

Week 2

- Problems
 1. Inflation : consumer price index (CPI), production price idx (PPI), GDP deflator
 2. Unemployment : frictional (not much concern), cyclical (recession), structural (e.g. robots)
 3. Rate of Economic Growth : measured by (nominal vs real) GDP; flow of product (expenditures) and/or flow of cost (income)
 - $\text{GDP deflator} = \text{Nominal GDP} / \text{Real GDP}$
- Major macroeconomic policy tools

Fiscal policy & Monetary policy (often used together)

Fiscal

 - To stimulate the economy (fight recession) : increased government spending, tax cuts
 - To contract (fight inflation) : decreased ..., tax hikes

Monetary

 - To stimulate the economy (fight recession) : increase the money supply
 - To contract (fight inflation) : decrease the money supply

Borrowers benefit from unexpected inflation.
- Aggregate Supply-Aggregate Demand (AS-AD) model
- Classical Economics Principles (rip in the 1929 Great Depression)

Unemployment is a natural part of business cycle

Economy is self-correcting

No need for govt intervention like fiscal or monetary policy!
- Keynesian (came in at the GD, rip in 1970s stagflation)

Keynesian spending cure - the New Deal (fiscal)

Problem : lays the foundation of **stagflation**, i.e. high inflation + high unemployment

 - Demand-Pull inflation : too much money chasing too few goods (Vietnam war and Johnson)
 - Cost-Push inflation : rapid increases in raw material prices or wage increases drive up production costs (can happen as a result of “supply shock”)

Example : The Kennedy Tax Cut of 1964 was a modern day version of Keynesian economics
- Monetarism

Lowest sustainable unemployment rate (LSUR) or natural rate
- Supply Side Economics : lower taxes to lower budget deficit

“New Classical” → a complete rejection to Keynesians

Theory of Rational Expectations : ppl will remember, so policies don't help (?)

New century, globally start to face structural issues that are resistant to Keynesian soln's.

Week 3

- Two pillars of Classical Econ (crumbled under Keynesian)

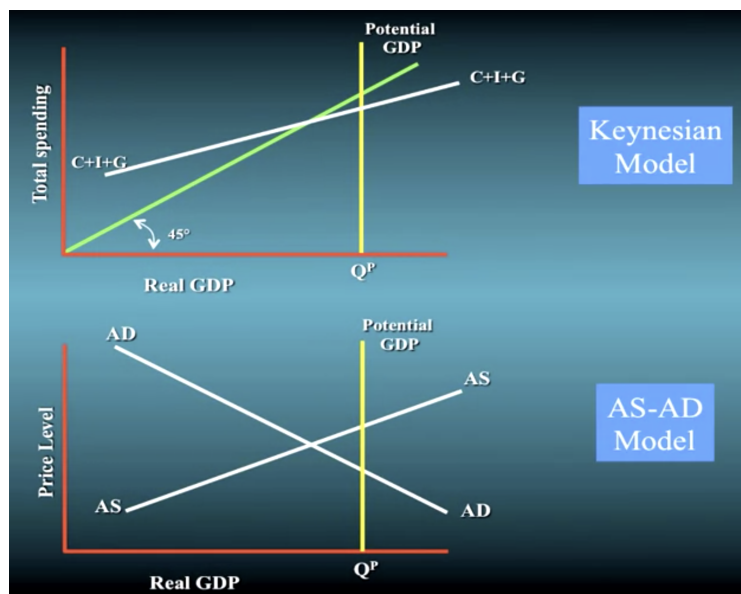
Say's Law : supply creates its own demand

Quantity Theory of Money : $PQ = MV$ (M = money supply; V = velocity of money, sim to interest rate; P = general price level as measured by an idx, e.g. CPI; Q = quantity of real output sold)

- AS-AD : allows price adjustment; Keynesian : assume price fixed
Factors that shift AD (determinants of AD) : consumption, investment, gov't, net export
Factors that shift AS : input prices, technology and productivity, legal-institutional environment
- Three Ranges of Economy (aggregate output vs price level) : Keynesian (horizontal), Intermediate, Classical (vertical)
- Keynesian : price adjustment overwhelmed by “income adjustment mechanism”

Week 4

- Keynesian model gave rise to Fiscal Policy (gov't expenditure + tax changes)
Keynesian Aggregate Production-Aggregate Expenditures (AP-AE) model
- Leakages : consumer saving, business saving, taxes, imports
Injections : investment, gov't spending, exports
 $AE = C + I + G + (X - M)$ where X = exports, M = imports → AE is the vertical sum of these four components
- Autonomous consumption : consumption that occurs regardless of change in income (even if income = 0)
- Marginal Propensity to Consume (MPC) : extra amount ppl consume when they receive an extra \$
Marginal Propensity to Save (MPS) = 1 - MPC
- $C = C_0 + MPC \cdot Y_d$ where Y_d is disposable income
AE not necessarily equal AP, so “supply creates its own demand” (Classical) is incorrect.
- Investment Expenditures (15% of total AE) : purchase of residential structures, investment in business plant and equipment (70%), additions to company inventory
Assumption : independent with income (horizontal line)
Determinants of investment expenditures : interest rates (Keynes)
Gov't Expenditures (horizontal line)
- Expansionary fiscal policy : increase G and/or cut T to close a recessionary gap
Contractionary fiscal policy : cut G and/or raise T to cool down overheated econ and curb inflation
- Net Exports
Keynesian model (simplified) assumes a “closed economy” - no international trade
- Keynesian (expenditure) Multiplier : a change in expenditure multiplied by this # to determine the resulting change in total output
> 1 since income is re-spent many times after the initial increase
Keynesian (expenditure) Multiplier = $\frac{1}{MPS} = \frac{1}{1-MPC}$
Keynesian tax multiplier = MPC * Keynesian (expenditure) multiplier
- Paradox of Thrift - consumer tries to save but actually saves less
Crowding out : a reduction in private sector investment that can be caused by increased gov't spending (The net effect of a fiscal policy stimulus may be less than intended).
- Key weakness of Keynesian model : assumes price fixed + assumes away inflation; neglects the crucial influence of monetary factors on interest rates etc.
- Political mind plays a role in choosing to cut taxes or increase government expenditures to close a recessionary gap (conservative vs. liberal)



Week 5

- Monetary policy
1969 to 1970s, stagflation emerges, Monetarism challenges Keynesian
- 3 kinds of money
Commodity money (gold nuggets, silver, grains, etc.)
Bank money (checkbooks and bank drafts)
Fiat or Paper money (currencies, e.g. \$, rmb)
- Money : medium of exchange, standard of value, store of value
- M1 (transactions money) = cash + checking accounts + traveler's checks
M2 (broad money) = M1 + saving accounts + time deposits + money market mutual funds
M3 = M1 + M2 + short term fiscal assets
- Nominal vs Real interest rates
- 2 major determinants of money demand : transactions demand & asset demand
The basic determinant of transactions demand is Nominal GDP
- "Fractional" reserve → money "supply" multiplier = $1 / RR$, i.e. required reserve ratio
Bank Run : everyone comes in at once to demand money (fear becomes a self-fulfilling prophecy) → Fed Reserve is "lender of last resort", i.e. bankers' bank
Fed's most important tool : Open Market operations, e.g. buying (or selling) gov't securities to expand (or reduce) money supply
5-step monetary policy sequence called monetary transmission mechanism
- Keynesians believe that monetary policy is effective only for fine-tuning in mild recession/inflation.
Monetarism believes that inflation happens when gov't prints too much money.
- Stagflation = recession + inflation (increase in price)

Week 6

- Okun's Law : GDP falls by every 2%, then unemployment rises by 1%
→ implies that actual GDP must grow as rapidly as potential GDP to keep the same unemployment rate.
- Unanticipated inflation benefit borrowers at the expense of lenders.
Demand-Pull inflation vs Cost-Push inflation
- Core or Inertial rate of inflation : “inflationary expectations” and a behavioral model (adaptive expectations),
Adaptive expectations assumes that people believe a constant (same) inflation rate next year → self-fulfilling prophecy
- Phillips Curve (PC) : wages rose when unemployment was low (wages fell when unemployment was high)
Keynesians believe; Monetarists don't → they think \exists natural rate of unemployment
Short run (PC curve) vs Long run (PC vertical line) → inflationary spiral
- Supply Side economics : to cut taxes while increase tax revenues + accelerate growth w/o inducing inflation
Laffer Curve : tax revenues (x) vs marginal tax rate (y), a backward bending curve → at a certain pt, ppl will work less the more they're taxed.
According to SS economics, deregulation will shift out AS curve, which will then decrease inflation + increase GDP growth
- “New Classical” economists replaced “adaptive expectations” with a new theory of “rational expectations”, rejecting short-run Keynesian solutions.

Week 7

- Rational Expectations : assumes that ppl take into account **all** available information
→ implies that Keynesian policies are obsolete and useless
- Rule of thumb : about 2 MIL jobs lost for every 1% of GDP growth lost
- Great Recession of 2007
Largest fiscal stimulus : Quantitative Easing (QE), i.e. Fed buys long-term bonds to drive up bond prices and thereby drive down yields and long-term interest rates.
- 2000s Structural shift
Leading indicators : consumer confidences, ISM manufacturing idx, CPI, etc.
Trade deficits make GDP lower; offshoring decreases I within GDP eq.
→ global butterfly effect
Keynesian can't deal with long term structural issues
- What caused instability?
Keynesians believe instability arises from (1) changes in investment and consumption shift AD curve in/out, causing recession/inflation; and (2) adverse supply side shocks shift AS curve in, causing stagflation.
Monetarist believe that bad gov't policies are the major cause. V (velocity of money) is stable, while Keynesians believe it's unstable.
- Self-Correcting?
Monetarist & New Classical believe that internal mechanisms automatically move unemployment back; associated with adaptive and rational expectations.
Speed of adjustment?
Monetarist (adaptive expectations) : gradually, 2-3 years
New Classical (rational expectations) : fast, since future is fully anticipated
- Balanced budget rule & Crowding out (activist expansionary fiscal policy)
Treasury must raise interest rate to attract funds when selling bonds, which - due to "zero sum game" - would decrease spending on private investment
Monetarists believe it's a problem; Keynesians don't think so since business borrowing is usually depressed in a recession.
Keynesians oppose balanced budget rule since it would require contractionary fiscal policy during a recession and deepen it.
Supply Siders believe taxes and regulations must be reduced to get more output w/o inflation, so they favor discretionary policy (like Keynesians).
- Monetarists believe that macroeconomic instability arises from bad gov't policies

Week 8

- Economic growth = expansion of potential GDP or national output
- 4 supply factors of growth
 - (1) Human resources (quantity + quality) : labor, education, discipline, motivation
 - (2) Natural resources : land, minerals, fuels, environment
 - (3) Capital formation : machines, factories, roads; gov't projects are also key
 - (4) Technology : science, engineering, management, entrepreneurship
- Demand factor : AD must grow
Efficiency factor : productive efficiency (least costly way of using resources) + allocative efficiency (max social well-being)
- Growth Model
 - (1) Early growth theory (Adam Smith & Thomas Malthus) : critical role of land → has to end/slow down due to Law of Diminishing Returns (LoDR)
Technological innovations and capital investment can overcome the LoDR → land is not the limiting factor
 - (2) Neoclassical Growth Model (Robert Solow) : capital & technological change; primary tool : Aggregate Production Function (APF)
Capital deepening : increasing amount of capital per worker
LoDR applies here (not necessarily to land) in absence of tech change
→ only thru tech change, we can avoid economic stagnation
- Growth permits “making a better living”, but doesn't guarantee “good life”.
GDP per capita : essential measure of growth

Week 9

- Budget Deficits - both agree chronic is bad
Keynesians believe they're a necessary byproduct of an expansionary fiscal policy during recessions.
Classicals believe they should be avoided except in wartime
- Dark side of discretionary fiscal policy : budget deficits and public debt can occur when gov't use Keynesian fiscal policy to boost AD
Keynesian economics : fiscal stimulus and fiscal constraint
- Budget Surplus : taxes and other revenues > gov't expenditures this year
Balanced Budget
- Issue **bonds** to finance a budget deficit
National debt : total value of bonds owned by public
Debt calculated : the accumulated budget deficit – accumulated surpluses
- Debt-to-GDP ratio : very good yardstick of comparison
Real Versus Nominal Deficit : measures effective burden; $\text{real deficit} = \text{nominal deficit} - \text{inflation rate} \cdot \text{total debt}$
→ gov't can lower debt by increasing inflation!
Structural vs Cyclical deficits : structural is about tax structures etc, cyclical is attributable to recession (partly due to auto stabilizers)
- Okun's Law (again) : 1% fall in unemployment \iff 2% rise in GDP
- Calculation of structural deficit is sensitive to natural rate of unemployment (assumed).
Keynesian stimulus package would fail and create a larger deficit if the natural rate of unemployment is higher than assumed.
- Finance a budget deficit : (1) raise taxes, (2) borrow money, (3) print money
(1) Raise taxes : good, but rarely used (politically unpopular)
Balanced budget multiplier (always 1) : when you simultaneously increase gov't expenditures and increases taxes by the same amount, you get an economic expansion exactly equal to the increase in gov't expenditures.
(2) Borrow money : US Treasury (Fed not involved) issue bonds or treasury bills; "crowding out" due to zero sum game
Crowding out only applies to structural deficits → there's no automatic link b/w deficits and investment.
(3) Print money : Fed "accommodates" Treasury's expansionary fiscal policy, i.e. Fed buys the securities by printing \$
→ increase in M can cause inflation
- Deficit hawks vs. deficit doves (relatively harmless)
Hawks : chronic budget deficits crowd out private investment, increase trade deficits, and reduce economic growth + burden on future generations + redistributes income from poor to rich
Doves : budget deficits are stimulus to economic growth; most debt is internal (owed to citizens); external % has quadrupled
→ paying interest on external debt \sim tax on US citizens by foreigners.
Hawks argue that productivity falls since gov't expenditures are on "wasting assets" (tanks, fighter jets, welfare program, etc.) rather than productive capital
- A (potential) balanced budget amendment would compel Congress to annually balance its budget → impossible to use discretionary fiscal policy

Week 10

- Absolute advantage : can produce a good at an absolute lower cost
Comparative advantage : each country will benefit if it specializes in the export of goods that it can produce at relatively low cost
→ David Ricardo uses this to create the Free Trade model
- Trade Barriers & Protectionism (quota usually preferred politically over tariff)
Deadweight loss = loss in consumer surplus + loss in producer surplus
- Dumping : occurs when foreign producers sell exports below cost of production
Retaliatory measures can cause trade wars, e.g. Smoot-Hawley Tariff Act of 1930
- Non-tariff barriers (NTBs) : e.g. restrict the import of vegetables grown where certain pesticide is used (while knowing that other countries use this pesticide)
- Problem of Ricandian Free Trade
A cheating country uses unfair trade practices to illegally subsidize exports → becomes a zero sum game

Week 11

- Trade Identity Equation : if a country runs a trade deficit in its current account, it must balance that with inflows into its capital account.
- Exchange rate : currency trade rate
Appreciate : a country's currency that gains in value relative to another
Depreciate ...
5 reasons exchange rates move :
 - (1) diff rates of GDP growths - faster growth = depreciate
 - (2) diff rates of inflation - higher inflation rate = appreciate
 - (3) a change in real relative interest rates - higher r = appreciate
 - (4) a change in tastes
 - (5) currency speculation.
- Floating exchange rate system vs fixed exchange rate system ("pegs" its currency to the value of another or more)
Gold standard : the currency issued had to either be gold or be redeemable in gold; if trade deficit, then had to use gold reserves to buy value of currency from falling
Gold specie flow mechanism (reason why gold standard popular) by Hume
After WW 1, many nations temporarily abandoned it to finance → inflation & differing rates of inflation
→ gold standard's collapse → desperate countries engage in "competitive devaluations", which eventually led to WW 2
→ Bretton Woods agreement (partially fixed rate system that could be periodically adjusted to reflect changes in currency values)
Dollar standard : \$ became world's key currency
1971, Nixon abandoned the dollar standard and Bretton Woods (dollars no longer redeemable for gold)
- Hybrid system (today)
Moves to a managed float, i.e. country buys or sells its currency to reduce day-to-day volatility of currency fluctuations
Also have the pegged & currency blocs (e.g. Euro)
Allows monetary intervention
- Multiplier Link : a contractionary policy in US might lead to contraction in EU as well.
Monetary Link
- Germany (after WW 1) leads to EU-wide recession
Lesson : a country can't simultaneously have fixed exchange rates, open capital markets, and an independent monetary policy.
→ EU creates common currency, Euro.

Week 12

- Four elements in development : natural resources, human resources, capital formation, technology
- Cycle of Poverty
Rapid population growth → low per capita income → low level of saving + low level of demand → low level of investment in physical and human capital → low productivity → (again) low per capita income
- Policies for promoting growth
 1. Establishing the rule of law
 2. Opening economies to international trade
 3. Controlling population growth
 4. Encouraging foreign direct investment
 5. Building human capital
 6. Making peace with neighbors
 7. Establishing independent central banks (to prevent hyper-inflation)
 8. Establishing realistic exchange-rate policies
 9. Privatizing state industries (to improve efficiency and entrepreneurship)