Week 3. Income & Spending

1. **National Income Accounting Identity**

a. Expenditure Approach: **SOURCE=USES**

$$Y = C + I + G + (X - M)$$, where, Y =Output = GDP

b. Income (Value-Added) Approach (Sum of All Factor Payments):

$C + I + G + (X\text{-}M) = AD \approx wage + interest + rent + profit = NI$

$NI + (indirect\ biz\ taxes) = NNP$

$NNP \pm income\ received/paid\ from/to\ foreign = NDP$

$NDP + depreciation = GDP$

c. Balance of Payments Adjustments

i) $Y - C - G = I + (X - M)$

$S\ (Nat'l\ Saving) = I + (X - M)$

$S - I = X - M \rightarrow$ Capital Account = Current Account

$if\ S - I < 0,\ then\ X - M < 0 \rightarrow Trade\ (Current\ Account)\ Deficit$

$w/\ inflow\ of\ foreign\ K \rightarrow Capital\ Account + I - S > 0$

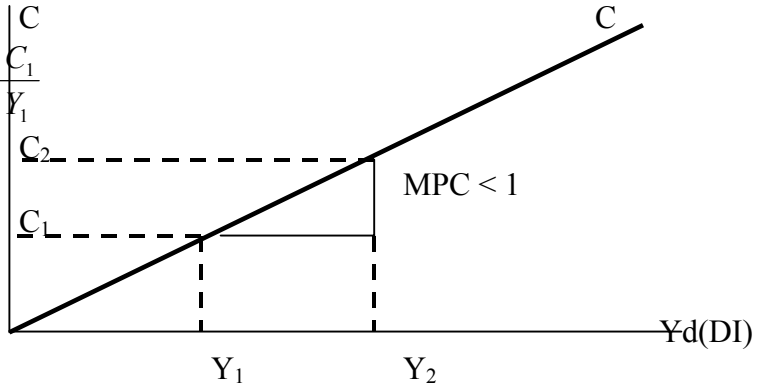
ii) $G = T\ (+B)$

$if\ T - G < 0 \rightarrow Budget\ Deficit/\ Deficit\ Spending$

iii) $Y - T = Yd = C + I + (G - T) + (X - M)$

2. **Marginal Propensity to Consume**

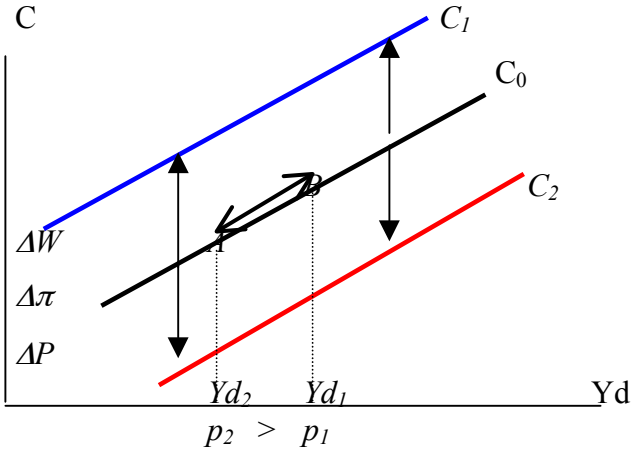
$$MPC = \frac{\Delta C}{\Delta DI} = \frac{C_2 - C_1}{Y_2 - Y_1}$$



3. **Consumption Function**

$C = f(Yd, W, p, \pi, r, E_t[Y_{t+1}])$

$= f(Yd, Ceteris\ Paribus)$



ΔYd causes **movement along** the consumption function.

Δ in any other variables **shifts** the entire consumption schedule.

i) Given higher wealth (e.g. bequest...etc.) one can consume more at the same (any given) level of real disposable income.
ii) *Wealth Effect*: Lower prices ↑the D for goods and services by enhancing the purchasing power of consumer wealth. A higher price level leads to lower real wealth and therefore to less spending at the same (any given) level of real Yd.
iii) Consumers don't have perfect foresight about π, the effect of π on consumer spending is minimal. It is rather price level that has more influence on consumption.
iv) Theoretically, higher ***r*** must encourage saving and discourage spending. Empirically, however, ***r*** has virtually no effect on consumption at least in U.S. This is probably because ***r*** has been traditionally significantly low relative to other countries.
v) $E_t[Y_{t+1}]$ affects consumption depending on whether the consumers perceive **ΔYd** as permanent or temporary. (*cf.* Permanent Income Hypothesis: individuals will smooth out the expected temporary ↑in income over the entire span of his or her income stream.) - Unless ΔYd is permanent, they won't completely shift ↑or↓ C-skdl.

4. **Volatility of Investment** is due to
   i) Business confidence & expectations about future (***induced investment***)
   ii) Level and growth of D: high levels of sales relative to current capacity and expectation of rapid economic growth (***induced investment***)
   iii) Technical change & product innovation
   iv) **Real rate of interest**: $I = f(r)$

5. **Net Exports** are determined by
   i) $[X = f(GDP_F)] - [M = f(GDP_H)]$, where $X=f(Y_f, e)$ & $M=f(Y_h, e)$.
   When the home economy grows faster than that of foreign, (X-M)↓.
   When the foreign economy grows faster than that of home, (X-M)↑.
   ii) $e = \dfrac{\text{Price level home}}{\text{Price level foreign}} = \dfrac{\textit{Home Currency price}}{\textit{Foreign Currency price}}$ $\quad (cf.\ TOT = \dfrac{Qx}{Qm})$
   if $Ph\uparrow$ & $\overline{Pf}$, $e\uparrow$ (depreciation of home currency) → $(X\uparrow - M\downarrow)\uparrow$.
   if $Ph\downarrow$ & $\overline{Pf}$, $e\downarrow$ (appreciation of home currency) → $(X\downarrow - M\uparrow)\downarrow$.

6. Government Spending $G = f(Yh, T)$

7. IS-LM Model for Determination of Eqm Y & r.

$$IS: Y = C(Y-T) + I(r) + G$$
$$LM: M/P = L(r, Y)$$