Macroeconomic Policies: CT2 Notes

Fiscal Policy

Introduction:

- Definition: deliberate management of <u>government spending and taxation</u> designed to influence the level of economic activity
- <u>Goals</u>:
 - Smooth out the ever-present fluctuations in economic activity (counter-cyclical)
 - Promote economic growth and push economy towards full employment
 - Maintain price stability
 - Achieve more efficient allocation of resources
 - Achieve a more equitable distribution of income

Fiscal Policy Tool: The Budget

Government Revenue:

- Taxation: compulsory payments made by individuals or firms in the private sector to the Government
 - Direct Taxes:
 - Taxes on income and wealth paid direct to IRAS
 - Burden is borne by the person or company paying the taxes
 - Impact and incidence are usually on the same party and is not easily shifted
 - Indirect Taxes:
 - Taxes on expenditure or production of goods and services
 - Impact and incidence may not be on the same person (GST, excise tax)
 - Tax Structure:
 - Marginal tax rate: change in tax paid/change in income (additional tax burden on added income)
 - Average tax rate: total tax paid/total income (overall tax burden on taxpayers)
 - <u>Proportional Tax</u>: Same proportion of income is paid as tax as income/profit rises (corporate tax)
 - Progressive Tax:
 - Rate of tax increases as income increases
 - Takes a larger proportion from the rich than from the poor
 - Reduces post tax income differentials (personal income tax)
 - <u>Regressive Tax:</u> Rate of tax decreases as income increases (GST)

Effects of Taxation:

- o Production
 - Income Effect: higher taxes = cannot afford same amount of leisure = encouraged to work more to maintain consumption
 - Substitution Effect: An extra hour taken in leisure has smaller sacrifice in consumption = encouraged to work less with more taxes
 - Higher corporate tax = lower after tax profits = disincentive for enterprise
- o Resource Allocation
 - Tax incentives influence the production of various types of goods and services
 - Tax influences the supply of various types of labour, supply of output of occupations
- Savings
 - More taxes reduce the ability and willingness to save = reduce the pool of loanable funds available for investment
- o Investments
 - Lower corporate tax = increase financial capital available for investment (depends)
- o Inflation
 - Indirect taxes increase prices of goods = higher cost of living = demand for higher wages
 - Direct tax reduces disposable income = reduce demand for goods = lower prices

Indirect taxes are inflationary, direct taxes are deflationary

- Sale of Goods and Services
 - o State Enterprises: fees from postal, telecomm and public utilities services
 - o Investments in securities by GIC
 - License fees and fines (marriage license, hawker's license)

Government Expenditure:

- Types of Expenditure
 - Operating expenditure: spending on day to day routine + recurrent in nature
 - Development expenditure: for economic and social development (build schools, roads)

• Effects of Government Expenditure:

- o Resource Allocation
 - Affect pattern of production by giving subsidies and grants (incentive to move to certain industries that the Government prefers)
- o Income and Wealth Distribution
 - Benefitting the poor in society + progressive tax system to redistribute income
- o Economic Growth
 - Expenditure on infrastructural development = improve productive efficiency = attract investment and lead to sustained economic growth
- o Internal Stability
 - Used as a tool to influence the level of economic activity (level of AD)

Types of Fiscal Policy

Non-Discretionary Fiscal Policy

- Introduction
 - Automatic fiscal policy based on built-in stabilizers
 - o Increase budget deficits (inflat.) during slumps and increase surpluses (deflat.) during booms
 - Counter-cyclical effect but it will not eliminate fluctuations entirely (needs discretionary FP)
- Progressive Tax Structure
 - Tax payments increase faster than increase in incomes (economic expansion) = Government receives more tax revenue = contractionary effect
 - Controls the increase in AD, keeps inflation in check, stabilizes economy during growth
 - o Stabilizes abrupt changes in consumption and economic activity
- <u>Unemployment Compensation</u>
 - Falling income + more unemployment = more unemployment benefits = offset loss of income
 - Slows down fall in AD
 - Family Assistance Programme
 - \circ $\;$ Aid is tied to income levels and stabilizes demand $\;$

Discretionary Fiscal Policy

Introduction

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- o Deliberate change in G and/or T to bring about desired change in the level of AD
 - Fiscal stance of Government: expansionary or contractionary
- Expansionary FP
 - Introduction
 - \circ $\;$ Applied when the country is in recession and operating below full employment $\;$
 - Need to stimulate AD = budget deficit (G>T) and by increasing G or reducing T
 - Increase G by increasing transfer payments or public works projects
 - Mechanism
 - Increase in G = increase in induced C = multiplier = more than proportionate increase in real NY
 - Reducing T = increase household disposable income = increase in C + savings = multiplier effect
 - \circ Increase G has greater impact on raising AD than equivalent decrease in T
 - Tax cuts could be saved instead of spent = not all additional NY is passed to circular flow

Contractionary FP (Austerity)

- Introduction
 - o Used to close inflationary gap during periods of excess demand and inflation
 - Plans budget surplus (G<T) by reducing G or increasing T

Effects of FP

- Economic Growth and Unemployment
 - Expansionary fiscal policy = each dollar spent can raise AD by more than proportionate (initial spending stimulates successive rounds of spending and respending by consumers)
 - Increase in AD = rightwards shift = increase in production and employment
 - Increase real output and employment
 - ****May also affect productive capacity (fiscal measures with supply side effects) by investment and R&D to increase level of potential output
- Inflation
 - \circ Demand pull inflation = controlled by contractionary FP = lower AD and reduce pressure on GPL
 - Trade-off: unemployment and lower output
 - \circ OR increase productive capacity to prevent overheating by targeting AS
- BOP (Deficit)
 - o Contractionary FP and budget surplus to deflate level of AD
 - Expenditure-Reducing: reduce AD and NY falls = fall in M expenditure = improve trade balance = reduce BOP deficit (depends on MPM)
 - Expenditure-Switching: R
 - Reduce GPL = exports relatively cheaper to foreign consumers = increase Qd for exports
 = assuming PED>1 = more than proportionate increase in Qd = increase X revenue
 - Import substitutes more expensive (fall in price of domestically produced goods = switch to domestic substitutes = reduce import expenditure = reduce BOP deficit
 - o BUT this reduces growth rate and increases unemployment
- Resource Allocation
 - o Subsidies and tax exemptions diverts resources from one sector to another
- Income Distribution
 - Progressive tax system redistributes income from rich to poor
 - o Increase in GST affects low income earners more compared to the rich

Limitations of FP

Problems of Discretionary FP

- Size of Multiplier
 - Size of K affects extent of increase in NY (smaller K = more G to achieve desired outcome)
 - BUT may incur a higher opportunity cost
- Time Lags
 - o Recognition Lags: time lapses before problem is recognized and diagnosed
 - Administrative Lags: between recognition of need and taking action (policy crafting)
 - o Operational Lags: between action taken and impact of the action on output
- Political Pressure from Lobby Groups (deficits are politically attractive)
- Problem of magnitude with forecast error (hard to be accurate)
- Inflexibility (hard to cut back on G expenditure after economic recovery)
- Macro-Economic Objective Tradeoffs

Problems of Financing Budget Deficit

- Crowding out domestic investment
 - If Government does not finance increase in deficit by raising money supply = borrow money from non bank private sector = compete for scarce funds = increase interest rate = less investment
 - Increase IR = reduce C and I demand
- Crowding out in open economy
 - Increase IR = attract capital inflows or hot money = appreciation

- Exports less price competitive + more imports = value of X-M falls = AD falls = effects of expansionary FP is reduced
- Burden on future SOL
 - Increased national debt = future higher tax rates to finance repayments = transfer of wealth from taxpayers to bond holders = adverse impact on income distribution
 - Increased debt = outflows in BOP to finance repayment

Problems of Non-Discretionary FP

- Adverse Supply Side Effects
 - Higher tax = discourage work effort and productivity
 - Steeply progressive income tax = discourage growth of production = increase in inflation rate
 - High unemployment benefits increase frictional unemployment (lower opp cost)

Fiscal Drag

- o Contractionary effect of increased tax revenues due to increase in NY
- Reduce disposable income of households and ability to spend on consumer goods = drag on AD
- o Hinders ability to reach full employment

Singapore's FP

- Private Sector is the engine of growth (Government provides stable and conducive environment)
- Tax and G policies should be justified on microeconomic grounds + focus on supply side issues
- Counter-cyclical role of FP limited, due to high import leakages

Monetary Policy (Interest Rate)

Interest Rate Determination:

- Introduction
 - Borrower: cost of using borrowed money
 - Saver: reward of putting aside money = postponing current consumption

• Liquidity Preference Theory

- \circ Supply of money independently set by the Central Bank = vertical supply curve
- Demand for money = demand to hold assets in liquid form = downward sloping
- Change in demand for money (increase real GDP) = can afford more goods = increase demand for money as medium for transaction = demand curve shifts right = increase IR
- Change in money supply (increase) = decrease in IR with more supply
- Loanable Funds Theory
 - Supply (level of savings) = higher IR increases opportunity cost of present consumption as interest of savings forgone increases = more savings = more loanable funds = upwards sloping
 - Demand (firms) = undertake investment projects which are profitable (lower IR = more projects are profitable) = greater quantity demanded of loanable funds
 - Demand (households) = low IR means lower total cost of purchasing = increase Qd of funds

Expansionary Monetary Policy

• Increase money supply = decreased IR = increase I and C = higher AD = NY and employment increase Internal Effects

- Direct Transmission
 - Increase money supply by purchase of bonds = bondholders receive money in exchange for bonds = spend on other assets with more money = increase in AD
 - Shortage of goods at current GPL = push price up
 - Producers encouraged to increase supply of goods = real NY increases + more employment
 - +++ MULTIPLIER EFFECT
- Indirect Transmission
 - Cheaper cost of borrowing = buy more consumer durables (cars) + firms undertake new investment which are profitable
 - Increase AD = rightward shift + multiplier = more than proportionate increase in real NY

External Effects

- Lowers domestic IR = falls relative to other countries = outflow of hot money in open economy = increase supply of currency = depreciation
- Domestically produced goods are cheaper = more competitive exports = X increase
- Locals find import expensive = fewer imports = import expenditure M decrease
- By MLC, increase in AD if PEDx + PEDm > 1 (real NY increases + multiplier effect) = improved BOP also
- BUT leads to overall increase in GPL if factor prices bid up due to demand for scarce resources

Effectiveness of Expansionary MP

- Interest Elasticity of Demand for Money
 - o Greater impact on IR if demand for money is more interest inelastic (bigger fall in interest)
 - If interest elastic, then increase in money supply = smaller fall in IR = smaller impact
 - Liquidity Trap: demand for money perfectly interest-elastic = no more effect on IR with increase in money supply
- Interest Elasticity of Demand for Investment
 - MEI interest elastic = less proportionate increase in I with a decrease in IR
 - Keynesian: investment depends on confidence (high investment in good times even with high IR)
- Expectation of Future State of Economy
 - Effectiveness affected by people's expectations of the future
- Time Lags
- Inability to achieve Macro Objectives (cannot tackle supply side problems)

Contractionary MP

- Internal Effects
 - Increased IR = savings more attractive = reduce household consumption = C falls + I falls
 - Loans less attractive as cost of borrowing increases = reduce spending on big ticket item
 - Reduces demand pull inflation
- External Effects
 - Domestic IR increases relative to other countries = inflow of hot money = increased demand for domestic currency = appreciation
 - Exports are more expensive = less competitive = demand for X falls = less export revenue
 - \circ Locals find imports cheaper = substitutes = increase import expenditure
 - MLC, PEDx + PEDm >1 = decreased in AD = moderate rate of inflation

Effectiveness of Contractionary MP

- Short/long term basis (may not reduce AD if long term projects cannot be easily abandoned)
- Conflicts with other macro goals (lower inflation but higher unemployment due to lower C and I)
- Availability of Alternative Source of Funds (reduce I thwarted by FDI not dependent on local IR)

Implications of MP

- Keynesian: investment driven by animal spirits, not responsive to IR
- If liquidity trap is present with low IR = increase in money supply odes not reduce IR = no effect
- THUS, favour use of FP

Monetary Policy (Exchange Rate)

Introduction

• Exchange Rate Determination

- Floating Exchange Rate: no intervention by the Central Bank
 - Achieved by the Central Bank buying or selling its currency in Forex Market
 - Increase external value of currency = buy (appreciate)
 - Decrease external value of currency = sell (depreciate)
- Fixed Exchange Rate: fix value of currency at a specific rate relative to another currency
- Managed Float: allows currency to float within a targeted band and intervenes only if necessary
 - Set upper and lower limit, allowing fluctuations within the width of the band
- Adjustment Process
 - Above free market equilibrium = surplus of money = downward pressure and depreciation
 - Below free market equilibrium = shortage = upward pressure and appreciation
 - o Determined by the relative shifts in demand and supply
- Long Term ER Determination
 - <u>Relative price level of goods</u>
 - Relative inflation rate: more inflation = prices rise faster = fall in X rise in M = depreciate
 - Relative rates of productivity growth: more productive = fall in COP = fall in prices = increase demand for X and currency = appreciate
 - <u>Preference for Goods</u>: prefer imported goods = demand for M increases

Monetary Policy of Singapore

- Introduction
 - \circ Promote price stability as a sound basis for sustained economic growth in the LR
 - o Gradual and modest appreciation of the Singapore dollar
- Reason for Choice of ER
 - Small domestic economy: highly dependent on the external sector (X-M affects AD)
 - Price taker + high import content = ER has direct influence on GPL (offset imported inflation)
 - Open economy with free capital mobility = change in IR leads to movement of funds
 - Open Economy Trilemma: relinquish control over domestic IR to influence ER
- How ER is managed
 - Trade-weighted basket of currencies: can cause imported CPI inflation and export competition
 - Value of SGD against currencies with inflation not eliminated = S\$NEER (Nominal Effective ER)

Effects of Depreciation on SGD

- AS Effects
 - Prices of foreign goods that are imported increases = imported inflation
 - Prices of imported raw materials increase = higher COP = upward shift of AS curve
- AD Effects
 - Domestic goods more competitively priced = increase demand for X
 - Imports are more expensive = fall in demand for M + switch to domestically produced goods
 - o If PEDx + PEDm > 1, then net exports (X-M) will increase = increase in AD
 - o BUT high export growth could cause economy to overheat + increase cost of imported inputs
- On Macro-Economic Aims
 - Rightward shift in AD = increase production levels = require more workers = real NY growth and reduced unemployment
 - \circ $\;$ BUT fall in AS will dampen increase in NY + overall inflation with increased AD $\;$
- On BOP
 - Improvement of BOP with MLC and increase in net exports
 - o BUT may not be ideal if it does not address root cause of BOP deficit
 - \circ J curve effect:

- Short Run: change in Qd for X and M insignificant (takes time to change consumption patterns + time to find substitutes + finish contracts = relatively price inelastic = MLC may not hold and (X-M) might decrease = worsen BOP initially
- Long Run: demand for exports and imports more price elastic = more likely MLC holds

Effects of Appreciation

- AS Effect: lower imported inflation + lower COP = downward shift of AS
- AD effect: Qd M increases + Qd X decreases = MLC holds = MS fall in AD with lower net exports
- Lower rate of inflation, fall in real NY, increase in unemployment
- Worsened BOP and BOT position

Policy Limitations

- Conflict with other Goals (Depreciation)
 - \circ \quad Positive effects are moderated by imported inflation
 - Poor management can cause wage price spiral = loss of export competitiveness
 - In Singapore, depreciation is once-off and short term to stabilize economy in crisis
- Conflict with other Goals (Appreciation)
 - \circ ~ Increase in AD dampened to prevent excessive demand pull inflation
 - AD can fall, more than proportionate fall in real NY
 - Low and stable inflation = minimize wage price spiral = export competitiveness
- Time Lag
 - MAS formulates ER in forward looking manner evaluate impact of policy
- Imperfect Information
 - \circ $\$ CB does not have up to date information about state of economy
 - \circ $\,$ CB does not have perfect knowledge of how the economy works
 - o Constant changes in conditions of domestic and international economies
- Availability of Reserves
 - Intervention to keep currency value above market equilibrium = needs sufficient reserves
 - Insufficient reserves = cannot support currency value = depreciation = cannot maintain ER
- Coordination of Macro Policies
 - \circ $\;$ Growth of the economy is determined by supply side factors
 - o Monetary policy cannot influence supply side effects

Supply Side Policies

Introduction

- Improve supply side potential = lower GPL and higher employment = sustained EG
- Supply side policies must be supported by high enough level of AD
- Downward shift of AS due to fall in COP AND/OR rightward shift due to increased productive capacity

Market Oriented Supply Side Policy

- Introduction
 - Reduce the role of the Government + allow market to work more freely
 - Increase competition and efficiency = improve productivity

Product Market

- Privatization
 - \circ $\;$ $\;$ Transfer of state owned assets from public to private sector
 - Owners given the responsibility of restructuring the enterprise + face competition = incentive to cut costs = COP falls = downwards shift of AS
 - o Allows price mechanism to take over the allocative function (prices respond to mkt conditions)
 - Creating competition by breaking up state owned monopolies
- Pro-competition Policies
 - Greater consumption lowers the overall unit costs of production
 - 1. Tougher competition policy regime: banning price fixing cartels
 - 2. Removing barriers to entry for firms (deregulation)
 - 3. Promote freer trade between nations: eliminating or reducing tariffs
 - o BUT might cause reconcentration of the market if uncompetitive firms leave the industry
- <u>Promotion of Enterprise</u>
 - o Extension of loans + provision of technical expertise and support for small firms
 - New technology and methods of production = increase productivity and productive capacity
 - BUT high risks + expenses + effort = deters entrepreneurs from starting companies

Labour Market

- <u>Reducing Power of Trade Union</u>
 - Trade unions: raise labour cost + cost push inflation + reduce employment
 - Encourage investment as wage cost can be monitored and projected more accurately
 - Eliminate incidence of work stoppages + increase business confidence = investment
- <u>Tax Reforms</u>
 - Reduce taxes = encourage workers to work and save + firms to invest
 - Low income tax = attract foreign talent and prevent brain drain
 - Lower corporate tax = more FDI and increase investment spending
- Social Welfare Cuts
 - Overly comprehensive benefits = reduce incentive to rejoin workforce
 - Cut programmes = increase willingness to work = increase effective labour supply
 - o BUT must maintain some social welfare to help economically disadvantaged

Interventionist Supply-Side Policies

- Introduction
 - $\circ \quad \text{Involve direct Government intervention} \\$
 - \circ ~ Free market has little incentive for education and training, investment and R&D ~
- <u>Income policies</u> (wage guides/flexible wages)
 - Wages should rise but lag behind/on par with productivity growth = unit cost of labour < labour productivity = low labour cost (reduce unit labour cost = downward shift of AS)
 - Voluntary wage guides face non-compliance + cooperation from trade unions is limited
- Education and Training
 - o Reduce labour market imbalances or bottlenecks
 - o Intervention since firms may be unwilling to invest in training (fear of workers leaving)

- Improve skills and quality of work force + raise labour productivity (AS shifts downwards)
- Improve occupational mobility = reduce problem of structural unemployment
- \circ $\;$ BUT retraining takes time and may not guarantee better labour productivity
- <u>Nationalization</u>
 - \circ $\;$ Higher investment than in under private ownership
 - \circ $\;$ Better coordination within industry + greater IEOS = increased productive capacity and PG $\;$
- Grants to Encourage R&D
 - Social rate of return > private rate of return = underproduction of R&&D by private sector
 - o Sponsor R&D in areas with potentially large external benefits
 - o BUT investment has risks since results of R&D are not guaranteed + long gestation period

Effects of Supply Side Policies

- Achieving sustained economic growth while maintaining low inflation
- Bring down level of unemployment (frictional and structural)
- Reduce COP and increase product quality = beat international competition = increased demand for X (BOP improves)

Limitations of Supply Side Policies

- Depends on accuracy and availability of information to the Government to decide on policy measures
- Long term in nature = long time for effects to be felt
- Outcomes tend to be uncertain
- Might not be effectively executed if Government is limited by fiscal budget