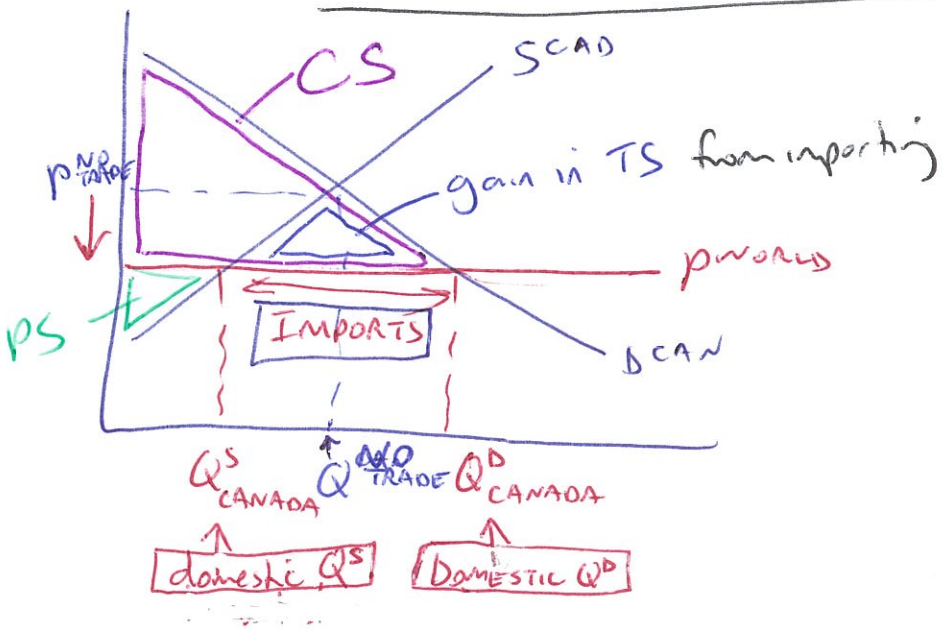
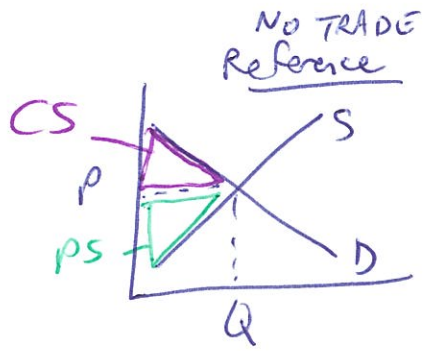
Global Markets in Action

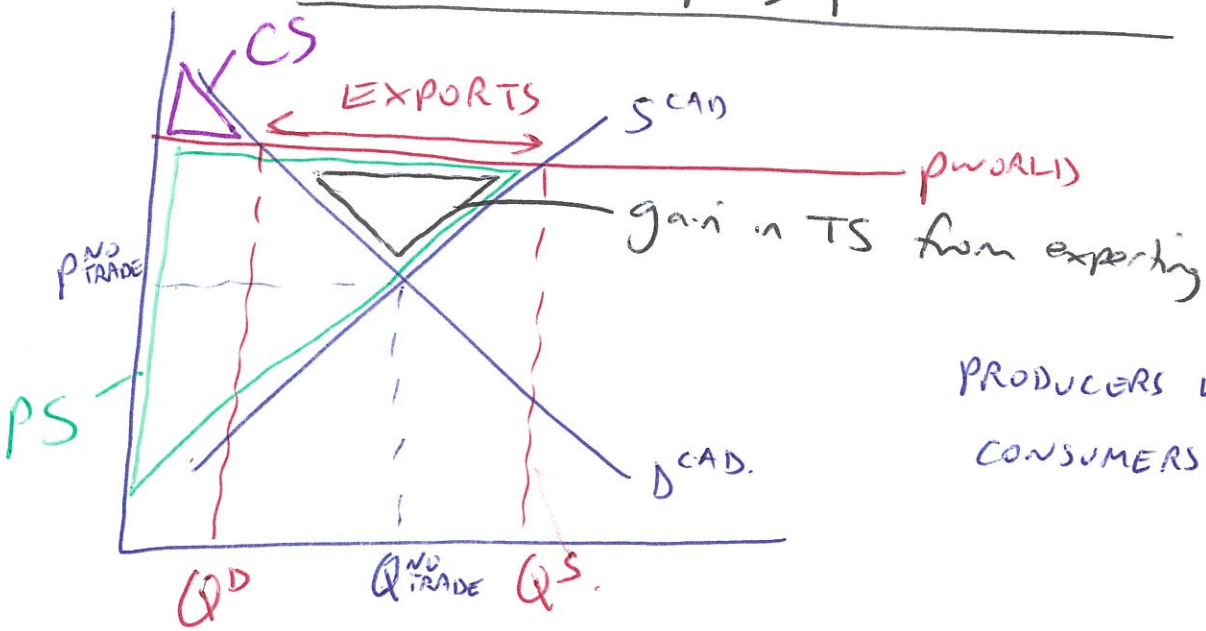
IMPORTS : $p_W < p_{DOMESTIC}$



CONSUMERS WIN
PRODUCERS LOSE

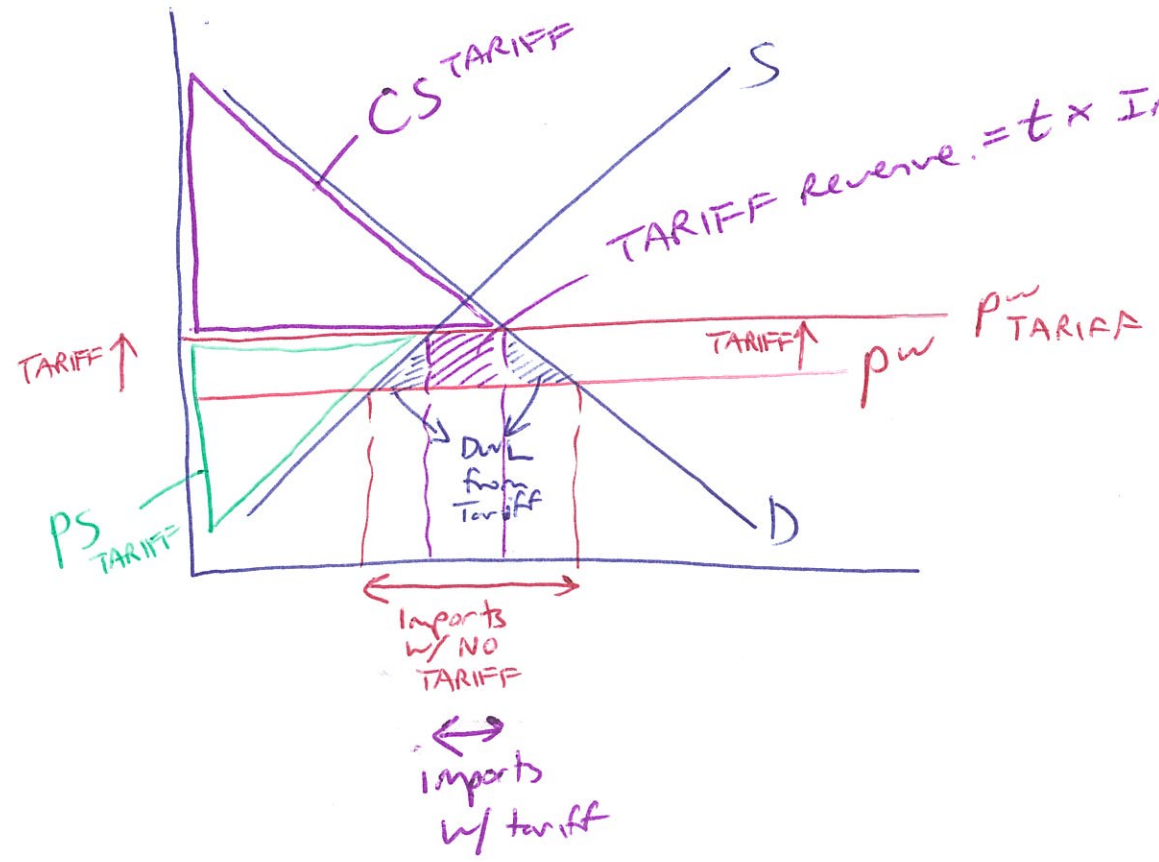


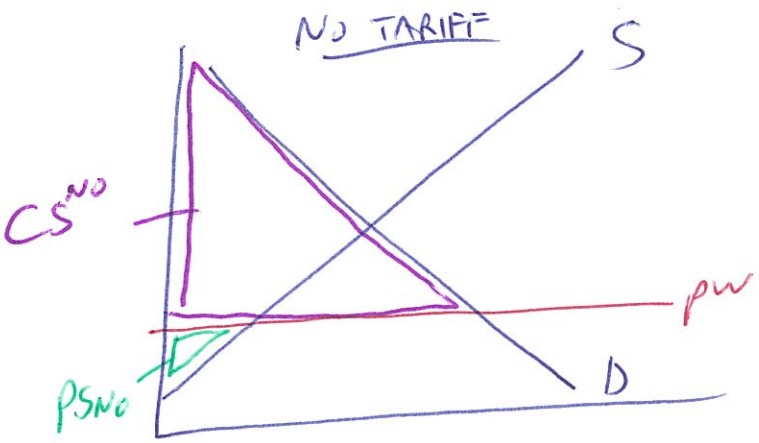
EXPORTS : $p_W > p_{DOMESTIC}$

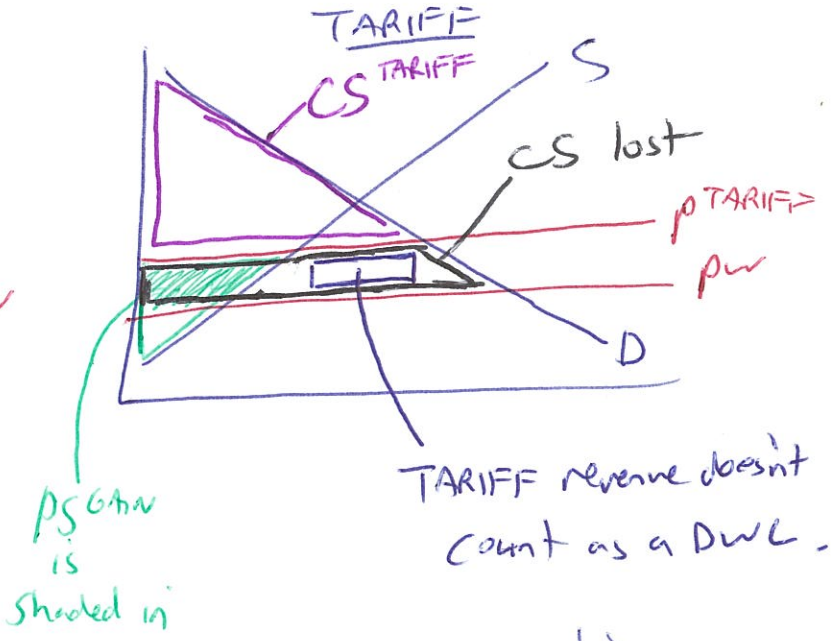


PRODUCERS WIN
CONSUMERS LOSE

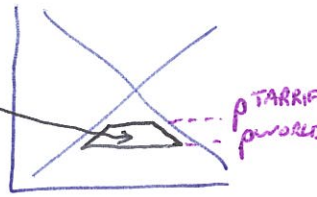
TARIFFS : tax on imports.



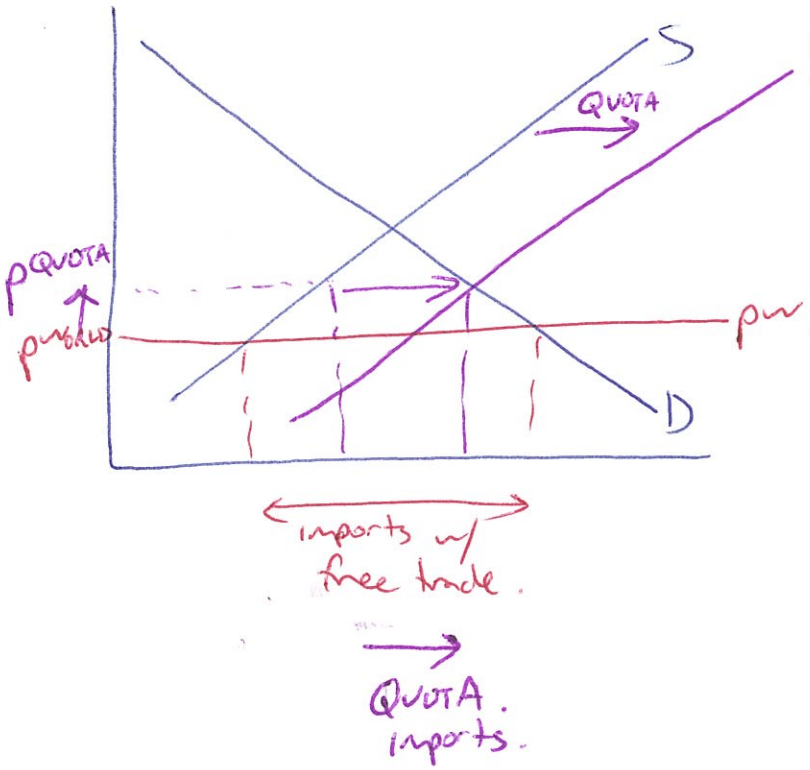


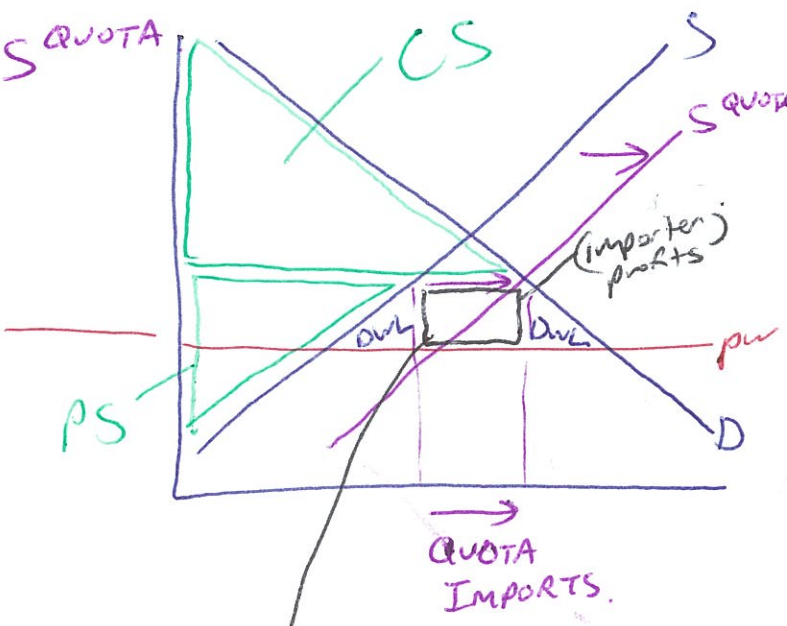


NOTE above that PS gained < CS LOST by



IMPORT QUOTAS: limits a max quantity of imports.





Importers don't have to pay this as a tariff so they keep it as a profit

NOTE: PS ↑
CS ↓
DWL is created.
tariff revenue is replaced by importers profits.

EXPORT SUBSIDIES: a payment by the govt. to the producer of an exported good.

- illegal under NAFTA + WTO.

North American Free Trade Agreement

world trade organization

DID NOT TAKE NOTES ON PAGE 163-167 (TOO MUCH WRITING!!)

Ch. 24 Money, P and π

MONEY: any commodity or token acceptable as a means of payment. (ie. cigarettes in jail). settling a debt.

3 fns

Medium of Exchange (to avoid barter which only works when there is a double-coincidence of wants. ie. I want chocolate, have gummy bears. You want gummy bears, have chocolate).

Unit of Account: agreed measure for stating prices. "Accounting"

Store of value: held + exchanged later for goods (apples would spoil, gold is ok!) (inflation would hurt this since $100 today = ↓↓ tomorrow).

MONEY

currency (notes + coins) held by individuals + firms (NOT by banks).

Deposits at banks, trust + mortgage companies, credit unions, etc.

MEASURES

M2 { M1: currency plus chequable deposits owned by individuals + businesses.
+ everything else (ie. non-chequable deposits).

M1 is more liquid than M2 (can be converted to use for payments very easily).

↖ easy to use for transactions

Cheques are not money.. and neither are credit cards.

BANKING SYSTEM → BoC (BANK OF CANADA)
- Banker to banks + govt.
- Lender of last resort.
- Sole issuer of bank NOTES. ($ and ¢).
- Changes Interest Rates

↓

Depository Institutions

Chartered Banks, credit unions, etc.
- → hold reserves.
- → hold liquid assets.
- → securities (bonds).
- → loans.

} provide benefits such as { create liquidity (borrow short + lend long). / pool risk / lower the cost of borrowing / lower the cost of monitoring borrowers

BoC Balance Sheet

Assets (Sources)	Liabilities (Uses)
Govt of Canada securities.	Bank of Canada Notes. (Dollar Bills) "currency in circulation"
+ Loans to banks. by BoC.	+ Deposits (Reserves) of banks at BoC
Monetary Base	Monetary Base.

banker to the govt.

banker to the banks.

↑ Supports the nation's money

To change the Monetary base, BoC conducts open-market operations

Open Market SALE purchase: sells $100 security to from CIBC.

BoC

Assets	Liability
Securities. +100 −100	CIBC reserves +100 −100

CIBC

Assets	Liabilities
Securities +100	
Reserves +100	

CREATING MONEY

You spend money on Visa ⇒ credit (+) into Esso's account. (so Esso's Deposit has ↑).

money ↑

remember: deposits count as money but loans don't!

The loan comes out of the reserves of the lending bank.

your bank

you owe the bank money: Assets	
loans ↑	
reserves ↓	

your bank pays esso →

esso's bank

Assets	Liabilities
reserves ↑	deposits ↑

↑ esso's deposits go up. (New money!).

LIMITS ON MONEY CREATION

1) MONETARY BASE
2) Desired Reserves. $\left(d = \frac{\text{reserves}}{\text{deposits}}\right)$
3) Desired currency holdings. $\left(c = \frac{\text{currency held}}{\text{deposits}}\right)$

$$mm = \frac{1+c}{c+d}$$

A bank is required to hold a small % of deposits as reserves but it has a desired ratio : $\frac{\text{reserves}}{\text{deposits}}$ (It's plan). If reserves get too low ⇒ they must ↓ deposits.

The bank gives out reserves when it makes loans as people leave with currency. This currency leaking from bank reserves is called currency drain :

currency drain ratio : $\frac{\text{currency held}}{\text{deposits}}$.

The process of money creation

BoC buys security from TD. and ↑ TD's reserves (OUT OF NOWHERE)
⇒ NOT MONEY YET !!

⇒ This creates excess reserves. which can be loaned out (and will be since the reserve ratio is > than desired)

(NOTE that $\frac{\text{reserves}}{\text{deposits}} \uparrow \geq$ desired)

⇒ the loan creates a new deposit ⇒ ↑ money !!

⇒ new money makes a payment and some is left in deposit (some is a currency drain).

↳ As deposits ↑, the reserve ratio falls. and excess reserves are lower.

If BoC sells securities they ↓ banks' reserves.
⇒ so banks have negative excess reserves.
⇒ they call back loans ⇒ deposits ↓.

The Money Multplier (mm)

the ratio of change in quantity of money to the change in monetary base.

If Δ monetary base = 1m $\Rightarrow$ ΔM = 2.5m.

then $mm = \frac{\Delta M}{\Delta \text{base}} = 2.5$.

↓ desired reserved ratio = $\frac{\text{reserves}}{\text{deposits}}$ ↑
↓ currency drain ratio = $\frac{\text{currency}}{\text{deposits}}$ ↑ $\Rightarrow$ ↑ mm.

(since both are associated w/ ↑ deposits)

Math Note (pg. 586-587).

Suppose desired reserve ratio = 10%
currency drain ratio = 50%

MONETARY BASE ↑ by 100,000. $\Rightarrow$ 1 bank has excess reserve of 100,000.

(1st new money created)

lends out the 100,000 but deposits = 2 × currency. ($\frac{\text{currency}}{\text{deposits}} = \frac{1}{2}$).

so { currency ↑ by 33,333.
deposits ↑ by 66,667 ← next new money created.

Now bank only has to keep 6,667 as reserves so they have 60,000 to lend out. (excess reserves = 60,000).

Keeps going until 250,000 new money is created

New money = $100k(1 + .6 + .6^2 + .6^3 + \dots) = \frac{100k}{1-.6} = 250k$

mathy: $1 + x + x^2 + \dots = \frac{1}{1-x}$

$\frac{\Delta M}{\Delta MB} = mm = \frac{1+c}{c+d}$; c is currency drain ratio, d is desired reserve ratio

$\frac{1+.5}{.5+.1} = \frac{1.5}{.6} = 2.5$

So if c = 0

$\Rightarrow mm = \frac{1}{d} = \frac{1}{\text{desired reserve ratio}}$

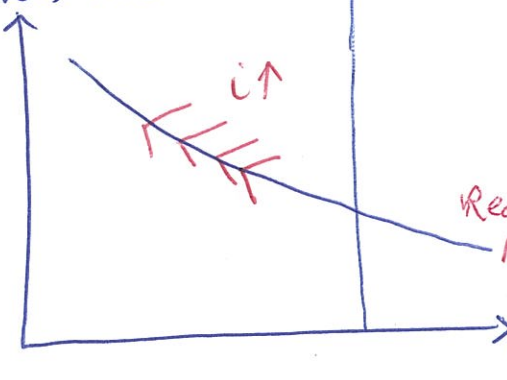
(in this case $mm = \frac{1}{.1} = 10$ if c = 0)

if c = 0 and d = 1 (100% of deposits held as reserves)

$\Rightarrow mm = 1$ (100$ ↑ in reserves $\Rightarrow$ 100$ ↑ in MS)

(no money multplication then)

MONEY MARKET



money doesn't earn interest whereas other instruments (bonds) do, so interest is the opportunity cost of holding money.

$i\uparrow \Rightarrow \downarrow MD.$

If P↑ ⇒ you need more nominal money to buy same amount of stuff.

NOMINAL → $\frac{\$20}{\$2} = 10 = \frac{\$30}{\$3}$ ← P

- real money is independent of price!! It is counted in terms of "things" that money can buy.

$i^{BONDS} \Rightarrow$ As $i^{BONDS}\uparrow$, people hold less money & buy bonds instead.

technically: opport. cost of holding money $= i^{BONDS} - \underbrace{i^{money}}_{\text{close to or equal to zero.}}$

NOTE: $i = r + \pi$, so if $\pi\uparrow \Rightarrow i\uparrow$

inflation erodes the value of money

Real GDP: $\Rightarrow Y\uparrow \Rightarrow$ MD increases. (shifts right!).

(feel richer ⇒ want more stuff).

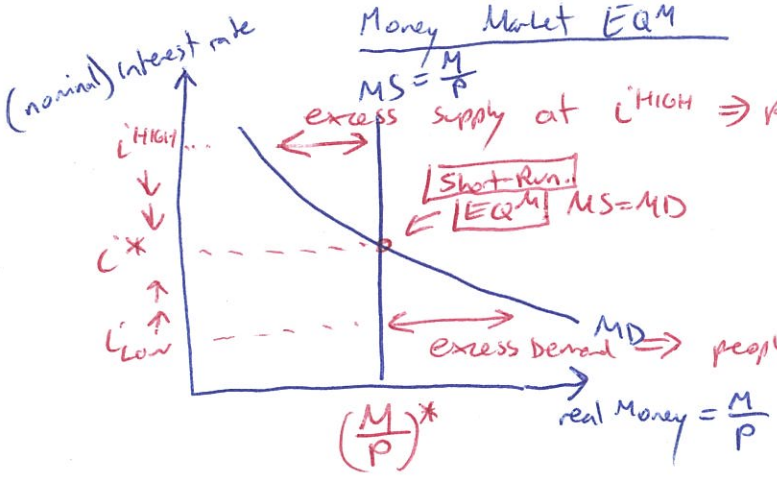
$Y\downarrow \Rightarrow$ MD left.

financial innovation ⇒ Internet banking, ATMs, etc.

↑ innovation ⇒ ↓ reason to hold money

⇒ MD left (decrease)

Money Market EQM



(go to LF markets to buy bonds)

⇒ people ↓ holdings and purchase bonds instead.

⇒ p^{BONDS} ↑ and i ↓

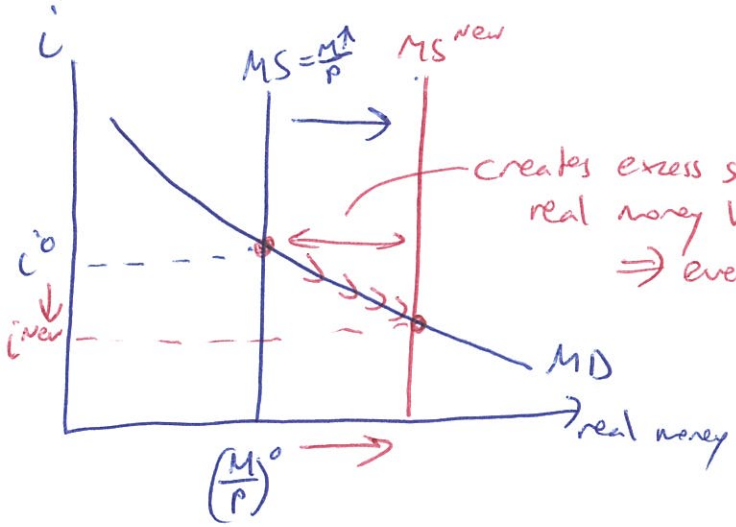
(excess MS disappears)

⇒ people sell bonds to get money.

⇒ p^{BONDS} ↓ and i ↑

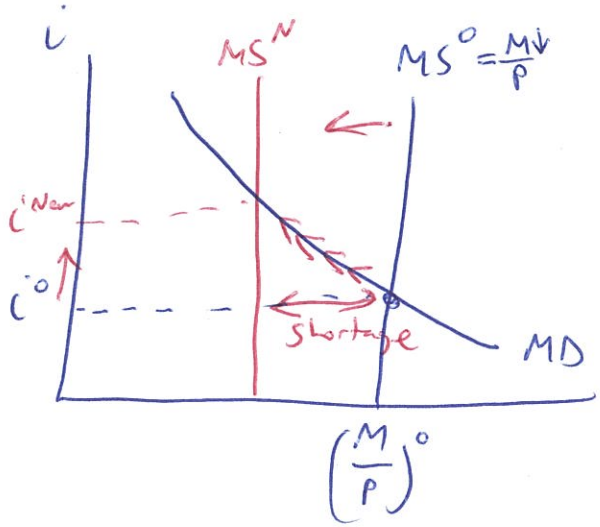
Suppose BoC wants to ↓ interest rates.

⇒ open market purchase of securities (pays for it by ↑ Banks' reserves ⇒ excess reserves ⇒ new loans ⇒ ↑MS (right))



⇒ everyone buys bonds. (p^{BONDS} ↑ ⇒ i ↓)

- To ↑ interest rates ⇒ BoC conducts open market sale of bonds.



⇒ Banks' reserves ↓

⇒ reserves < desired ($d = \frac{\text{reserves}}{\text{deposits}}$)

⇒ loans called back

⇒ ↓ MS (left)

⇒ now shortage of money holdings

⇒ everyone sells bonds.

p^{BONDS} ↓ ⇒ i ↑

LR EQM

$i = r + \pi$

if $\pi = \pi^{expected}$, and $Y = Y^{POT}$

then MM is in eq^m, LF markets in eq^m, goods market and Labour market are in eq^m.

If BoC ↑ quantity of nominal money., it doesn't change anything REAL!

(Prod fn, LD+LS) (MS, MD) (DLF, SLF)

Labour market, goods market; MM, LF all unchanged.

$L^*, \left(w^* = \frac{W}{P}\right)$ Y^{POT} $\left(\frac{M}{P}\right)^*$ (r^*)

Only the price adjusts. to make real MS = real MD.

So if nominal money ↑ by 10%

⇒ Price ↑ by 10% in LR.

GENERALLY

If nom. money ↑ ⇒ $\frac{M\uparrow}{P}$ shifts right (MS right) ⇒ $i \downarrow$ & $r \downarrow$

⇒ $i \downarrow$. ⇒ more borrowing & spending $\left(\begin{matrix} C\uparrow \\ I\uparrow \end{matrix}\right)$ (AD right)

⇒ shortage of goods & services. ⇒ P ↑

As P ↑ ⇒ $\frac{M}{P\uparrow}$ shifts left (MS left).

⇒ $i\uparrow$ and $r\uparrow$

⇒ shortage of g+s disappears.

NOM. MONEY ↑ ⇒ P ↑ but no real changes.

QUANTITY THEORY OF MONEY (QTM): $MV = PY$

P adjusts in LR so real MD = real MS.

QTM: An ↑ in quantity of money ⇒ a similar % ↑ in P.

VELOCITY OF CIRCULATION: average # of times a dollar is used over a year!

Y is real GDP.

$$P \times Y^{(\text{Real})} = GDP^{(\text{NOMINAL})}$$

$10 \times 5000 = 50{,}000$

Suppse there is $2,000 in NOMINAL Money.

Then each dollar must have been used 25 times

$$V = \frac{P \times Y}{M} = \frac{10 \times 5000}{2000} = 25$$

$$\Rightarrow MV = PY \quad \text{and} \quad P = M\left(\frac{V}{Y}\right)$$

(V/Y) — independent of M.

Note: if two variable multiply ⇒ their growth rates are added.
if two variable divide ⇒ their growth rates are subtracted.

$$P = M\left(\frac{V}{Y}\right) \Rightarrow \pi = \underbrace{\text{growth rate of money}}_{} + \underbrace{\text{rate of velocity change}}_{} - \underbrace{\text{real Y growth rate.}}_{}$$

$$\text{OR} \Rightarrow \pi = g_M + g_V - g_Y$$

$g_V \approx$ Zero and unaffected by g_M

$g_Y \approx$ assumed Zero in QTM. (in LR: $Y = Y_{POT}$)

so $\boxed{\pi \approx g_M}$ in LR.

Inflation is strongly correlated with growth rate of money.

(Equal if velocity and Y_{POT} are unchanged).

Ch. 25 Exchange Rate and BoP (Balance of Payments) (1)

FOREX (Foreign Exchange) Market : COMPETITIVE!! Determined by D and S.

1) Importers need to pay in exporting country's currency. (foreign currency).
(China imports CAD oil, needs to pay in CAD$).

2) currencies are exchanged (bought + sold) in FOREX market. ($600 trillion a year)
includes: goods traders, banks, Intl. investors + speculators, travellers and specialist traders (forex brokers).

3) CAD exchange rate with Japan : $\frac{\text{JAPANESE YEN}}{1\ \text{CAD\$}}$ (price for 1 CAD$)

If exchange rate ↑ ⇒ CAD$ appreciates (gets stronger).

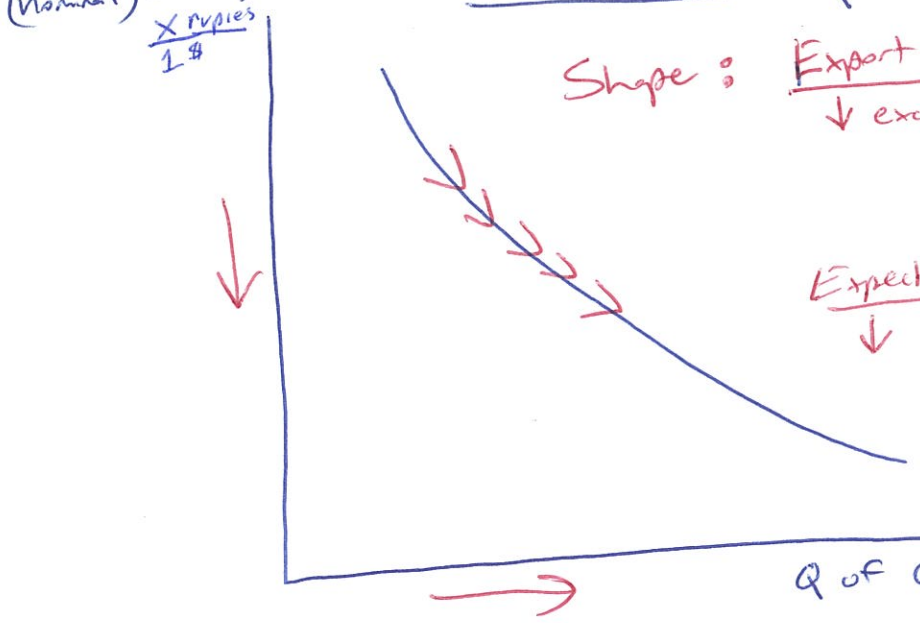
$\frac{79\ \text{Yen}}{1\ \$}$ ↑ to $\frac{81\ \text{Yen}}{1\ \$}$ (Now 1 CAD$ can buy more yen than before

⇒ CAD$ appreciates.
⇒ YEN depreciates

4) If a CAD wants to sell CAD$ to get YUAN.
⇒ Demand for YUAN increases. (shifts right)
⇒ Supply of CAD$ increases (shifts right).

Value of a $ OR price of a CAD$ in foreign currency
(Nominal) exchange rate

FOREX MARKET.

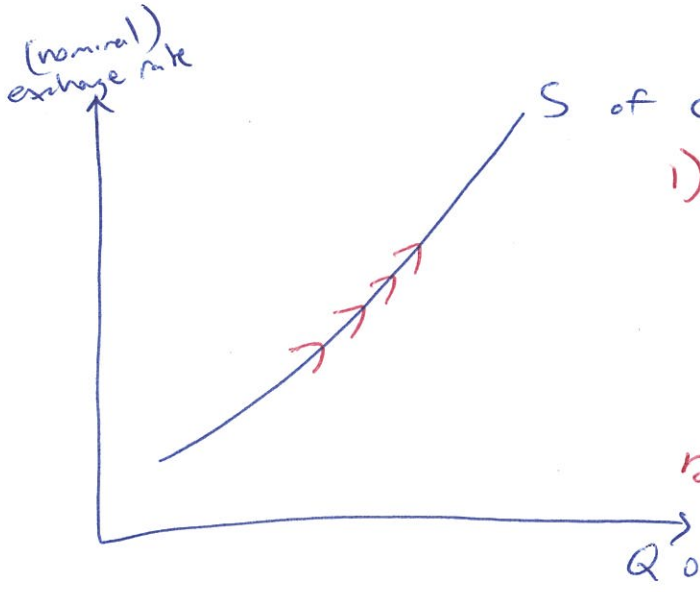


(Demand affected by : exchange rate
World demand for exports
interest rates across countries
Expected future exchange rate.

Shape : **Export effect :**
↓ exchange rate ⇒ our goods are cheaper.
⇒ more foreigners want them
⇒ more demand for CAD$.

Expected Profit Effect
↓ price today (↓ exchange rate) ⇒ "cheaper"
⇒ more profit from holding them for resale later.

Demand for CAD$ is downward sloping.
because
1) export effect.
2) Expected profit effect.



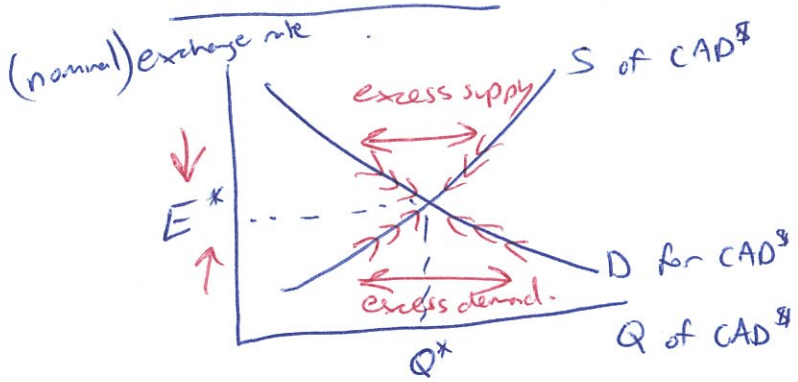
S of CAD$ is upward sloping because.

1) Import Effect.
↑ exchange rate ⇒ our $ is stronger.
⇒ imports are cheaper
⇒ need foreign currency to buy them
⇒ offer CAD$ in exchange.

2) Expected Profit Effect
↑ price today
⇒ more profit from selling them today vs. waiting.

S of CAD$ affected by: exchange rate
CAD demand for imports.
interest rates across countries
expected future exchange rates.

Market EQM



In EQM

No opportunity to make profits by buying & selling currencies.
If there was, the exchange rate would adjust to eliminate it.
(Known as Arbitrage)

Shifts in Demand for $

1) ↑ Demand for exports ⇒ D right.
2) i^{CANADA} ↑ (relative to other i) ⇒ CAD bonds more valuable
(interest rate differential) ($i^{CAD} - i^{Foreign}$) ⇒ D right.
3) $E^{future\ expected}$ ↑ ⇒ ↑ expected profit from holding $
⇒ D right.

Shifts in Supply of $

1) ↑ Demand for imports ⇒ S right.
2) ↑ ($i^{CANADA} - i^{FOREIGN}$) ⇒ S left
(less $ for sale).
3) $E^{future\ expected}$ ↑ ⇒ ↑ expected profit from holding $
⇒ S left.

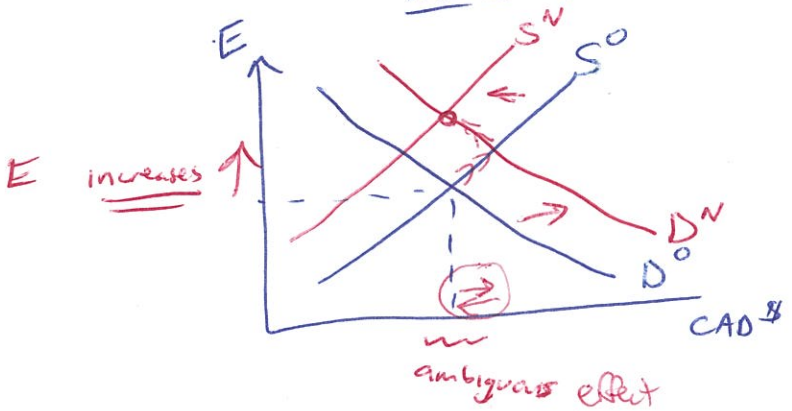
NOTE: You CAN MODEL THESE USING Both Supply or Demand shifts !!

Note: expectations about ftue exchange rates depend on the FUNDAMENTAL INFLUENCES

1) WORLD Demand for Exports & Imports.

2) RELATIVE INTEREST RATES.

ie. BoC announces it will raise interest rates:
⇒ traders expect CAD$ to appreciate (people want our bonds as i↑)
⇒ D for $ shifts right.
and S for $ shifts left.



Arbitrage (buying & selling for profit) causes E to ↑ until all possible profits are eliminated.
(no profit from borrowing in one currency & lending in another,
no profit from buying goods in one currency & selling in another).

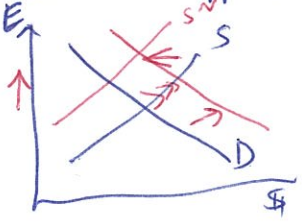
Interest Rate Parity: equal rates of return due to arbitrage.

$i^{CAD} = 3\%$
$i^{CHINA} = 7\%$
} D^{CAD} right on expectations. ⇒ CAD$↑

(people buy Yuan to get higher Yuan return
but they are concerned about falling value of YUAN relative to $ (-4%))

- risk and expected reward balance until no opportunity for arbitrage

so lower return on i but higher return on E



Purchasing Power Parity (PPP)

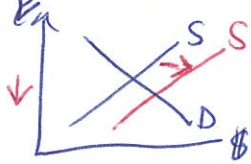
equal value of money

if . $E^{CAD} = \frac{7\ YUAN}{1\$}$

pokemon cards = 21 YUAN IN CHINA = 3$
4$ in CANADA

buy in China, sell in CANADA.
import demand in CANADA (need YUAN to import)
⇒ S^{CAD} right ⇒ E↓.

until PPP restored.



$E = \frac{21Y}{4\$} = \frac{5.25Y}{1\$}$

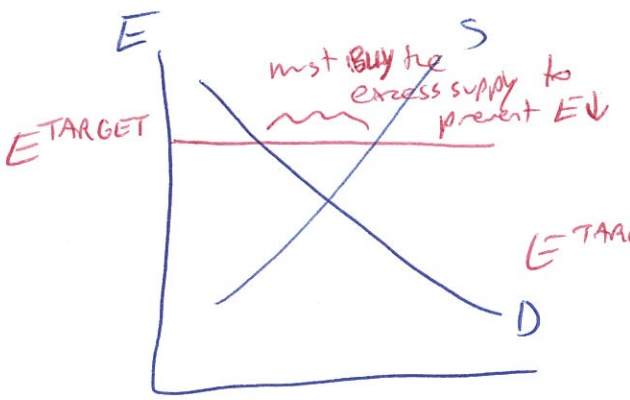
now $4\$ \times 5.25Y = 21Y$.

Exchange Rate Policies

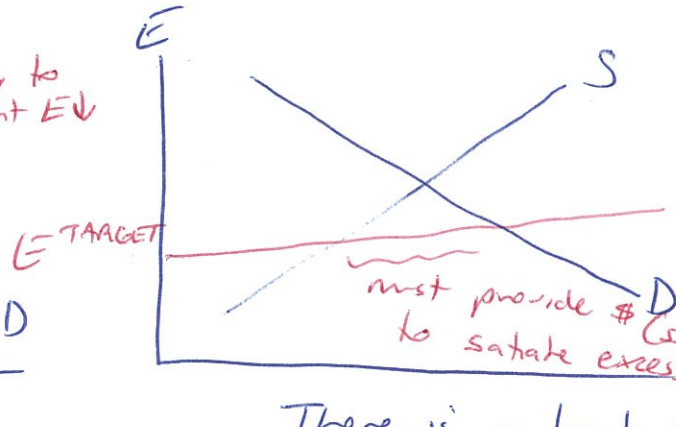
(5)

1) Flexible Exchange Rate. : determined by D + S in FOREX.
(remember that BoC actions inadvertantly affect E (through affect on i).

2) Fixed Exchange Rate : determined by Govt. of central Bank.
(to block the forces of D + S).
ie. Hong Kong, Venezuela
requires active intervention in FOREX market



To keep exchange rate at this high level, BoC must use foreign reserves to buy all the $ (excess supply)
Eventually will run out.
(ie. Venezuela)



There is no limit to how many $ the BoC can sell.
In exchange it will accumulate foreign currency (reserves).
(ie. China)

3) CRAWLING PEG : 'A slowly moving (slowly) E^{TARGET}.
(ie. China)

- typically used to control inflation or avoid large destabilizing swings in the currency. (stabilizes trade & exports in particular)

FINANCING INTL. TRADE

Balance of Payments Accounts (BoP)

records trading borrowing & lending

"FOLLOW THE MONEY"

1) Current Account. (CAB)

exports → cash comes in (+) ← credit

imports → cash goes out (−) ← debit

small { net interest income → cash in (+)
Net transfers → cash out (−).

2) Capital and financial Accts. (KA) "NFB"

(NFB) foreign investment in CANADA (+). cash in CAD borrowing from abroad.
(foreigner buys CAN bond or factory)

(NFL) CAD investment in foreign country (−) cash out. i.e. to CAD lending to foreigners.
(CAD buys foreign bond or factory).

3) Official settlements Account.

- follows changes in CAD official reserves.

if reserves ↑ (we paid out CAD$ to get them) (−)

if reserves ↓ (we got paid CAD$ for them) (+)

1) + 2) + 3) = zero. ⇒ CAB + KA + Official settlement Account = zero.

if CAB < 0 (imports > exports) ⇒ KA > 0 (borrow to cover it)

or ↓ reserves to cover shortfall.

NOTE: A debtor nation has accumulated borrowings (KA > 0) that exceed lendings (KA < 0).

A creditor nation has lendings > borrowings.

Being a debtor: Not a problem if borrowings are used to
↑ productivity ⇒ ↑ econ growth. ($\uparrow Y^{POT}$).
(earns return that pays off the interest).
- problem if used to finance consumption (twinkies).

Note $CAB = X - M$. = Net exports.

$$Y = C + I + G + X - M.$$

and $Y - T = C + S \Rightarrow Y = T + C + S.$

so $T + C + S = C + I + G + X - M$

$$(T - G) + (S - I) = (X - M)$$

- $(T-G)$: govt sector balance
  - if negative, needs to be financed by other sectors.
- $(S-I)$: private sector balance
  - if negative, is financed by other sectors.
- $(X-M)$: Current Account Balance = NFL

ACTUALLY
CAB = NX + Net Interest Income + Net Transfers.
to be precise

↑ govt budget deficit ⇒ ↑ current account deficit
$(T-G)\downarrow$ $(X-IM)\downarrow$
"TWIN-DEFICITS"

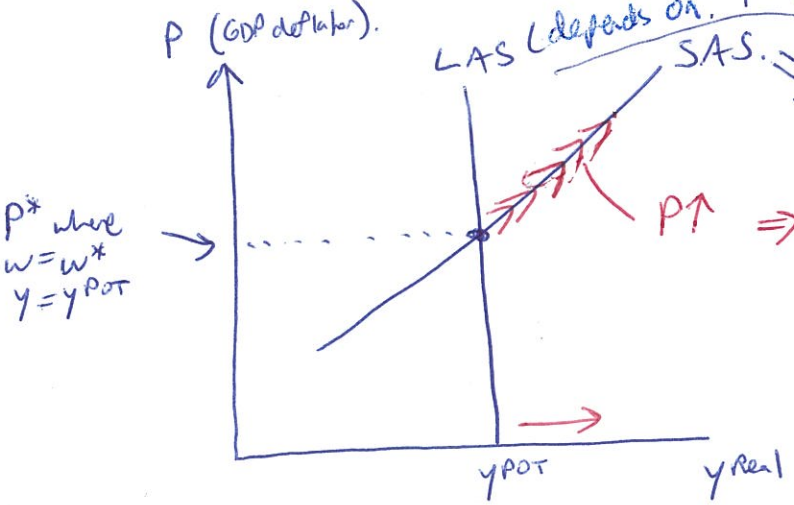
effects of Δ in E

SR: $E\downarrow \Rightarrow$ M↓ and X↑
NX↑ ⇒ current account ↑ (less of a deficit)
- also could ↓ spending on imported C so ↑ Savings. (↑S)
- foreign capital goods become more expensive ⇒ I↓

if S↑ and I↓ ⇒ Current Account ↑. (lower deficit).

LR: no effect on RER so can't affect CAB. (NX↑, C↓, I↓)

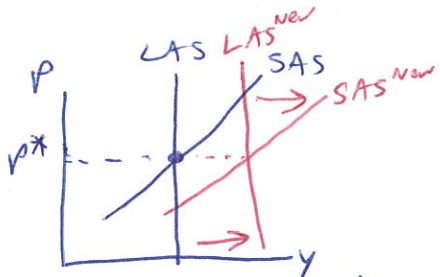
Ch. 26 AS/AD.



Note: Q of Kapital & technology is fixed (depend on past decisions).

SR: money wage, W, is fixed.

LR: $P\uparrow \Rightarrow W\uparrow \Rightarrow w$ is fixed.



Shifts in supply

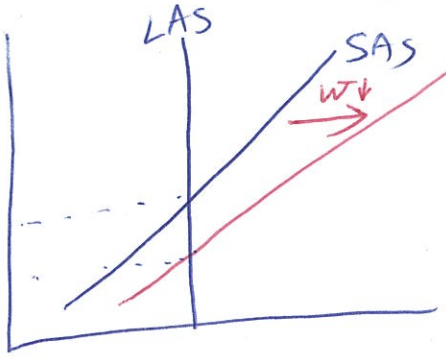
If $y^{POT}\uparrow$ (ie. due to { more capital / $\uparrow L^*$ in labor market / better technology }).

$\Rightarrow$ both LAS + SAS shift right (intersect at same Price). (simplification assumption)

factor price increase (ie nominal wage ⟷ inflation expectations, price of oil). $\Rightarrow$ SAS shifts left, no Δ in LAS.

ie. $y > y^{POT}$, $u < u^{NAT} \Rightarrow W\uparrow$

$y < y^{POT}$, $u > u^{NAT} \Rightarrow W\downarrow$.



* Any Δ in costs to firm will shift SAS!

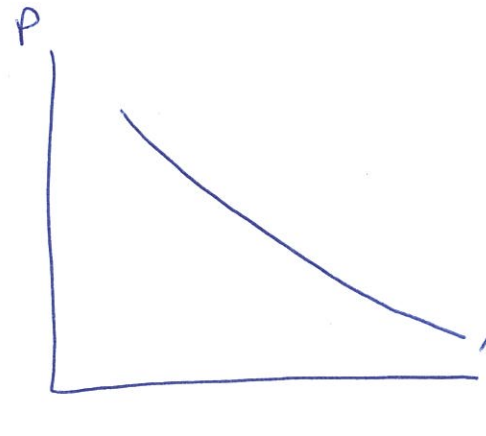
decrease in costs $\Rightarrow$ SAS right (DOWN!!!)

increase in costs $\Rightarrow$ SAS left (UP!!!).

AD

$y^{Demanded} = C + I + G + X - M$.

depends on price level
expectations
fiscal & monetary policy
world economy.



slopes downward due to
1) wealth effect: P↑ ⇒ real wealth ↓
people need to ↑ savings and ↓C
⇒ movement up curve.

Shifts in Demand

↑ (Expectations of future ↑income, ↑inflation, ↑profits.) ⇒ AD RIGHT.

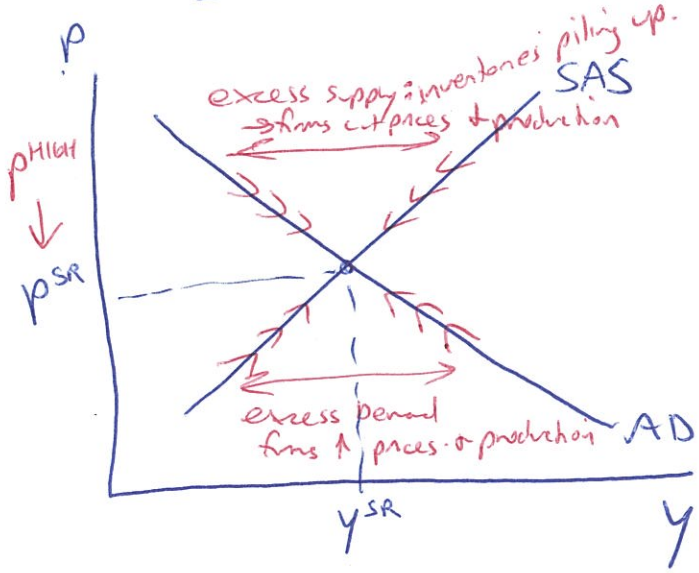
fiscal & monetary policy: ↓T, ↑G ⇒ AD RIGHT
M↑ ⇒ ↓i ⇒

world economy: E↓ = AD RIGHT
(↑X, ↓M).

2) substitution effect.
P↑ ⇒ i↑ ⇒ C↓ I↓
⇒ cut back on (investment, consumption) now
in favour of (investment, consumption) later.
"intertemporal substitution"

also P↑ ⇒ X↓ and M↑ ⇒ NX↓
(change in relative prices).

SR EQM

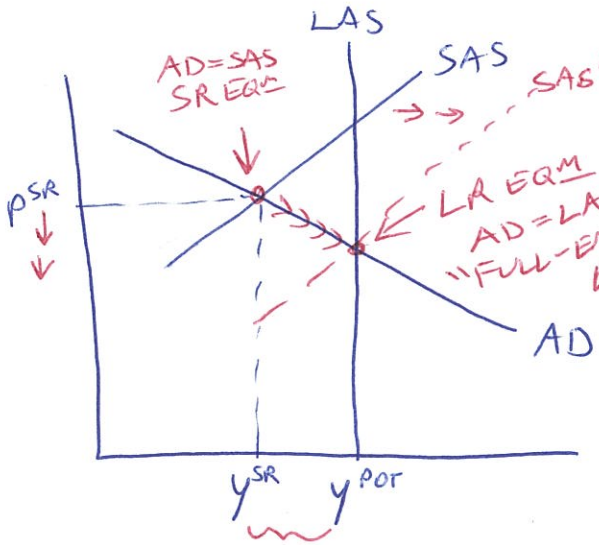


{The money wage is fixed for the whole time of SR adjustment

LR EQM : $Y = Y^{POT}$ on LAS.

(through money wages, ΔSAS "takes you" to FULL-EMPLOYMENT EQM)

In the LR, the money wage will adjust



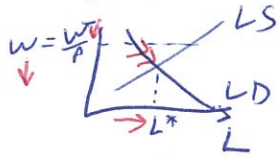
output gap $\equiv$ recessionary gap.

$(Y - Y^{POT} < 0)$

recession

$Y < Y^{POT}$, $U > U^{NAT}$.

money wage falls due to excess supply of labour. (costs ↓)



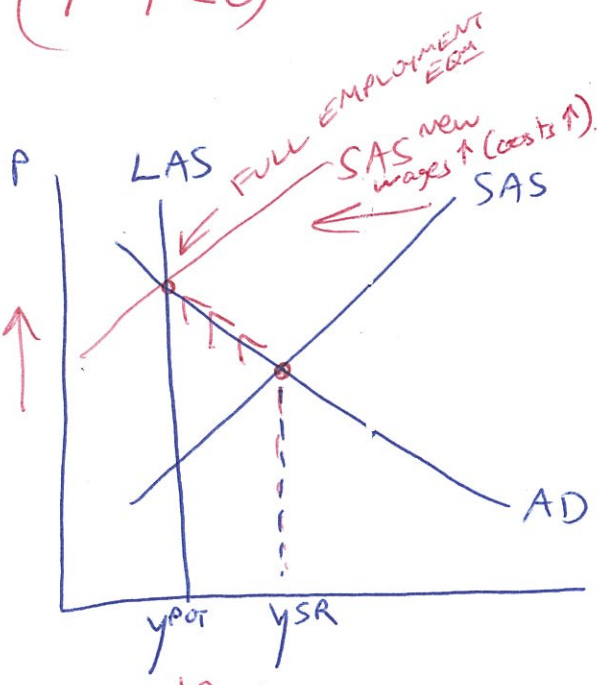
SAS right

$\Rightarrow L \uparrow$ to L^*

$\Rightarrow Y \uparrow$ to Y^{POT}.

NOTICE that as $P \downarrow \Rightarrow \frac{W}{P} = w$ returns to its original level $w^{OLD} = w^{NEW}$.

(no effect on real variables Y or r).



output gap $\equiv$ inflationary gap.

$(Y - Y^{POT} > 0)$

economic boom/expansion

$Y > Y^{POT}$, $U < U^{NAT}$

Shortage of workers → over-employment.

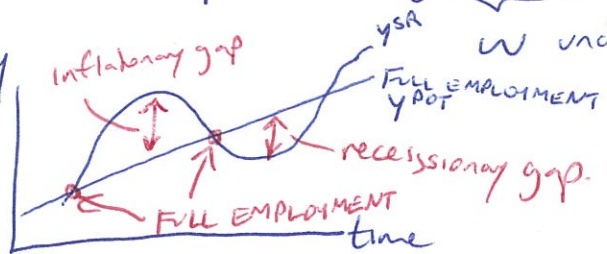
$\Rightarrow$ money wage ↑ (drives down profits).

$\Rightarrow$ SAS left

$\Rightarrow Y \downarrow$ to Y^{POT}, $U \uparrow$ to U^{NAT} and $P \uparrow$

NOTE: $w = \frac{W}{P}$ so $W \uparrow, P \uparrow$ w unchanged.

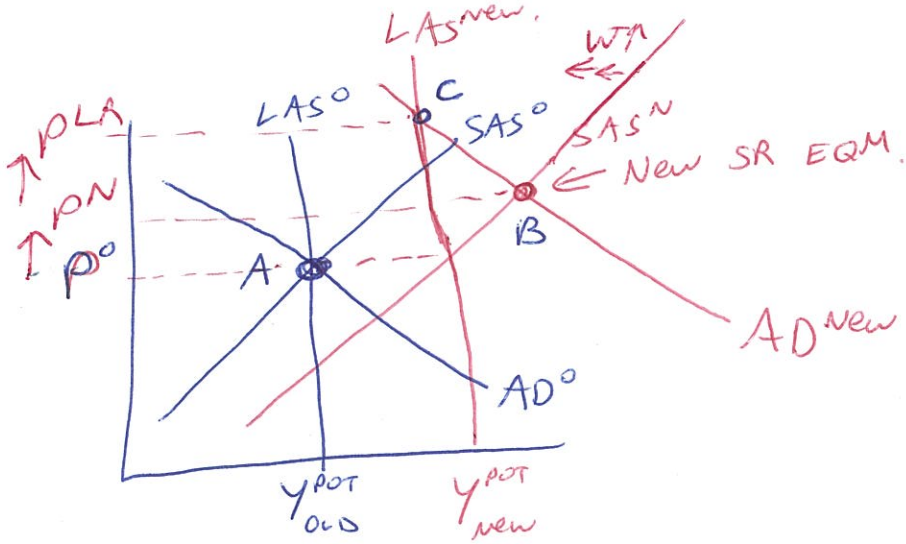
BUSINESS CYCLE.



ECONOMIC GROWTH and Inflation

ECONOMIC GROWTH ↗ ↑ LF Labour force.
↘ ↑ $\frac{Y}{L}$ labour productivity
$\Rightarrow Y^{POT} \uparrow \Rightarrow$ LAS & SAS right

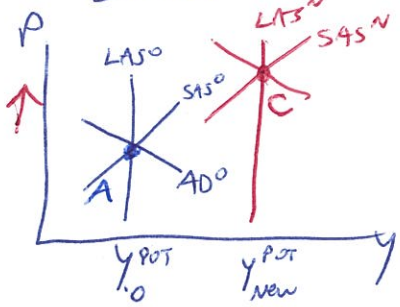
Inflation: $M\uparrow\uparrow \Rightarrow$ AD shifts right faster than LAS does.



The economy starts at A, but goes to B due to excessive money creation. At B: $Y > Y^{POT}$, $U < U^{NAT}$

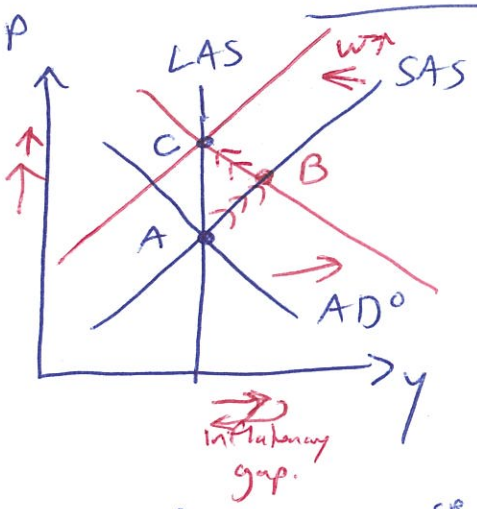
so Money wage ↑ $\Rightarrow SAS^N$ shifts left.

ENDS up A pt. C where $P^{LR} > P^N > P^0$



⇐ by picture.

Fluctuations in AD



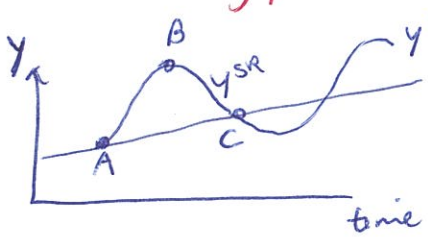
world economy expands: AD right

$Y > Y^{POT}$, $U < U^{NAT}$

→ firms raise prices and production

"inflationary gap" A → B

→ eventually: workers negotiate for higher wages ⇒ W↑



⇒ SAS left B → C

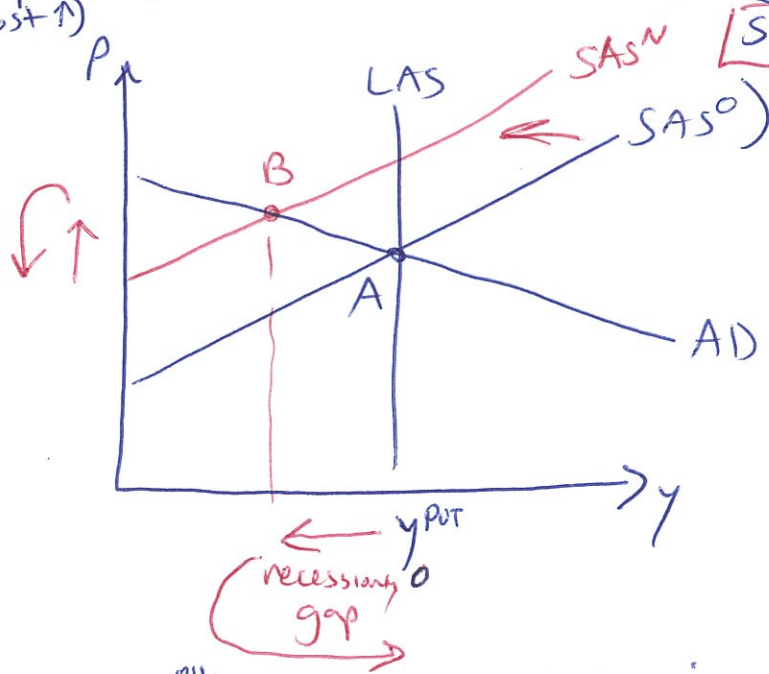
now $Y = Y^{POT}$, $U = U^{NAT}$

$W = W^{*}$ with P↑ W↑

FLUCTUATIONS IN SAS

Oil price shock (cost↑): SAS left ⇒ P↑ + Y↓ (firms decrease production) so $Y < Y^{POT}$, $U > U^{NAT}$

Stagflation



outcome: when P↓ back to original price ⇒ ($SAS^{N} \rightarrow SAS^{0}$)

Schools of Thought

BROAD (SIMPLIFIED) CLASSIFICATIONS

1) Classical: Economy is self-regulating & always at Full-Employment
flexible prices & wages.
Adam Smith, Ricardo, MILL
(prices adjust immediately (money wages are a price))

New Classical: business cycle fluctuation are efficient response to AD + AS shocks/response
↗ technology shock
↑ SAS shifts since wage adjusts immediately

(JOHN MAYNARD KEYNES)

2) Keynesian: Economy is not self-regulating.
Sticky prices and Wages
Needs FISCAL & MONETARY POLICY.
AD shocks mostly due to expectations ("ANIMAL SPIRITS")
SAS can't shift due to sticky wages (for some time).
⇒ needs policy response
ie. if AD shifts left due to pessimism
⇒ recession
need M↑, G↑, T↓ to shift AD back right.

New Keynesian: Prices are sticky too ⇒

3) MONETARIST: ECONOMY is self-regulating and at Y^{POT} If monetary policy is steady, not erratic. (KARL BRUNNER MILTON FRIEDMAN).
- Recessions due to abrupt ↓M or if M↑ too slowly
⇒ AD left.
- Need to ↑M. to shift AD back right (T should be kept low anyway to ↑incentives to work)