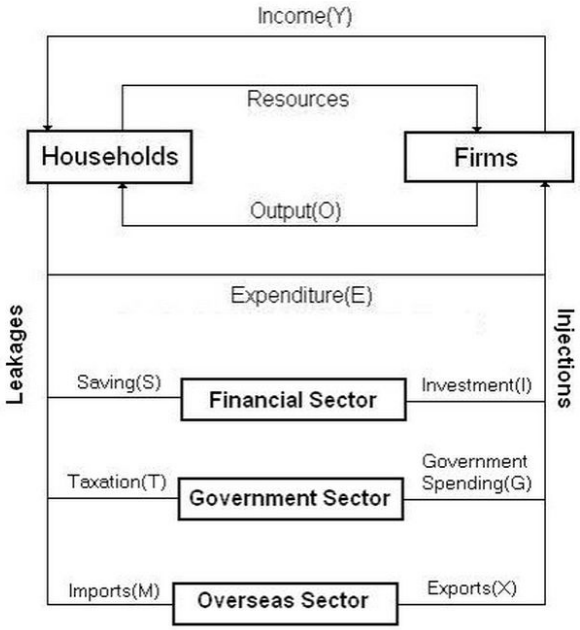
INCOME AND EMPLOYMENT DETERMINATION

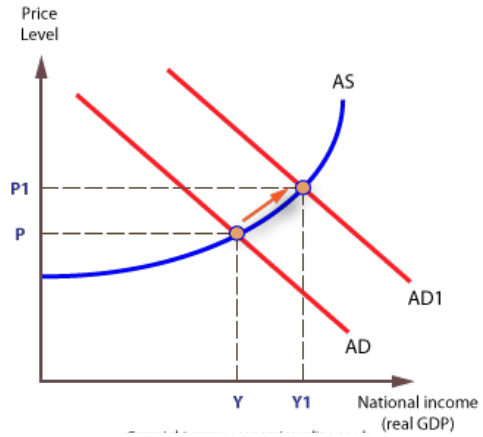
CIRCULAR FLOW OF INCOME

- Illustrates the relationship between different economic units and how an economy arrives at a certain eqm level of o/p, expenditure and Y



- Households pay for consumer g/s (C); firms pay for factor services provided by households (Y) including wages, interest, rents and dividends
- However, not all Y returns directly to firms as demand for domestic g/s → leakages/withdrawals (W)
    - Savings (S)
    - Taxes (T)
    - Import expenditure (M)
- Similarly, only part of the DD for domestic firms' output arises from C → remainder comes from injections (J)
    - Investment (I)
    - Government expenditure (G)
    - Export earnings (X)
- Economy is in eqm when planned injections = planned withdrawals
    - When planned withdrawals > planned injections, firms reduce production in next production period → eqm level of NY falls
    - When planned injections > planned withdrawals, firms run down on inventories and increase production in next production period → eqm level of NY increases

AD/AS MODEL



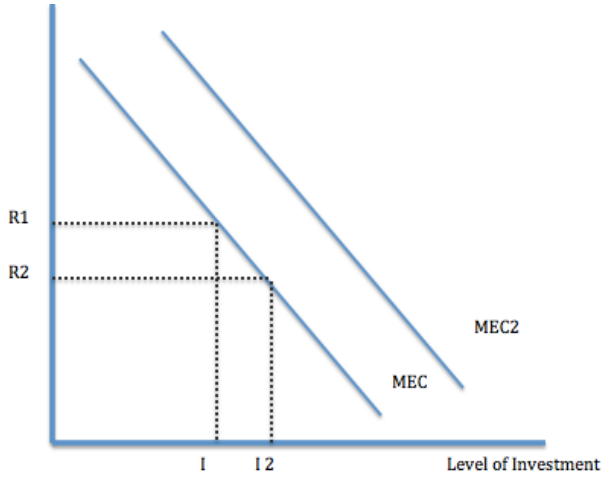
- Aggregate Demand (AD)
  - Total level of spending in an economy at each price level
  - AD = C + I + G + (X-M)
  - AD curve slopes downwards: Inverse relationship between GPL and real NY
    - Wealth effect: GPL higher → purchasing power falls → C falls
    - i/r effect: GPL higher → increase DD for money → increase interest rates → C on big ticket-item falls, I falls
    - International substitution effect: Domestic inflation higher → domestic gds more expensive relative to foreign substitutes → M rises, X falls → (X-M) falls
  - Factors causing shift in AD (non-price factors)
    - Expectations of Y/job prospects and profits
      - Optimism (due to sustained and strong GDP growth or worldwide economic recovery) → C and I rises
    - Expectations of changes in GPL
      - Inflation expected → current Cn rises
    - Fiscal Policy
      - Expansionary → C, I, G rises
    - Monetary policy
      - Expansionary → C, I rises
    - Y level of other countries
      - Higher Y level of trading partners → X rises
    - Price levels of other countries
      - Inflation rate of trading partners higher → domestic goods relatively cheaper → M falls, X rises → (X-M) rises
    - Foreign exchange rates
      - SGD depreciates → SG goods cheaper in foreign currency; foreign goods more expensive in domestic currency → X rises, M falls → if MLC condition holds, value of (X-M) rises
- Aggregate Supply
  - Total output of g/s that firms as a whole would like to produce and sell at each price level
  - Shape

        - Horizontal (Keynesian) range: real NY much lower than Y_{FE} → significant unemployment and spare capacity → o/p can be increased easily without pressure on GPL
        - Upward sloping (Intermediate) range: bottlenecks arise in production, resources increasingly scarce, costs rising → approaching Y_{FE} → GPL rises when o/p increases
        - Vertical (Classical) range: economy reaches Y_{FE} → o/p can no longer rise; only GPL rises when AD rises
    - Shifts in AS
        - AS increases and shifts downwards: COP decreases
        - AS increases and shifts rightwards: productive capcity rises
    - Factors causing shift in AS (non-price factors)
        - Input prices
            - P_{inputs} rises → COP rises → AS upwards
        - Quantity and quality of resources
            - Quality of labour improves (education, training) → AS right
            - New sources of raw mat discovered → AS right
        - Expected rate of inflation
            - Expected inflation → produces less motivated to sell them in current period + trade unions negotiate for higher wages → COP rises → AS upwards
        - Technology
            - Better technology → COP falls + increases quality of resources/productive capacity → AS downwards and right
        - Government policies (eg. subsidies to firms, skills upgrading)

COMPONENTS OF AD

- Consumption
    - Consumption function C = a + bY
    - a represents autonomous Cn – does not vary with Y
    - b represents induced Cn – varies directly with Y
    - Marginal propensity to consume (MPC): proportion of extra Y spent on Cn
    - Change in non-Y determinants → shift in consumption function
        - Expectations of changes in price
        - Expectations of changes in Y
        - Distribution of Y (rich tend to have lower MPC than poor)
        - Interest rates (affects interest-sensitive big-ticket purchases)
        - Tastes and attitudes (eg. prudence)
    - Savings: Y that is not spent
        - MPS = 1 – MPC
- Investment
    - Acquiring new fixed capital assets (fixed capital formation)
    - Accumulating of inventories
    - Autonomous investment: responds to firms' long term profit outlook
    - Induced investment: directly related to rate of change of NY

- Marginal Efficiency of Investment (MEI) Theory
  - Inverse relationship between investment and i/r



  - i/r falls → cost of borrowing falls → number of investment projects with an expected rate of return that is at least equal to the cost of borrowing increases → I increases
- Shifts of MEI curve (non-interest rate factors)
  - Business confidence and expectations
  - Cost of capital goods (compared to labour costs)
  - Government policies (tax rates)
  - Changes in technology
  - Rate of change of Y (affects level of pdn required)

- Government expenditure
  - Autonomous
- Net exports
  - Exports sold to foreigners → autonomous (independent of domestic NY)
  - Imports → vary directly with domestic NY
  - Depends on relative prices, tastes, quality, e/r

EXCHANGE RATE DETERMINATION

- Value of one country's currency in terms of another currency
- Demand for a currency
  - By foreigners (buy Sg exports, investment, currency traders)
  - Factors
    - Change in DD of Sg g/s due to changes in Y levels in trading partner (economic expansion/ recession)
    - Changes in relative i/r: i/r in Sg rises → returns from investing in Sg's financial assets are higher → DD for SGD rises
    - Changes in expectations about future value of SGD (affected by performance of economy, political stability etc)

- Supply of a currency
    - By locals (buy imports, investment)
    - Factors
        - Change in DD of foreign imports by Singaporeans due to changes in tastes and preferences, relative inflation rates
        - Changes in relative i/r
        - Changes in expectations about future value of currencies

MULTIPLIER EFFECT

- Introduction
    - The multiplier is a numerical coefficient by which a change in autonomous spending is multiplied to show the final change in equilibrium national income.
    - k = change in NY / change in autonomous AD
    - k = 1/MPW or 1/(1-MPC)
    - Assumptions for full multiplier effect to be experienced: spare capacity, constant general price level, constant technology
- Full Explanation (for 10m essay)
    - The multiplier effect works on the **premise that one person's spending generates income for another**. An increase in autonomous spending will lead to a more than proportionate increase in real NY.
    - For example, if a firm makes a $100m investment by building a new factory, this shifts the AD curve from AD1 to AD2 by $100m. Real NY will increase by the same value as increase in autonomous AD. This increase in income due to greater employment opportunities causes people to spend their income at supermarkets, cinemas or restaurants, again creating employment and income for others. This is because to increase production, firms have to hire factors of production from households. These households spend their factor incomes on buying domestically produced goods and services. This leads to **many rounds of increase in induced consumption** on domestically produced goods and services.
    - The multiplier process does not continue indefinitely due to the **presence of leakages in the form of savings, taxes and import spending** which causes the additional increase in spending and income to be a fraction of the previous addition to the circular flow. This means the rightward shift of the AD curve is smaller and smaller with each additional round.
    - The **process stops when cumulative increase in induces withdrawals equals initial increase in autonomous AD**. Assuming MPC to be 0.6, when autonomous AD increases by $100m, multiplier k = 1/1-MPC = 2.5. Hence, real NY increases more than proportionately by $250m. As a result, actual growth is achieved.
- Evaluation
    - Magnitude of increase depends on MPW or MPC. Smaller MPW → larger MPC → larger k
    - For full effect of multiplier: spare capacity → increases in AD will lead to increase in real NY instead of increase in GPL. If not, increase in GPL will dampen increase in real NY.
    - Multiplier can also take place in reverse: when autonomous AD falls, real NY decreases more than proportionately.

- Factors Affecting Size of Multiplier → affects effectiveness of FP
    - Marginal Propensity to Save (MPS)
        - Culture of thrift in Asian countries (saving for rainy days; lack of welfare system and unemployment benefits)
        - Compulsory saving scheme (eg. CPF)
        - Higher MPS → save more, consume less → larger withdrawals → smaller k
    - Marginal Propensity to Tax (MPT)
        - Welfare states (eg. UK): substantial amt of govt expenditure required to fund welfare policies → greater tax revenue required → high personal Y tax (UK: starting rate of 20%)
        - vs SOE (eg. SG): need to attract FDI/foreign talent → lower tax rates (Y tax capped at 20%) → higher MPT
        - Higher MPT → more leakage through tax → disposable income of households falls → less consumption → smaller k
    - Marginal Propensity to Import (MPM)
        - Limited natural resources → have to import raw materials such as crude oil which is an essential component of many g/s + lack comparative advantage to produce many consumer goods such as rice and corn, have to import such final gds too
        - Higher MPM → proportion of consumers' income spent on imports increases → higher leakages → lower k
    - Lack of spare capacity
        - Lack of spare capacity → increase in AD results in higher GPL instead of higher RNY → dampens effects of multiplier and extent of increase in real NY
    - Time lag for multiplier to work
        - Long time is required for each successive round of spending.
        - Geographical differences between countries affect time lags → smaller countries have smaller time lags → increase in RNY may be observed more quickly