge EC str of cty
  - Det contrib fr sectr EC
  - Det return to wage, rent, π

Real GDP = Nom GDP − Inf

GNP = GDP − Net Factr Y fr abroad
- + Y accruing to locally-owned FoP abroad
- − Y accr to foreign-owned FOP in cty

GNP − Depreciatn = Net NP

Disposable Y = Y − T + transf paymt

(b) Inflatn

Sustained ↑GPL

Dis" = falling inf

Def" = −ve inf

FACTORS

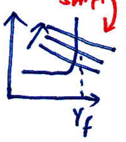
- Anticipated ... can predict & correct for
- Unanticipated – more harmful

1. DD-pull ... ↑AD or ↑MS ..↑X
   - ↳ when no spare cap (Y_f)
2. Cost-push ... ↓AS
   - ↳ supply shock vs sust.Δ
   - → wage-push (unions) w/o ↑prod
   - → π-push
   - → M-price push (*SG)
   - → Raw mat
   - → Str Δ : Slow movement of FOP fr declining to expanding sector
     - Psticky ↓ P↑↑
   - → Tax-push. (check SG ctxt)

⇒ Both : wage-P spiral
- Initial c-push : gov G↑, ↑AD
- Initial DD-pull : workers DD ↑$

*Expectatns (animal spirits)

multiple shift



EFFECTS

INF ⊕ ⊕/⊖ dpd on cause of inf
1. Wage, P sticky ↓
   mild inf allow ↑/↓ rel. Prices.
2. DD-pull inf ⇒ optimism

INF ⊖
- Anticipated
  1. Menu cost : ΔP goods
  2. Shoe-leather cost : ↑trip to bank to min loss in real val of $ - spend quickly
- Unantic.
  3. Incorr P-signals
     - ↳ prod think ↑P, ↑DD, ↑o/p in reality ✗. ... ineff
  4. Uncertain returns, ↓I
     - ↑risks ... non-productv wealth
  5. Redist Y : arbitrary
     - savers lose
     - fixed Y earners lose
     - Creditors lose
     - Finan asset holders lose
  6. P_x↑, X↓ M↑ ... BOP, EG
     - Inf – P_x↑ – Depreciatn – Cost-P inf (cycle)

Eg: final links

DEF ⊕

1. ↑↑P due to ↓CoP

DEF ⊖
1. Real i/r ↑ : choke I
2. Liquidity trap
3. Postpone C & I ... exp P↓ later

INDICATORS

Consumer Price Index
= ΔP of fixed basket of gd/svc commonly purchased by hsehld in specified t

Lim:
1. Consump pattern Δ
2. ✗ capture Δ quality of gd.

(c) Unemploymt

Pple availb for work, seeking work, but ✗ find jobs.

FACTORS

1. Frictional ... due to search for jobs
   - Imperfect kn
   - geo immobility
2. Structural ... due to ΔEC str
   - ↳ lab skills ✗ match av. jobs
   - UnE in sunset ind
   - ↳ Technolg UnE : lab rep by capital

(1–2: Ntl r. of UnE)

3. Cyclical ... due to lack AD
   - ↳ Seasonal

EFFECTS

To govt
1. ↓T
2. ↑Benefits
3. ↑Soc prob

To indv
1. ↓Y, ↓SoL
2. Loss of motiv, deskilling
3. Stress

To firm
1. ↓DD gd/svc
2. ↓pressure to ↑w

To EC
1. Inefficiency ... waste of res

INDICATORS

Unemployment rate
$= \frac{\text{no. UnE persons}}{\text{labour force}} \times 100$

Lab force = EC actv pop 15+ employed or unemp

(d) Balance of payments

1 Current a/c
- gd/svc trade ⋯ Δ TOT, ΔCA, pref
- curr transfers : Π, invest Y ⋯ ΔNY, GPL

2 Capital a/c, migrant transf $
- ST k-flow (hot $) ⋯ i/r
- LT k-flow : FDI ⋯ LR prospects

3. official reserves ⋯ exp Δ ex/r, regulatns

1 & 2 : $\oplus$ = surplus / in
$\ominus$ = Deficit

3 : $\ominus$ = Add to reserv

DEFICIT $\oplus$
1. If due to ↑M capital gd ⋯ k-accum
2. If due to I abroad ⋯ returns

DEFICIT $\ominus$
1. If due to ↓X : ↓AD
2. Depletn of forex reserves / ↑debt
3. Fall in ext val of curr

⋯ Diff cause diff effect

SURPLUS $\oplus$
1. Accum res.
2. X↑ = ↑AD, ↑I inflow

SURPLUS $\ominus$
1. Beggar thy neighbour
2. Appreciatn ⋯ hot $ in : speculatn
   Px↑, ↓X-competitiveness
3. Inflatn ⋯ injectn, ↑MS

$$TOT = \frac{X\text{-}p \text{ index}}{M\text{-}p \text{ index}} \times 100$$

* "p of foreign M in SGD"

② STD OF LIVING

(a) Indicators & difficulty

SoL = material + non-material
↳ $\propto$ amt gd/svc consumed.
↳ Real GDP per cap
elim eff of Δp | elim eff of Δpop } give EGs

Prob measuring : 1. Nonmkt actn eg housework
2. Underground EC eg moonlighting
3. Env degradatn ⋯ polln ↑med $ = growth?
4. Type of gds - - defence gd prod?
5. Equity
6. Non-mat SoL X inc

(b) Intl comparison

- Purchasing power parity-adjusted x/r
  1. Create PPP-adj x-rate : amt of $ that buys fixed bskt of gd/svc in each xtry
  2. Conv NY using PPP-adj figures
  ⇒ Elim diff x/r ⋯ may not reflect PPP

Difficulty : Diff methods of calc
Diff amt of mkt actn
Diff gd consumptn ⋯ eg exp on cold clothing

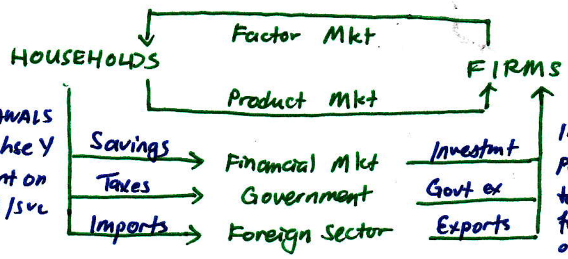
(c) Alts

- China : Green GDP
- HDI : Life exp, Educ, rGDP per cap
- Measure of ec welfare : Acc. leisure, unpaid hsewk
  - defence, commuting
- Index of sust eco welfare : Equity, Polln etc..

EC H2 ⑥ MACRO EQM & POLICY

NIGEL FONG

① CIRCULAR FLOW



WITHDRAWALS
Part of hse Y not spent on dom gd/svc

INJECTIONS
Paymt of Y to producers fr sources other than hse.

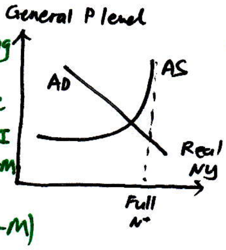
② Y & N^{+} DET

(a) AD-AS

AD = tot lvl spending in EC

- ↑GPL, ↓purc pwr, ↓C
- ↑GPL... ↑i/r, ↓C, ↓I
- ↑GPL... ↑P_x ↓P_m, ↓X-M

AD = C + I + G + (X−M)



AS = Total gd/svc o/p EC as a whole w/d like to prod @ p lvl

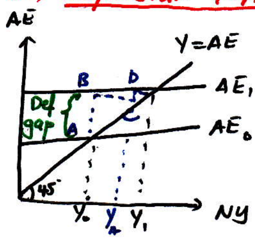
Keynesian (horiz) : o/p < Y_f : spare cap ↑o/p, ↓ inflatn, use ↺

Classical (vert) : o/p = Y_f, x↑ ↑AD → ↑GPL

(c) Det. of AS

	CoP (horiz)	Y_f (vert)
• Input prices	✓	
• Quality of labour input	✓	✓
• Δ tech → ↑eff mtds, ↓res use	✓	✓
• Δ expected inflatn	✓	
• SS-side policy	?	✓

(d) Keynesian Y=AE model



- ↑AE : At orig AE_0, AE > Y
- Unplanned disinvestmt / Deflationary gap AD, use stocks
- Firm ↑o/p by BC to match ↑AE
- NY ↑ fr Y_0 → Y_A
- Induce ↑C : AE↑(C → D)
- Still unplanned disinv. CD
- Cont to ↑o/p until planned AE=Y @ Y_1

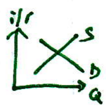
*Y_f = allow for frc un ε

(b) Det of AD

	AD/NY	Interest Rates	Exchange Rates	Inflation	Expectations	Misc
C = Use Y, buy g/s → Autonomous → Induced (αY) APC = c/y MPC = dc/dy	↑AD_{init} − ↑Y_d − ↑$C_{induced}$ ↑C − new ↑Y_d & ↑AD Cont. till J=W (el) ↑NY > ↑AD (multiplier effect)	↓i/r, savings ↓attr loans cheaper ⋮ ↑C (esp big-ttx)	Dep. x/r, P_M ↓ ↑C on M-goods	Expect GPL ↑ Buy now	Expect Y ↑ Buy	• Wealth − life cyc theory • Equity • Tastes c based on exp life Y
I = Acq new fix cap + Accum stocks → Autonomous → Induced	• Rate of ΔY↑ I↑ to prod ↑gd (accelerator) induced I	• Many proj w/ diff exp rate of return (marg eff of I) • I if val future π > cost of I • ↓i/r, ↑I-proj w/ exp return > i/r • ∴ ↓i/r, ↑I	FDIs : Apprec curr − new FDI ↑ex − existing ↑returns	Uncertainty →	• Animal spirits / confidence ? some argue I interest-inelastic	• Tax rates • Cost of k-gds • Tech.
X & M	• ↑NY, ↑M • Esp if M = lux gd	Via x-rate effect →	Devaluatn • ↓P_x in foreign curr • ↑Pm in dom curr • If Marshall-Lerner cond $PED_x + PED_m > 1$ • More than porp ↑X ... (X−M)↑	• Via x-rate effect • Price stability −Pm do not ↑, P_x ↓ (↑CA) − Improve BoP)		• Tastes.

( ) Det. interest rates

* Loanable funds theory



SS : Ppd on S
↑i/r, ↑opp cost of pres C, ↑S

→ Disposable Y
→ Expect future Y

DD : Dpd on willingness of firm to borrow for I & hsehlds to C

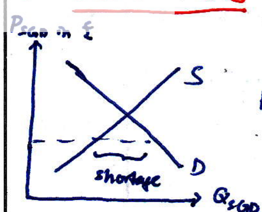
→ Expected π
→ EG & confidence
↘ Tech

Intx → i/r = price of $

* Alternatively, controlled i/r via vert. Ms.

( ) Det X-rates

= val of xtry curr in another curr
"Price of 1SGD in £"



FLOATING

Factors shifting DD for SGD
→ DD for SGD gds by foreigners
→ Relative i/r : hot $ flows
→ Speculatn : expectatns.

LR eqm − Relative GPL Δ
− Relative Δprod
− Tastes & pref

FIXED ... }
MGT FLOAT ... } Buy surplus SGD / Sell if shortage − ↓volatility

③ POLICIES

look @ types

(a) Ev	EG, AD & N⁺	AS / LR Growth	Inflation	BoP	Problems
FP = ΔG & T to achv obj Built-in stabilisers - Progressv T: ↓Y, ↓MTR - Welfare: UnE, ↑welf Discretionary... Exp FP = 'budget for deficit'	⊕ ↑G, ↑AD, ↑NY > ↑AD Multiplier ↑o/p, firms hire ↑N⁺ ⊖ Not for str UnE ⊖ SG: small k ⊖ Fiscal drag: ↑NY, ↑T ⊖ Crowding out I: Govt borrow $, ↑i/r, ↓I : Govt exp, ↑FOP, ↓I ⊖ Pple S↑ when G↑ expect future ↑T	⊕ If FP use w/ SS ⊖ SS-side disincentv ↑T, welf discourg effort	⊕ Contr FP for DD-pull ↓AD, ↓inf ⊖ ↑T ... tax-push inf ⊖ Not for cost-push/ SS-bottlenecks	⊕ Contr FP for deficit ↓C, ↓M ... BoP impv	Timing -Recognitn lag -Administratn lag -Operational lag Lobby gp cannot stop halfway
MP = Govt ΔMs / i/r to achv goals	⊕ DIR: ↑$ on hand ↑C ↑AD IND: ↓i/r, ↑C ↑I (e2) • Hot $ outflow - deprec ↳ Px in foreign $ ↓ Pm in dom $ ↑ ⇒ If M-L cond ✓, ↑X-M • Further ↑NY > ↑AD. • ↑N⁺. ⊖ Not for str UnE	⊕ ↑I ... k-accum, eff FOP use ↑prod cap ↑AS ⇒ LREG. ⊖ SR ↓I harms LR	⊕ Choke inflation via contractionary MP ⊖ Not for cost-push/ SS-bottlenecks	via ex/R mech. ⊖ LR repatriatn of foreign π...	• Timing • May not be eff if I i/r-inelastic • Expectations • May not be able to set own i/r
Ex/R = Value of curr in another curr	⊕ By Δ(X-M) ⊖ SG app to ctrl inf SR (X-M)↓ .. ↓NY		⊕ Appreciatn = ↓inf AS: ↓Pm raw mat ↓CoP, ↓cost-push AD: ↑Px in foreign $, Pm ... (X-M)↓, ↓DD-pull	⊕ Devaluatn corr deficit → Marshall-Lerner cond → J curve ✓ short run: inelast BoP worsen LR : improve ⊖ But if root cause X<A... ⊖ SG app: SR BoP worsen...	• Deficits... • Trade-off.
SS: → improve SS potential ↑efficiency → Mkt oriented PDT: Privatisatn, Dereg Innov, Entrepreneurs. LAB: Edu, ↓indiv tax → Interventionist		⊕ ↑LR efficiency	⊕ Allow ↑AD w/o ↑inf - eg NH wage council	⊕ LR CA maintains • ↑export performance • ↓import penetratn	• Take long time.

(b) Size of multiplier

→ $k = \frac{1}{MPW} = \frac{1}{MPS+MPT+MPM}$

• ↑S, T, M, ↑leakage.
↑Y_1 does not go to ↑NY

→ Takes time to work

→ If part of ↑AD goes to ↑GPL (SS-bottlenecks), ↑GPL dampens k.

(c) SG case

• FP directed at – LR EG
– Equity.
↳ fiscal prudence

• No MP: open Ec trilemma
Cannot hv fixed e/r, indep MP, & free cap mvmt

• Focus X/rate
– Small Ec, ↑trade = 500% GDP
Δworld P inf GPL loc
– Open: ↑cap mob.

(d) Tax

Direct: Y-tax, π-tax
Indirect: Consump tax

Impact: Tax levied on..
Incidence: Eventual burden on...

Principles
1. Equity
2. Economy
3. Convenience
4. Certainty
5. Flexibility
6. Diff to evade

(e) Evaluate

• Tradeoffs
• SR/LR
• Combi
• Tinbergen: 1 policy instr, 1 obj.

EC H2 ⑦ TRADE & GLOBALIZ.

NIGEL FONG

① TECH & TOT

(a) Defns

TRADE | Xchg of gd/svc bet xtries ... diff curr, cross borders

GLOB | 1. Gd & svc trade ↑
2. Labour flows ↑
3. Capital flows ↑ ... FDI + hot $
} deal all 3

(b) Terms of trade

$$TOT = \frac{X \text{ price index}}{M \text{ price index}} \times 100$$

Improve = ↑
Worsen = ↓

FOR SG...	TOT	BOT
↑DD_M (e.g. ↑NY) − ↑P_M	Worsen	Worsen
↑DD_X (e.g. tech) − ↑P_X	Improve	Improve
↑SS_X (e.g. ↓CoP) − ↓P_X	Worsen	Improve ... DD_X p-elastic : ↓P ↑TR
↑SS_M (e.g. ↓CoP) − ↓P_M	Improve	Improve ... DD_M p-inelast : ↓P ↓TR

* Effects of ΔTOT on BOT depends on cause of ΔTOT

(c) Trade & Realloc res.

ΔTOT : • ↓P_M ↑Q_M
• Cons switch fr dom M-subst to cheaper M
Δ res alloc : • ↓M-sub ind, res alloc to X-oriented ind
• ↓CoP for X-oriented ind (cheaper M inputs)
Benefits : • ↑X competitiveness + Cheaper cons gds

* On on CA deficit ... talk abt both Xs & Ms

② TRADE & COMPARATV ADVANTAGE

(a) CA : DEF

DEF CA | = Ability to prod @ lower opp cost compared to anr xt

LAW. CA | Trade will arise bet 2 xtry if diff in CA of producing particular goods

(b) Sources of CA

FACTOR ENDOWMT | Diff xtry diff CA as res unevenly dist
− Xtry w/ fertile arable land ... CA in prod agri
− Xtry w/ abundant labour ss ... CA in lab-intens

TECH | Ability to keep ahead, first-mover advantage

* CA changes & can be created − industrial policy
− EOS

(c) Trade based on CA

• Xtry w/ lower opp cost in prod of gd will spec. in it (or, part of ss chain of same gd)
└ export the good w/ CA & M gds w/o CA

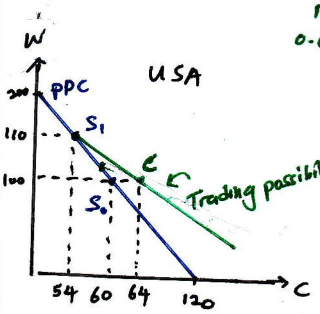
• World o/p ↑ : resources realloc, used ↑eff

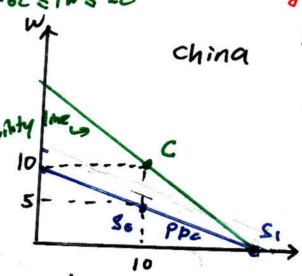
NUMERICAL ILLUS.

	Wheat	Cloth	Opp c		Specialize (Assume TOT 1W : 1C) Wheat	Cloth
USA	100	60	$\boxed{1W}$ (CA)	0.6C	110	54 ↑World tot
China	5	10	1W	$\boxed{2C}$ (CA)	0	20 ↑Each xtry
World	105	70			110	74

Range of TOT : 0.6C ≤ 1W ≤ 2C

* Change the EG!





Prod constrained by PPC

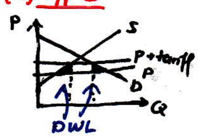
Trade allows consump beyond PPC − ↑welfare

③ CBA : GLOBALIZATN ~ examine in/out for each

	+	−	EV
TRADE	• ↑intl mkts − X growth • EOS, ↓CoP • CA • Lower P & ↑variety of cons pdt • access to unav raw mats	• Vulnerability − cost-push inf − SS & DD shocks • Competn for dom. └ Y-disparity └ 1st mover adv: rest left behind • Trade diversion fr ↓cost prod to ↑cost FTA members ...	• Ntl barriers : tpt costs • Ov: dpd on xtry's ability to sustain CA • Dist effects need intv • Promoting FTA results in str Δ : mitigate
LABOUR lab. flow subst for goods flow	• Wage differential attr. lab into ↑productivity • ↑opportunities • Remittances • ▲lab scarcity (source, dest) • ↓wages − cheaper gds? • Talent inflow : dvp kn-int industry but outflow ...	• Local workers ↑comp └ str UnE. └ substituting (↓W) • Brain drain & lose +ve ext of skilled labour • Unskilled mmg ↑social costs, integ ...	• Ability to attract & retain talent det impact • Ctrl inflow.
CAPITAL	• ↑π for source ctr. • Firm competitiveness • ↓cons prices • I↑ − growth, ↑T • Tech • ↑mgt skill } demonstrate, compete	• Outsourcing : ↓N+ @source, loss of T • π-repat. • Dutch disease : curr app, ↓X-competitiveness • Crowding out (phy/finan), comp. for SME • Instab : move if prob	• Ability to attract capital − infrastr, sound gov... • Dpd on type of FDI • Dpd on policy to support └ retraining : str UnE └ min % π reinvestmt min % local employee.

④ PROTECTIONISM

(a) Types



• Tariffs : protect dom M-subst, gov rev.
but cause DWL & ↑cons prices
• Quotas : ↑P to both local & foreign, no gov rev
• X-subsidies ...
• Reg : eg "buy Am" gov procuring, tech specifications to shut out M ...

(b) Arg for

1. If Ms due to unfair trade practices, + get gov revenue!
• Dumping : sell gds below marginal CoP, force local comp out to get M.
• Underval X-rate.

2. Cushion decline of sunset ind − reduce impact of sudden UnE
− time for retraining
3. Protect infant ind ... heavy initial costs, small o/p
└ but hard to identify suitable inf. ind.
4. Self-prod of critical gds : food SS, defence
5. Correct BoP deficits (dpd on PEDs)

(c) Arg against

1. Against CA − if cheaper Ms due to genuine CA → trigger retaliatn
2. Not add root cause + gen complacency
3. Inflation : local prod ↑P than Ms