Income and Employment Determination: CT1 Notes

Introduction:

- Economy is at equilibrium when planned injections = planned withdrawals
- If planned withdrawals > injections, equilibrium level of NY falls
- If injections > withdrawals, equilibrium level of NY increases

Aggregate Demand:

Introduction:

- Total level of spending in an economy at each price level
- Amount of domestically produced goods and services which economic agents desire to buy at GPL
- AD = C + I + G + (X – M)
- Inverse relationship between GPL and level of national output

Downward Sloping:

- Wealth Effect:
  - When GPL increases, household's real income and purchasing power decreases = decrease domestic consumption = lower expenditure = fall in output
- Interest Rate Effect:
  - GPL increases = demand for money to maintain SOL increases = spend more money on goods for households and firms
  - Interest rate refers to cost of borrowing money, increased demand for money = increase in interest rate = more expensive to purchase goods and services on credits (big ticket items and investments) = reduce consumption and investment = lower expenditure
- International Substitution Effect:
  - If foreign prices remain constant, domestic goods are more expensive relatively = rise in import expenditure and fall in export revenue = fall in net export earnings
  - + lower expenditure on domestically produced goods and services

Factors affecting AD:

1. Changes in Expectations
   - Expectation of Income and Profits:
     - Expanding economy = more job vacancies = higher income = spend on big ticket items
     - More sales and profits for firms = increase I = AD shifts right
   - Expectation of changes to real wealth:
     - Expect wealth to increase = demand more goods and services = AD shifts right
   - Expectations of changes in price level:
     - If inflation is expected to increase = spend more now = AD shifts right
2. Changes in Government Policies
   - Government Spending and Taxation
     - Adopt austerity measures = spend less = overall demand of G&S falls = AD shifts left
     - Higher personal income and corporate tax = fall in disposable income/post-tax profits = reduce C and I = AD shifts left
   - Interest Rate Policy
     - Government affects interest rate through regulation of money supply
     - Lower interest rate = cost of borrowing is lower = households and firms borrow more = increase C and I = AAD shifts right (expansionary monetary policy)
3. Changes in the World Economy
   - Income Level of other countries
     - Income level rise for trading partners = more foreign demand = more export earning
   - Price level of other countries

- Inflation rate of trading partners is high = more foreign demand (goods are relatively cheaper) + citizens turn to domestic goods (imports fall) = AD shifts right (more net export earnings)
- Foreign Exchange Rate
  - SGD depreciates = SG G&S are cheaper in foreign currency + foreign goods more expensive = increase foreign demand and reduce SG demand for foreign goods = AD shifts right

4. Changes in National Income
   - Recession and fall in national income = C and I falls = AD shifts left

Aggregate Supply:

Introduction:

- Total output of goods and services that firms would produce and sell at each GPL
- Keynesian Range (Horizontal)
  - Real national output is lower than full employment output level
  - Abundance of idle resources including capital goods and labour = significant unemployment
  - Rise in AD = allow output production to increase without incurring higher additional unit costs = no pressure exerted on GPL (PRICE ELASTIC)
- Intermediate Range
  - If AD rises, increase in output to meet shortage of goods will cause bottlenecks in production (since resources are increasingly scarce) = higher costs and higher price (higher GPL)
- Classical Range (Vertical)
  - Economy reaches full employment = output cannot rise as resources are at maximum capacity
  - If AD increases, only GPL increases with no change in real output (PRICE INELASTIC)

AS Curve Shifts:

- Aggregate supply shock affects production cost or productive capacity
  Can be temporary or permanent (flood vs tsunami)

Factors causing UP/DOWN shift (production costs):

- Change in Input Prices
  - Rise in price of input = increase cost of production = shift AS upwards
  - If rise in prices is due to depletion of resources (AS shifts leftwards)
- Change in Expected Rate of Inflation
  - Expect prices of goods to rise in future = less motivated to sell now (shift AS upwards)
  - If trade unions negotiate for higher wages to cope with inflation = higher COP = fall in AS
- Government Policies
  - Providing subsidies = lower cost of production = AS curve shifts down

Factors causing LEFT/RIGHT shift

- Change in quality of labour input
  - Increased educational levels = increase labour skills = increase productive capacity AS shifts right
- Change in quantity of resources
  - Increase in resources = increase ability to produce G&S = AS shifts right
- Government Policies
  - Subsidize upgrading of worker skills = increase quality of labour = AS shifts right
- Changes in technology
  - Improvements in technology = cut cost of production (downward shift in AS) and increase productive capacity (rightward shift in AS)

Equilibrium Output and Price:

- AD=AS (can find equilibrium output and price level)
- If AD>AS, shortage will cause consumers to bid higher prices + profit-maximizing firms will increase output by employing more workers = increase national output

- If AD<AS, surplus forces firms to reduce prices to clear excess stock = firms reduce output and need fewer workers and inventories = national output falls

Aggregate Expenditure (Keynesian Model):

- Assumes constant technology, constant potential output level, fixed general price level
- Comprises planned expenditure by sectors of the economy at each income level

Consumption Expenditure

- Act of using income for the purchase of final goods and services to satisfy current wants
- Consumption Function: amount households plan to consume at each level of income
  - C = a + bY
  - Autonomous consumption: does not vary with level of income
  - bY = induced consumption (gradient x income): varies directly with income
  - Average Propensity to Consume: proportion of total income spent on consumption (C/Y)
  - Marginal Propensity to Consume: proportion of extra income spent on consumption
- Savings Function: Y-C
  - Average Propensity to Save = S/Y = 1-APC
  - Marginal Propensity to Save = 1 – MPC

- **Movement along Consumption Function**
  - Effect of a change in income = induced consumption
- **Movement of Consumption Function** (non-income determinants, change in autonomous C)
  - Wealth: more wealth (increase in value of homes) = upward shift of C function
  - Expectations of changes in prices and income: expect price increase in future = buy now = present consumption increase = upward shift of C function
  - Distribution of income: rich tend to have lower MPC = what the rich might save, redistribute to the poor to spend on C = upward shift of C function with more equal distribution
  - Interest rate and availability of credit: higher interest rate = more costly to borrow = decrease C and downward shift of C function
  - Taste and attitudes: greater prudence will shift C function downwards

Investment Expenditure

- Act of acquiring new fixed capital assets (factories, machines) AND accumulating inventories (raw materials, changes in physical stocks)
- Autonomous Investment: respond to firms' long term profit outlook (tech progress and population growth), not dependent on level of national income
- Induced Investment: related to rate of change of NY (incomes rise = more goods demanded = firms spend more on capital equipment = accelerator effect)

- **MEI Theory**: inverse relationship between investment and interest rates
  - MEI = expected rate of return of an additional unit of investment (MEI ranked high to low)
  - Firms will only invest if MEI > cost of investment (interest rate)
  - If interest rates fall, number of profitable investment projects will increase
  - Level of investment undertaken increases
  - Change in interest rate leads to movement along MEI curve
- Shifts of MEI Curve
  - Business confidence and expectations: lack confidence = decrease investment
  - Cost and Availability of Capital Goods: fall in cost of new plants and equipment = increase I
  - Government Policies: fall in tax rates on profits increase after tax profit = increase I
  - Change in Technology: technological advancement = more attractive I = increase I
  - Rate of change in income: increase in income = more I to produce more goods = accelerator

Government Expenditure

- Assumed to be autonomous
- Expenditure does not directly affect income levels (spend on highways, military, healthcare)

Import Expenditure

- Exports are autonomous or exogenous (not dependent on domestic national income)
- Imports are endogenous: domestic NY rises = increased import spending

Multiplier Effect:

Introduction:

- k = change in equilibrium NY/change in autonomous aggregate expenditure
- k = 1/ [MPS+MPT+MPM] (marginal propensity to save, tax and import)
- k = 1/MPW where MPW = MPS + MPT + MPM
- Thus, magnitude of increase depends on rate at which income leaks out

AD-AS Approach:

- Principle
  - An initial increase in autonomous aggregate demand will lead to a **more than proportionate increase** in the equilibrium level of national income via the multiplier effect
  - Based on the principle that "**one person's spending is another person's income and income stimulates further spending** (induced consumption)" and this is repeated over many rounds as income flows back into the circular flow
  - Stops due to the presence of leakages (increase in induced C is smaller with each round due to savings, taxations and import spending = MPW)
  - When the **cumulative increase in induced withdrawals = initial increase in autonomous AD**, the multiplier process will stop
- Assumptions
  - Spare capacity, constant GPL and interest rates, constant technology
- Further Elaboration
  - Whether the full multiplier effects are experienced depends on state of the economy
  - Operating with significant idle resources = additional unit of output produced without incurring higher costs = AS price elastic = GPL does not increase with rightward shift of AD = full multiplier
  - Intermediate range: additional cost of producing additional unit increases = firms increase prices and GPL rises = dampen effect of multiplier and extent of increase in real NY reduced
  - Full employment: only GPL increases with no increase in real NY = no actual growth

Reverse Multiplier:

- Fall in autonomous C, I, G, (X-M) will shift AD curve leftward and more than proportionate fall NY
- One man's loss in spending is another man's loss in income and less income = less spending
- Process ends when the cumulative fall in withdrawals = initial fall in AD (lower NY equilibrium)

Real World Significance:

- Real world multiplier effect is smaller than formula indication (absence of idle resources means multiplier is dampened by increase in prices)
- Takes time for multiplier to work
- Each country's multiplier differs based on MPS, MPT and MPM
  - Singapore has a small multiplier = expansionary fiscal policy has limited effects
  - Singapore has an open economy = dependent on imports = high MPM
  - Singapore has compulsory CPF contributions = high MPS (but MPT is low)

Equilibrium and Full Employment:

Deflationary Gap:

- Amount of AE falls short of the level necessary to achieve full employment
- Equilibrium output is below full employment level = demand deficient unemployment
- Shows the amount of AE to be increased to achieve full employment (raise government expenditure or reducing taxes to increase AE)

Inflationary Gap:

- Amount of AE that exceeds level necessary to achieve full employment
- Problem of demand pull inflation (output cannot be expanded beyond full employment)
- Pursue policies to reduce AE