

1. Introduction to Economics

Lecture Notes

1. Economics Defined - Economics is the study of the allocation of SCARCE resources to meet unlimited human wants.

- a. Microeconomics - is concerned with decision-making by individual economic agents such as firms and consumers.
- b. Macroeconomics - is concerned with the aggregate performance of the entire economic system.
- c. Empirical economics - relies upon facts to present a description of economic activity.
- d. Economic theory - relies upon principles to analyze behavior of economic agents.
- e. Inductive logic - creates principles from observation.
- f. Deductive logic - hypothesis is formulated and tested.

2. Usefulness of economics - economics provides an objective mode of analysis, with rigorous models that are predictive of human behavior.

3. Assumptions in Economics - economic models of human behavior are built upon assumptions; or simplifications that permit rigorous analysis of real world events, without irrelevant complications.

a. model building - models are abstractions from reality - the best model is the one that best describes reality and is the simplest.

b. simplifications:

1. ceteris paribus - means all other things equal.

2. problems with abstractions, based on assumptions. Too often the models built are inconsistent with observed reality - therefore they are faulty and require modification. When a model is so complex that it cannot

be easily communicated or its implications understood - it is less useful.

4. Goals and their Relations - Positive economics is concerned with what is; Normative economics is concerned with what should be. Economic goals are value statements.

a. Most societies have one or more of the following goals:

1. Economic efficiency,
2. Economic growth,
3. Economic freedom,
4. Economic security,
5. Equitable distribution of income,
6. Full employment,
7. Price level stability, and
8. Reasonable balance of trade.

5. Goals are subject to:

a. interpretation - precise meanings and measurements will often become the subject of different points of view, often caused by politics.

b. complementary - goals that are complementary are consistent and can often be accomplished together.

c. conflicting - where one goal precludes or is inconsistent with another.

d. priorities - rank ordering from most important to least important; again involving value judgments.

6. The Formulation of Public and Private Policy - Policy is the creation of guidelines, regulations or law designed to affect the accomplishment of specific economic goals.

a. Steps in formulating policy:

1. stating goals - must be measurable with specific stated objective to be accomplished.
2. options - identify the various actions that will accomplish the stated goals & select one, and
3. evaluation - gather and analyze evidence to determine whether policy was effective in accomplishing goal, if not re-examine options and select option most likely to be effective.

7. Objective Thinking:

- a. bias - most people bring many misconceptions and biases to economics. Because of political beliefs and other value system components rational, objective thinking concerning various issues requires the shedding of these preconceptions and biases.
- b. fallacy of composition - is simply the mistaken belief that what is true for the individual, must be true for the group.
- c. cause and effect - post hoc, ergo propter hoc - after this, because of this fallacy.
 1. correlation - statistical association of two or more variables.
 2. causation - where one variable actually causes another. Granger causality states that the thing that causes another must occur first, that the explainer must add to the correlation, and must be sensible.
- d. cost-benefit or economic perspective - marginal decision making - if benefits of an action will reap more benefits than costs it is rational to do that thing.

2. National Income Accounting

Lecture Notes

1. Gross Domestic Product - (GDP) the total value of all goods and services produced within the borders of the United States (or country under analysis).
2. Gross National Product - (GNP) the total value of all goods and services produced by Americans regardless of whether in the United States or overseas.
3. National Income Accounts are the aggregate data used to measure the well-being of an economy.

a. The mechanics of these various accounts are:

Gross Domestic Product

- Depreciation =

Net Domestic Product

+ Net American Income Earned Abroad
- Indirect Business Taxes =

National Income

- Social Security Contributions
- Corporate Income Taxes
- Undistributed Corporate Profits
+ Transfer Payments =

Personal Income

- Personal Taxes =

Disposable Income

4. Expenditures Approach vs. Incomes Approach

a. Factor payments + Nonincome charges - GNP/GDP adjustments = GDP
is the incomes approach

b. $Y = C + I_g + G + X_n$
is the expenditures approach (where $Y = \text{GDP}$)

5. Social Welfare & GDP - GDP and GNP are nothing more than measures of total output (or income). More information is necessary before conclusions can be drawn concerning social welfare. There are problems with both measures, among these are:

a. Nonmarket transactions such as household-provided services or barter are not included in GDP.

b. Leisure is an economic good but time away from work is not counted, however, movie tickets, skis, and other commodities used in leisure time are.

c. Product quality - no pretense is made in GDP to account for product or service quality.

d. Composition & Distribution of Output - no attempt is made in GDP data to account for the composition or distribution of income or output. We must look at sectors to determine composition and other information for distribution.

e. Per capita income - is GDP divided by population, very rough guide to individual income, but still mostly fails to account for distribution.

f. Environmental problems - damage done to the environment in production or consumption is not counted in GDP data unless market transactions occur to clean-up the damage.

g. Underground economy - estimates place the amount of underground economic activities may be as much a one-third of total U.S. output. Criminal activities, tax evasion, and other such activities are the underground economy.

6. Price Indices - are the way we attempt to measure inflation. Price indices are far from perfect measures and are based on surveys of prices of a specific market basket of goods.

a. Market-basket surveys - The market basket of goods and services are

selected periodically in an attempt to approximate what the average family of four purchases at that time.

b. CPI (U) is for urban consumers & CPI (W) is for urban wage earners. GDP Deflator is based on a broader market basket and may be more useful in measuring inflation.

1. Standard of living - is eroded if there is inflation and no equal increase in wages.

2. COLA - are escalator clauses that tie earnings or other payments to the rate of inflation, but only proportionally.

3. Other indices - American Chamber of Commerce Research Association in Indianapolis does a cross sectional survey, there are wholesale price indices and several others designed for specific purposes.

c. Inflation/Deflation - throughout most of U.S. economic history we have experienced deflation - which is a general decline in all prices. Inflation is primarily a post-World War II event and is defined to be a general increase in all prices.

d. Nominal versus Real measures - economists use the term nominal to describe money value or prices (not adjusted for inflation); real is used to describe data which are adjusted for inflation.

7. Measuring the price level

a. $CPI = \frac{\text{current year market basket}}{\text{base year market basket}} \times 100$
the index number for the base year will be 100.00 (or 1×100)

b. Inflating is the adjustment of prices to a higher level, for years when the index is less than 100.

c. Deflating is the adjustment of prices to a lower level, for years when the index is more than 100.

1. to change nominal into real the following equation is used:

Nominal value/(price index/100)

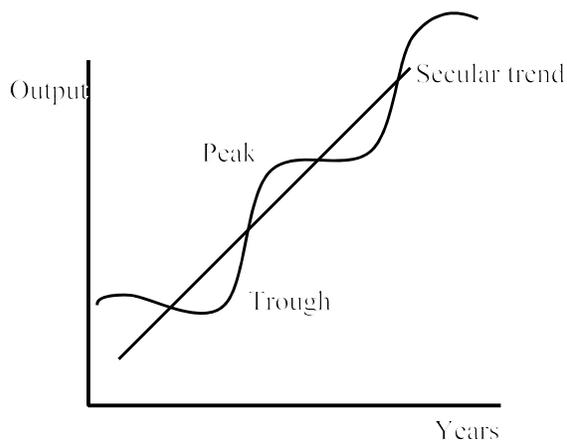
d. Changing base years - a price index base year can be changed to create a consistent series (remembering market baskets also change, hence the process has a fault). The process is a simple one. If you wish to convert a 1982 base year index to be consistent with a 1987 base year, then you use the index number for 1982 in the 1987 series and divide all other observations for the 1982 series using the 1982 value in 1987 index series.

3. Unemployment and Inflation

Lecture Notes

1. Business Cycle - is the recurrent ups and downs in economic activity observed in market economies.

- a. troughs are where employment and output bottom-out during a recession (downturn)
- b. peaks are where employment and output top-out during a recovery (upturn)
- c. seasonal trends are variations in data that are associated with a particular season in the year.
- d. secular trends are long-run trend (generally 25 or more years in macroeconomic data).



2. Unemployment - there are various causes of unemployment, including:

- a. frictional - consists of *search* and *wait* unemployment which is caused by people searching for employment or waiting to take a job in the near future.

b. structural - is caused by a change in composition of output, change in technology, or a change in the structure of demand.

c. cyclical - due to recessions, (business cycle).

3. Full employment - is not zero unemployment, full employment unemployment rate is the same as the natural rate.

a. natural rate - is thought to be about 4% and is structural + frictional unemployment.

1. potential output - is the output of the economy at full employment.

4. Unemployment rate - is the percentage of the workforce that is unemployed.

a. labor force - those employed or unemployed who are willing, able and searching for work; the labor force is about 50% of the total population.

b. part-time employment - those who do not have 40 hours of work (or equivalent) available to them, at 6 million U.S. workers were involuntarily part-time, and about 10 million were voluntarily part-time employees in 1992.

c. discouraged workers - those persons who dropped out of labor force because they could not find an acceptable job.

d. false search - those individuals who claim to be searching for employment, but really were not, some because of unemployment compensation benefits.

5. Okun's law

a. Okun's Law states that for each 1% unemployment exceeds the natural rate there will be a gap of 2.5% between actual GDP and potential GDP.

6. Burden of unemployment differs by several factors, these are:

a. Occupation - mostly due to structural changes.

b. Age young people tend to experience more frictional unemployment.

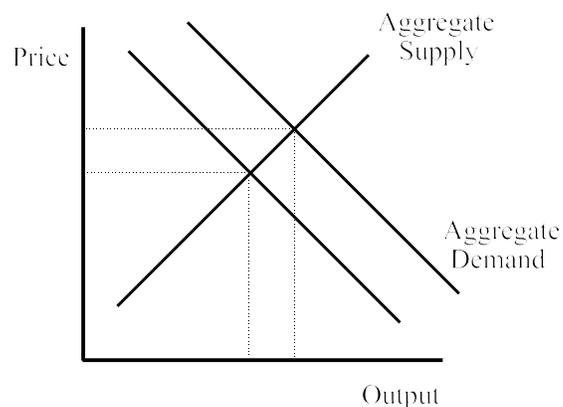
c. Race and gender reflect discrimination in the labor market and sometimes in educational opportunities.

7. Inflation - general increase in all prices.

a. CPI - is the measure used to monitor inflation.

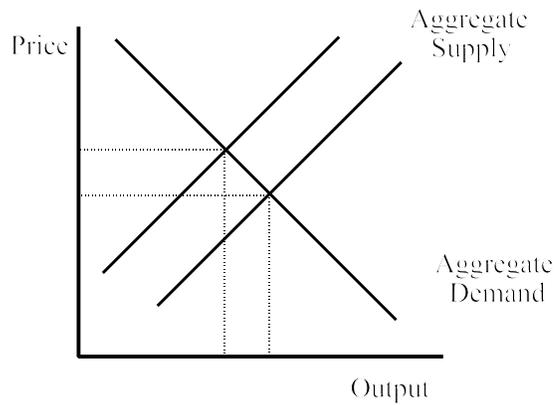
b. Rule of 70 -- the number of years for the price level to double = $70/\%$ annual rate of increase.

8. Demand - pull inflation

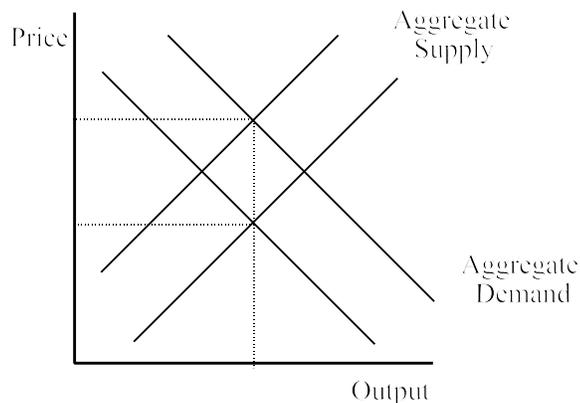


Using a naive aggregate demand - aggregate supply model (similar to the supply and demand diagrams for a market, except the supply is total output in all markets and demand is total demand in all markets, as the aggregate demand shifts outwards prices increase, but so does output.

9. Cost - push inflation - again using a naive aggregate supply - aggregate demand approach cost-push inflation results from a decrease in aggregate supply:



a. pure inflation results from an increase in aggregate demand that is equal to a decrease in aggregate supply:



10. Effects of inflation impact different people in different ways. If inflation is fully anticipated and people can adjust their nominal income to account for inflation then there will be no adverse effects, however, if people cannot adjust their nominal income or the inflation is unanticipated those individual will see their standard of living eroded.

a. Debtors typically benefit from inflation because they can pay loans-off in the future with money that is worth less, thereby creditors are harmed by inflation.

b. Inflation typically creates expectations among people of increasing prices, which may contribute to future inflation.

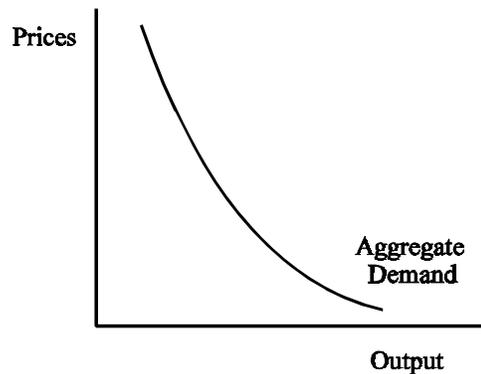
c. Savers generally lose money because of inflation if the rate of return on their savings is not sufficient to cover the inflation rate.

4. Aggregate Supply & Aggregate Demand

Lecture Notes

1. Aggregate demand is a downward sloping function that shows the inverse relation between the price level and domestic output. The reasons that the aggregate demand curve slopes down and to the right differs from the reasoning offered for individual market demand curves (substitution & income effects - these do not work with aggregates). The reasons for the downward sloping aggregate demand curve are:

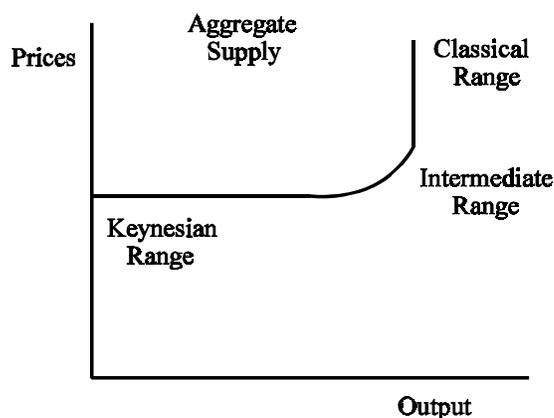
- a. wealth or real balance effect - higher price level reduces the real purchasing power of consumers' accumulated financial assets.
- b. interest-rate effect - assuming a fixed supply of money, an increase in the price level increases interest rates, which in turn, reduces interest sensitive expenditures on goods and services (e.g., consumer durables - cars etc.
- c. foreign purchases effect - if prices of domestic goods rise relative to foreign goods, domestic consumers will purchase more foreign goods as substitutes.



2. Determinants of aggregate demand - factors that shift the aggregate demand curve.

- a. expectations concerning real income or inflation (including profits from investments in business sector),
- b. Consumer indebtedness,
- c. Personal taxes,
- d. Interest rates,
- e. Changes in technology,
- f. Amount of current excess capacity in industry,
- g. Government spending,
- h. Net exports,
- i. National income abroad, and
- j. Exchange rates.

3. Aggregate Supply shows amount of domestic output available at each price level. The aggregate supply curve has three ranges, the Keynesian range (horizontal), the intermediate range (curved), and the classical range (vertical).



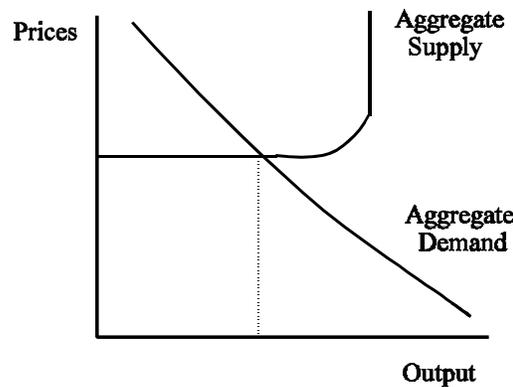
- a. Keynesian range - is the result of downward rigidity in prices and wages.
- b. Classical range - classical economists believed that the aggregate supply curve goes vertical at the full employment level of output.

c. Intermediate range - is the range in aggregate supply where rising output is accompanied by rising price levels.

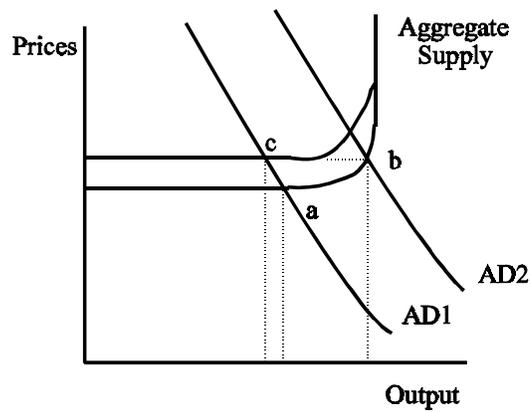
4. Determinants of Aggregate Supply cause the aggregate supply curve to shift.

- a. Changes in input prices,
- b. Changes in input productivity, and
- c. Changes in the legal/institutional environment.

5. Macroeconomic Equilibrium - intersection of aggregate supply and aggregate demand:



6. Ratchet Effect - is where there is a decrease in aggregate demand, that producers are unwilling to accept lower prices (rigid prices and wages) therefore there is a ratcheting of the aggregate supply curve (decrease in the intermediate and Keynesian ranges) which will keep the price level the same, but with reduced output. In other words, there can be increases in prices (forward) but no decreases (but not backward).



An increase in aggregate demand from AD1 to AD2 moves the equilibrium from point a to point b with real output and the price level increasing. However, if prices are inflexible downward, then a decline in aggregate demand from AD2 to AD1 will not restore the economy to its original equilibrium at point a. Instead, the new equilibrium will be at point c with the price level remaining at the higher level and output falling to the lowest point. The ratchet effect means that the aggregate supply curve has shifted upward (a decrease) in both the Keynesian and intermediate ranges.

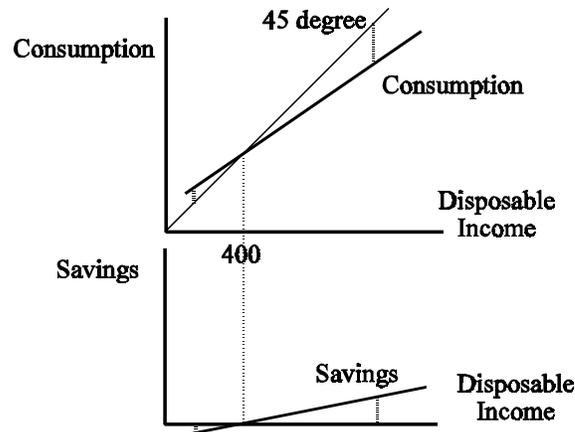
5. Classical and Keynesian Models

Lecture Notes

1. Classical theory of employment (macroeconomics) rests upon two founding principles, these are:
 - a. underspending unlikely - spending in amounts less than sufficient to purchase the full employment level of output is not likely.
 - b. even if underspending should occur, then price/wage flexibility will prevent output declines because prices and wages would adjust to keep the economy at the full employment level of output.
2. Say's Law "Supply creates its own demand" (well not exactly)
 - a. in other words, every level of output creates enough income to purchase exactly what was produced.
 - b. among others, there is one glaring omission in Say's Law -- what about savings?
3. Savings
 - a. output produces incomes, but savings is a leakage
 - b. savings give rise to investment and the interest rates are what links savings and investment.
4. Wage-Price flexibility
 - a. the classicists believed that a laissez faire economy would result in macroeconomic equilibria and that only the government could cause disequilibria.
5. Keynesian Model - beginning in the 1930s the classical models failed to explain what was going on, hence a new model was developed -- the Keynesian Model.
 - a. full employment is not guaranteed, because interest motivates both consumers & businesses differently - just because households save does not guarantee businesses will invest.
 - b. price-wage rigidity, rather than flexibility was assumed by Keynes

6. The Consumption schedule - income & consumption

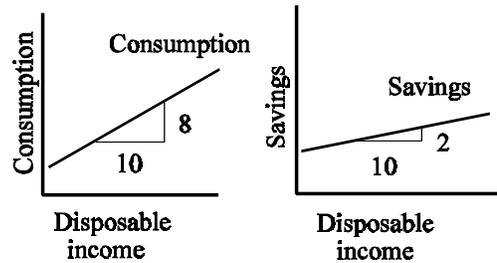
- a. consumption schedule - the 45 degree line is every point where disposable income is totally consumed.
- b. saving schedule - shows the amount of savings associated with the consumption function.



The consumption schedule intersects the 45 degree line at 400 in disposable income, this is also where the savings function intersects zero (in the graph below the consumption function). To the left of the intersection of the consumption function and the 45 degree line, the consumption function lies above the 45 degree line. The distance between the 45 degree line and the consumption schedule is dissavings, shown in the savings schedule graph by the savings function falling below zero. To the right of the intersection of the consumption function with the 45 degree line the consumption schedule is below the 45 degree line. The distance that the consumption function is below the 45 degree line is called savings, shown in the bottom graph by the savings function rising above zero.

b. Marginal Propensity to Consume (MPC) is the proportion of any increase in disposable income spent on consumption (if all is spent MPC is 1, if none is spent MPC is zero). The Marginal Propensity to Save (MPS) is the proportion of any increase in disposable income saved. The relation between MPC and MPS is:

$$1. \text{ MPC} + \text{MPS} = 1$$



c. The slope (rise divided by the run) of the consumption function is the MPC and the slope of the savings function is the MPS. Add the slope of the consumption function ($8/10$) to the slope of the savings function ($2/10$) and they equal one ($10/10$).

d. The Average Propensity to Consume (APC) is total consumption divided by total income, Average Propensity to Save (APS) is total savings divided by total income. Again, if income can be either saved or consumed (and nothing else) then the following relation holds:

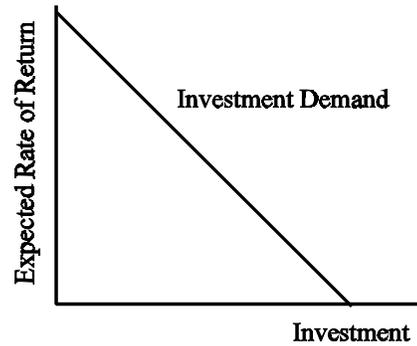
$$1. \text{ APC} + \text{APS} = 1$$

7. The nonincome determinants of consumption and saving are (these cause shifts in the consumption and saving schedules):

- a. Wealth,
- b. Prices,
- c. Expectations concerning future prices, incomes and availability of commodities,
- d. Consumer debts, and
- e. Taxes.

8. Investment

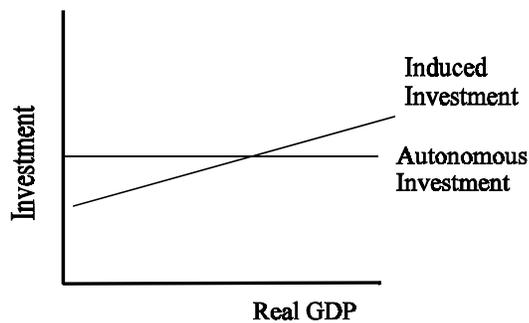
- a. investment demand curve is downward sloping:



b. determinants of investment demand are:

1. acquisition, maintenance & operating costs,
2. business taxes,
3. technology,
4. stock of capital on hand, and
5. expectations concerning profits in future.

c. Autonomous (determined outside of system) v. induced investment (function of GDP):



1. Instability in investment has marked U.S. economic history.

2. Causes of this instability are:
 - a. Variations in the durability of capital,
 - b. Irregularity of innovation,
 - c. Variability of profits, and
 - d. Expectations of investors.

6. Equilibrium in the Keynesian Model

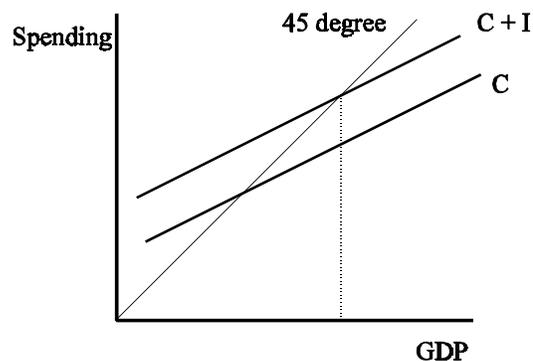
Lecture Notes

1. Equilibrium GDP - is that output that will create total spending just sufficient to buy that output (where aggregate expenditure schedule intersects 45 degree line).

a. Disequilibrium - where spending is insufficient (recessionary gap) or too high for level of output (inflationary gap).

2. Expenditures - Output Approach

a. $Y = C + I + G + X$ is the identity for income where $Y = \text{GDP}$, $C = \text{Consumption}$, $I = \text{Investment}$, $G = \text{Government expenditures}$, and $X = \text{Net exports (exports minus imports)}$

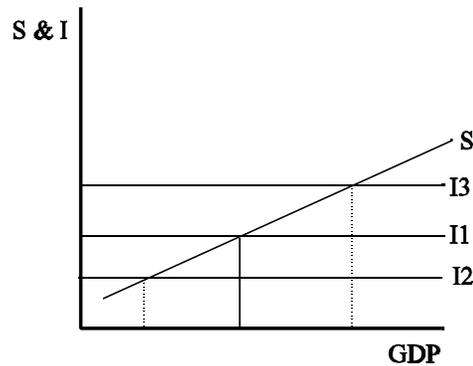


The equilibrium level of GDP is indicated above where $C + I$ is equal to the 45 degree line. Investment in this model is autonomous and the amount of investment is the vertical distance between the C and the $C + I$ lines. This model assumes no government and that net exports are zero.

3. Leakages - Injections Approach relies on the equality of investment and savings at equilibrium.

a. $I = S$ is equilibrium in the leakages - injections approach.

b. planned v. actual investment, the reason that the leakages - injection approach works is that planned investment must equal savings. Inventories can increase beyond that planned, hence output that is not purchased which is recessionary; or intended inventories can be depleted which is inflationary.



The original equilibrium is where I1 is equal to S and that level of GDP is shown with the solid indicator line. If we experience a decrease in investment we move down to I2 and if an increase in investment is observed it will be observed at I3.

4. If there is an increase in expenditures, there will be a respending effect. In other words, if \$10 is injected into the system, then it is income to someone. That first person will spend a portion of the income and save a portion. If MPC is .90 then the first individual will save \$1 and spend \$9.00. The second person receives \$9.00 in income and will spend \$8.10 and save \$0.90. This process continues until there is no money left to be spent. Instead of summing all of the income, expenditures, and/or savings there is a short-hand method of determining the total effect -- this is called the Multiplier, which is:

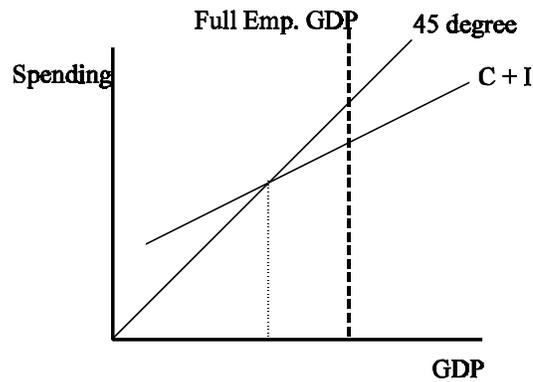
a. Multiplier M = 1/1-MPC or 1/MPS

b. significance - any increase in expenditures will have a multiple effect on the GDP.

5. Paradox of thrift - the curious observation that if society tries to save more it may actually save the same amount - unless investment moves up as a result of the savings, all that happens is that GDP declines and if investment is autonomous then savings remain the same.

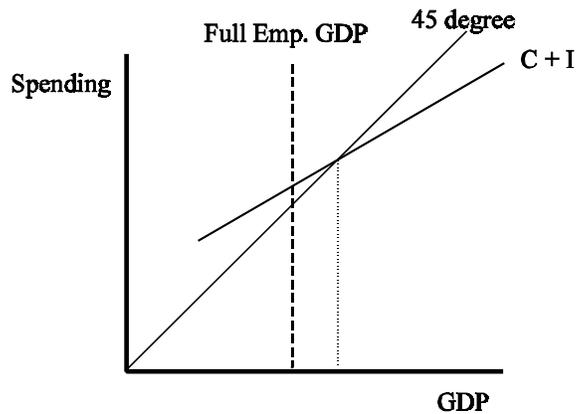
6. Full Employment level of GDP may not be where the aggregate expenditures line intersects the 45 degree line. There are two possibilities, (1) a recessionary gap or (2) an inflationary gap, both are illustrated below.

a. Recessionary gap



The distance between the C + I line and the 45 degree line along the dashed indicator line is the recessionary gap. The dotted line shows the current macroeconomic equilibrium.

b. Inflationary gap



The distance between the C + I line and the 45 degree line along the dashed indicator line is the inflationary gap. The dotted indicator line shows the current macroeconomic equilibrium.

7. Reconciling AD/AS with Keynesian Cross the various $C + I$ and 45 degree line intersections, if multiplied by the appropriate price level will yield one point on the aggregate demand curve. Shifts in aggregate demand can be shown with holding the price level constant and showing increases or decreases in $C + I$ in the Keynesian Cross model. Both models can be used to analyze essentially the same macroeconomic events.

7. Fiscal Policy

Lecture Notes

1. Discretionary Fiscal Policy - involves government expenditures and/or taxes to stabilize the economy.

a. Employment Act of 1946 - formalized the government's responsibility in promoting economic stability.

b. simplifying assumptions for the analyses presented here:

1. exogenous I & X ,
2. G does initially impact private decisions,
3. all taxes are personal taxes,
4. some exogenous taxes collected,
5. no monetary effects, fixed initial price level, and
6. fiscal policy impacts only demand side.

2. Changes in Government Expenditures - can be made for several reasons:

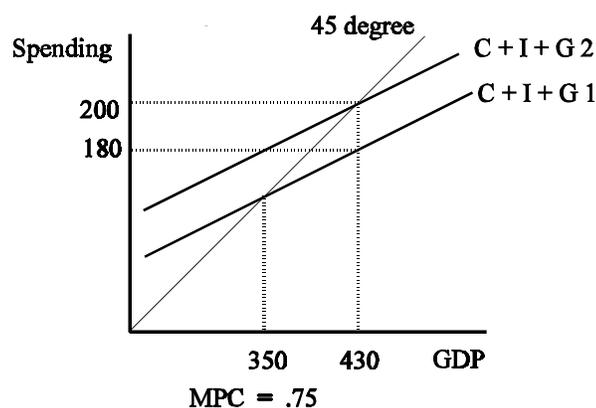
a. Stabilization of the economy,

1. To close a recessionary gap the government must spend an amount that times the multiplier will equal the total gap.

2. To close an inflationary gap the government must cut expenditures by an amount that times the multiplier will equal the inflationary gap.

b. Political goals, and

c. Provision of necessary goods & services.



An increased government expenditure of \$20 billion results in an increase in GDP of \$80 billion with an MPC of .75, hence a multiplier of 4.

3. Taxation effects both consumption and savings.

a. If the government uses a lump sum tax increase to reduce an inflationary gap the reduction in GDP occurs thusly:

1. The lump sum tax must be multiplied by the MPC to obtain the reduction in consumption;
2. The reduction in consumption is then multiplied by the multiplier.

b. A decrease in taxes works the same way, the total impact is the lump sum reduction times the MPC to obtain the increase in consumption, which is, in turn, multiplied by the multiplier to obtain the full impact on GDP.

c. A short-cut method with taxes is to calculate the multiplier, as you would with an increase in government expenditures and deduct one from it.

4. The balanced budget multiplier is always one.

a. Occurs when the amount of government expenditures goes up by the same amount that a lump sum tax is increased.

b. That is because only the initial expenditure increases GDP and the remaining multiplier effect is offset by taxation.

5. Tax structure refers to the burden of the tax:
 - a. progressive is where the effective tax rate increases with ability to pay,
 - b. regressive is where the effective tax rate increases as ability to pay decreases,
 - c. proportional is where a fixed proportion of ability to pay is taken in taxes.
6. Automatic stabilizers help to smooth business cycles without further legislative action:
 - a. Progressive income taxes,
 - b. Unemployment compensation,
 - c. Government entitlement programs
7. Fiscal Lag - there are numerous lags involved with the implementation of fiscal policy. It is not uncommon for fiscal policy to take 2 or 3 years to have a noticeable effect, after Congress begins to enact fiscal measures.
 - a. Recognition lag - how long to start to react.
 - b. Administrative lag - how long to have legislation enacted & implemented.
 - c. Operational lag - how long it takes to have effects in economy.
8. Politics and Fiscal Policy.
 - a. Public choice economists claim that politicians maximize their own utility by legislative action.
 - b. Log-rolling and negotiations results in many bills that impose costs.
9. Government deficits and crowding - out. It is alleged that private spending is displaced when the government borrows to finance spending:
 - a. Ricardian Equivalence - deficit financing same effect on GDP as increased tax.

10. Open economy problems. Because there is a foreign sector that impacts GDP there are potential problems for fiscal policy arising from foreign sources.

a. increased interest - net export effect

1. An increase in the interest rate domestically will attract foreign capital, but this increases the demand for dollars which increases their value and thereby reduces exports, hence GDP.

b. foreign shocks - in addition to currency exchange rates.

1. Oil crises increased costs of production in the U.S.

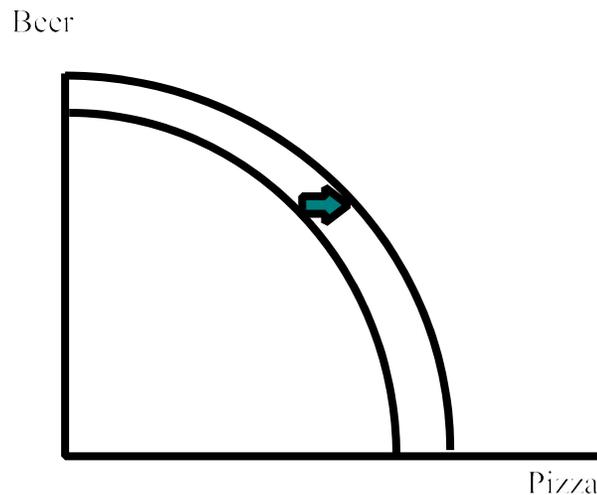
8. Economic Growth

Lecture Notes

1. Economic growth is defined in one of two ways, as a total (hence GDP) or as a per capita (hence GDP per capita). Each of these definitions has its uses. The second definition is of the greatest importance in defining the standard of living in a country.

a. The following production possibilities frontier shows economic growth in a simple two commodity economy.

b. The assumptions underpinning the production possibilities model is that there are only two commodities produced, there is a fixed technology and number of resources, and these resources are used in an economically efficient manner.



2. Developing economies are classified into two categories:

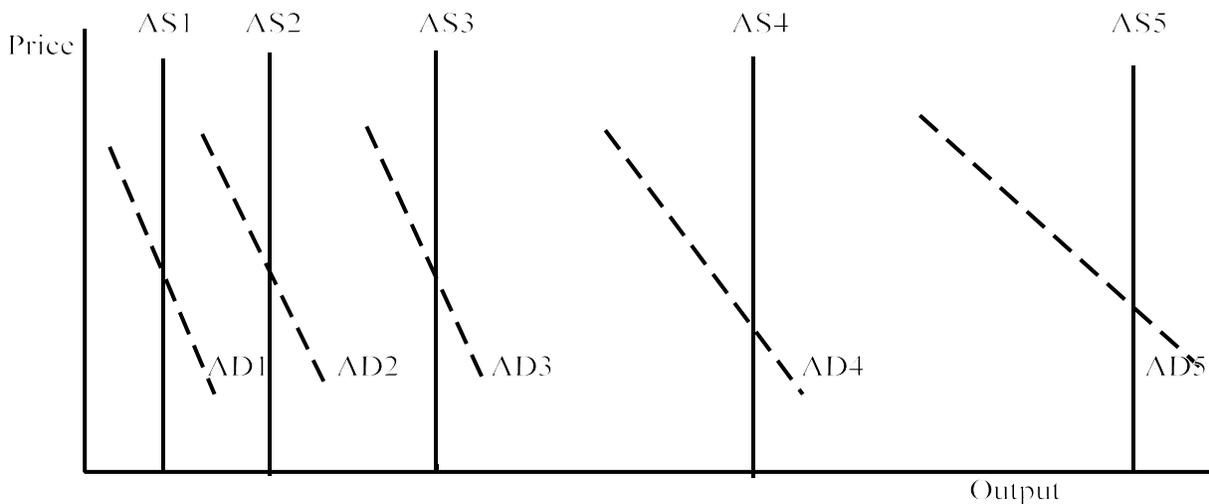
a. **middle-income countries \$760 to \$9300 per capita GDP in 2000**

b. **low-income countries those below \$760 per capita GDP in 2000.**

1. The majority of Latin countries are middle-income countries and the majority of sub-Saharan African countries and South-Asian countries are low income countries. The industrial, high income countries are the U.S., Canada, Australia, New Zealand, Japan, and Western Europe.

c. **Growth-paths are the historical tracing of how an economy moved from being less developed to a developed economy.** The prerequisites to economic growth, which include:

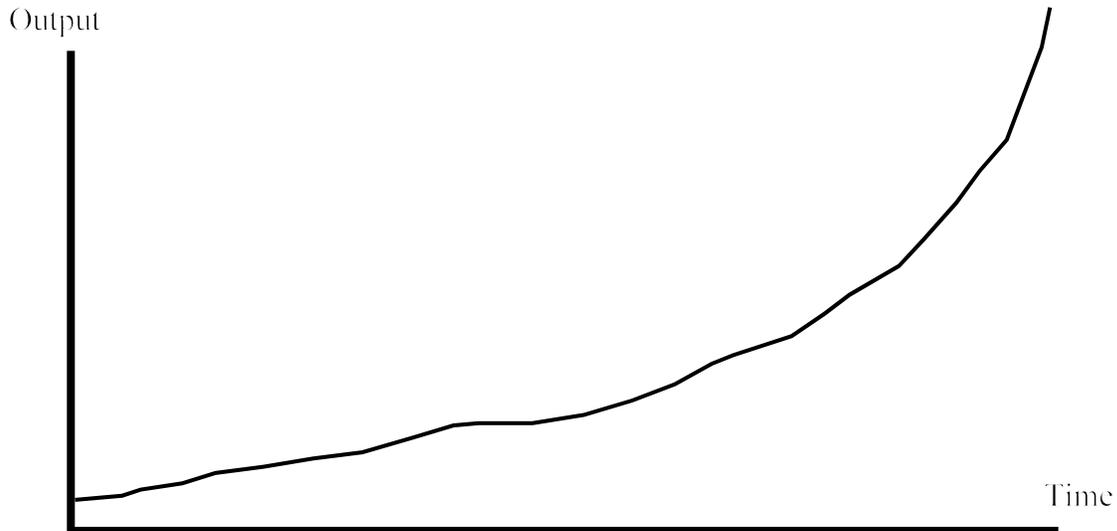
- (1) Establishing and implementing domestic rules of law,
- (2) Opening the economy to international trade,
- (3) Controlling population growth,
- (4) Encouraging foreign direct investment,
- (5) Building human capital,
- (6) Reasonable monetary institutions and markets,
- (7) Minimizing the role of the military both domestically and internationally, and
- (8) Encouraging the growth of the private sector relative to the public sector.



d. Aggregate demand, aggregate supply over time shows accelerating economic growth.

1. The following graph translates the AS/AD model into the secular trend.

2. In Indonesia, India, and several middle-eastern and African countries there are significant problems with corruption, and capital flight. It is nearly impossible to attract capital to a developing nation, if the



government is corrupt and there is little in the way of political stability or the rule of law. In the late 1990s there were stories coming out of Indonesia where high government officials were leaving the country with several suitcases of U.S. dollars – classic capital flight.

e. **Economic growth is a long-term secular trend.**

3. The accumulation of capital in the United States was both domestic capital, and the attraction of foreign capital.

- a. Political instability in Europe
- b. U.S. natural resources
- c. Rule of law and political stability
- d. Innovation

4. The Asian Tiger economies, China, Taiwan, Indonesia, South Korea, Malaysia, the Philippines, and Thailand all experienced very substantial growth.

a. Much of this growth depended on two things, low wage labor for manufacturing, particularly in the electronics industry, and exports.

5. The majority of the world's population lives in low-income countries.

a. Indebted,

1. Help here is important

b. Population outgrowing the economy,

c. Narcotic effect of foreign aid

d. Brain Drain

e. Political instability

1. Arms trade

f. Capital Flight

g. International Trade

9. Money and Banking

Lecture Notes

1. Functions of Money - there are three functions of money:

a. Medium of exchange - accepted as "legal tender" or something of general and specified value.

1. Use avoids reliance on barter.

2. Barter requires a coincidence of wants and severely complicates a market economy.

b. Measure of value - permits value to be stated in terms of a standard and universally understood standard.

c. Store of value - can be saved with little risk, chance of spoilage and virtually no cost and later exchanged for commodities without these positive storage characteristics.

2. Supply of money

a. There are numerous definitions of money M1 through M3 most commonly used.

1. M1 is currency + checkable deposits

2. M2 is M1 + noncheckable savings account, time deposits of less \$100,000, Money Market Deposit Accounts, and Money Market Mutual Funds.

3. M3 is M2 + large time deposit (larger than \$100,000).

3. Near Money - are items that fulfill portions of the requirements of the functions of money.

a. Credit cards - fulfill exchange function, but are not a measure of value and if there is a credit line, can be used to store value.

b. Other forms of near money:

1. Precious metals - store of value, but not easily exchanged

2. Stocks and Bonds - earnings instruments, but can be used as store of value.

c. Implications for near money - stability, spending habits & policy

4. What gives money value

a. No more gold standard

1. Nixon eliminated gold standard

b. The Value of money depends upon:

1. acceptability for payment,

2. because the government claims it is legal tender, and

3. its relative scarcity.

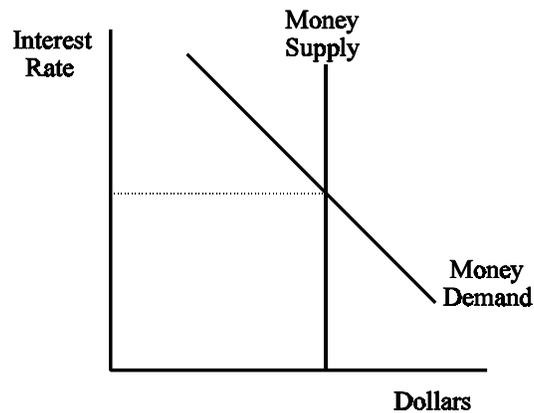
5. Value of dollar = $D = 1/P$

6. Demand for Money - three components of money demand:

a. Transactions demand

b. Asset demand

c. Total demand



The money supply curve is vertical because the supply of money is exogenously determined by the Federal Reserve. The money demand curve slopes downward and to the right. The intersection of the money demand and money supply curves represents equilibrium in the money market and determines the interest rate (price of money).

7. Money market

- a. With bonds that pay a specified interest payment per quarter then:
 1. interest rate and value of bond inversely related

8. U.S. Financial System

- a. FDIC - Federal Deposit Insurance Corporation - guarantees bank deposits.
- b. Federal Reserve System - is comprised of member banks. The Board of Governors and Chairman are nominated by the President of United States. The structure of the system is:
 1. Board of Governors
 2. Open Market Committee
 3. Federal Advisory Council
 4. 12 regions

c. Functions

1. Set reserves requirements,
 2. Check clearing services,
 3. Fiscal agents for U.S. government,
 4. Supervision of banks,
 5. Control money supply through FOMC,
9. Moral hazard - insuring reduces insured's incentive to assure risk does not happen

10. Multiple Expansion of Money

Lecture Notes

1. Balance sheet (T accounts -- assets = liabilities + net worth)
 - a. is nothing more than a convenient reporting tool.

2. Fractional Reserve Requirements
 - a. Goldsmiths used to issue paper money receipts, backed by stocks of gold. The stocks of gold acted as a reserve to assure payment if the paper claims were presented for payment.
 1. Genghis Khan first issued paper money in the thirteenth century - it was backed by nothing except the Khan's authority.

 - b. The U.S. did not have a central banking system from the 1820 through 1914. In the early part of this century several financial panics pointed to the need for a central banking and financial regulation.
 1. States and private companies used to issue paper money.

 2. In the early days of U.S. history Spanish silver coins were widely circulated in the U.S.

 3. The first U.S. paper money was issued during the Civil War (The Greenback Act), which included fractional currency (paper dimes & nickels!).

 - c. Today, the Federal Reserve requires banks to keep a portion of its deposits as reserves.
 1. purposes to keep banks solvent & prevent financial panics

3. RRR (Required Reserve Ratio) and multiple expansion of money supply through T accounts
 - a. How reserves are kept

1. Loans from Fed - discount rate at which Fed loans reserves to members
 2. Vault cash
 3. Deposits with Fed
 4. Fed funds rate - the rate at which members loan each other reserves
- b. RRR = Required reserve/demand deposit liabilities
- c. actual, required, and excess reserves
4. Money created through deposit/loan redepositing
- a. Money is created by a bank receiving a deposit, and then loaning that non-reserve portion of the deposit, which is deposited and loans made against those deposits.
 1. If the required reserve ratio is .10, then a bank must retain 10% of each deposit as a reserve and can loan 90% of the deposit; the multiple expansion of money, assuming a required reserve ratio of .10, is therefore:

Deposit	Loan
\$10.00	9.00
9.00	8.10
8.10	7.29
.	.
.	.
<hr style="width: 50%; margin: 0 auto;"/>	<hr style="width: 50%; margin: 0 auto;"/>
\$ 100.00	\$90.00

Total new money is the initial deposit of \$10 + \$90 of multiple expansion for a total of \$100.00 in new money.

5. Money multiplier $M_m = 1/RRR$
- a. Is the short-hand method of calculating the entries in banks' T accounts and shows how much an initial injection of money into the system generates in total money supply.

b. With a required reserve ratio of .05 the money multiplier is 20 & with a required reserve ratio of .20 the money multiplier is 5.

c. the Federal Reserve needs to inject only that fraction of money that time the multiplier will increase the money supply to the desired levels.

11. Federal Reserve and Monetary Policy

Lecture Notes

1. Monetary policy, defined and objectives

- a. Monetary policy is carried out by the Federal Reserve System and is focused on controlling the money supply.
- b. The fundamental objective of monetary policy is to assist the economy in attaining a full employment, non-inflationary equilibrium.

2. Tools of Monetary Policy

- a. Open Market Operations is the selling and buying of U.S. treasury obligations in the open market.
- b. Expansionary monetary policy involves the buying of bonds.
 - 1. The Fed buying bonds, it puts money into the hands of those who had held bonds.
- c. Contractionary monetary policy involves the selling of bonds.
 - 1. The Fed sells bonds it removes money from the system and replaces it with bonds.

3. Required Reserve Ratio - the Fed can raise or lower the required reserve ratio.

- a. Increasing the required reserve ratio, reduces the money multiplier, hence reduces the amount by which multiple expansions of the money supply can occur.

- 1. decreasing the required reserve ratio increases the money multiplier, and permits more multiple expansion of the money supply.

4. The Discount Rate is the rate at which the Fed will loan reserves to member banks for short periods of time.

5. Velocity of Money - is how often the money supply turns-over.
 - a. The quantity theory of money is: $MV = PQ$
 1. This equation has velocity (V) which is nearly constant and output (Q) which grows slowly, so what happens to the money supply (M) should be directly reflect in the price level (P).
6. Target Dilemma in Monetary Policy
 - a. Interest rates and the business cycle may present a dilemma. Expansionary monetary policy may result in higher interest rates which dampen expansionary policies.
 - b. Fiscal and monetary policies may also be contradictory.
7. Easy Money - lowering interest rates, expanding money supply.
 - a. mitigate recession and stimulate growth.
8. Tight Money - increasing interest rates, contracting money supply.
 - a. mitigate inflation and slow growth.
9. Monetary rules - Milton Friedman
 - a. Discretionary monetary policy often misses targets in U.S. monetary history
 - b. Suspicion of Fed and FOMC – perhaps overblown

12. Economic Stability and Policy

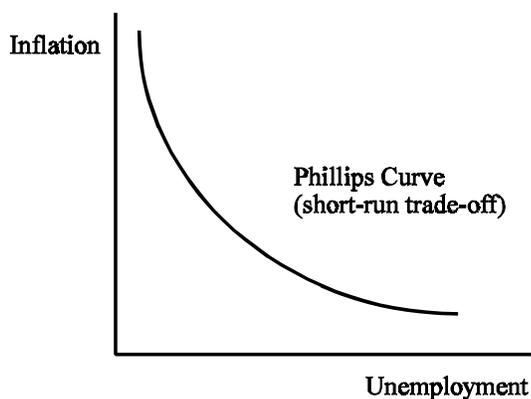
Lecture Notes

1. Inflation, Unemployment and Economic Policy

a. The misery index is the inflation rate plus the unemployment rate.

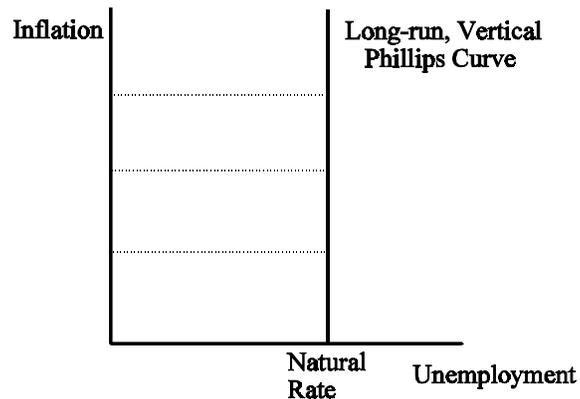
2. The Phillips Curve is a statistical relation between unemployment and inflation named for A. W. Phillips who examined the relation in the United Kingdom and published his results in 1958. (Actually Irving Fisher had done earlier work on the subject in 1926).

a. Short run trade-off



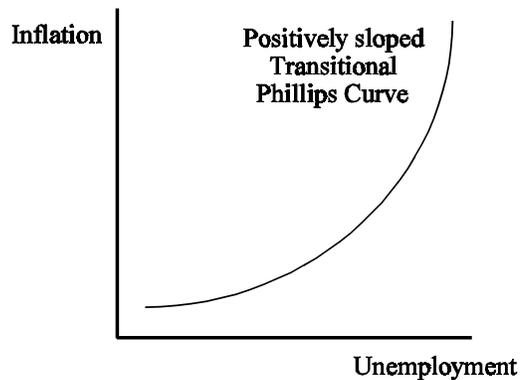
Often used to support activist role for government, however, the short-run trade-off view of the Phillips curve demonstrates that there is a cruel choice between increased inflation or increased unemployment, but low inflation and unemployment together are not possible.

b. Long run Phillips Curve is alleged to be vertical at the natural rate of unemployment.



This long-run view of the Phillips Curve is also called the Natural Rate Hypothesis. It is based on the idea that people constantly adapt to current economic conditions and that their expectations are subject to "adaptive" revisions almost constantly. If this is the case, then business and consumers cannot be fooled into thinking that there is a reason for unemployment to cure inflation or vice versa.

c. Possible positive sloping has hypothesized by Milton Friedman. Friedman was of the opinion that there may be a transitional Phillips curve while people adapt both their expectations and institutions to new economic realities. The positively sloped Phillips curve is shown in the following picture:



The positively sloped transitional Phillips Curve is consistent with the observations of the early 1980s when both high rates of unemployment existed together with high rates of inflation -- a condition called stagflation.

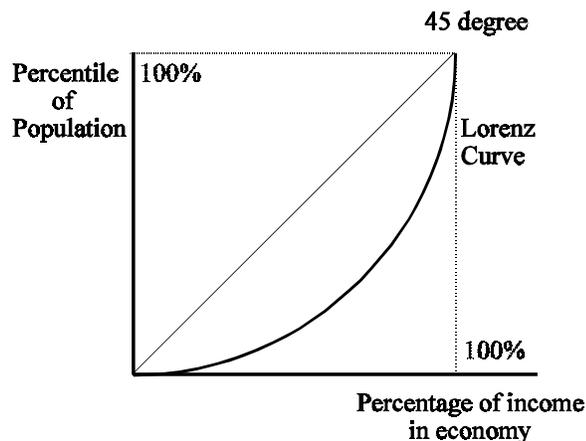
d. Cruel choices only exist in the case of the short-run trade-off view of the Phillips Curve. However, there maybe a "Lady and Tiger Dilemma" for policy makers relying on the Phillips Curve to make policy decisions.

3. Rational expectations is a theory that businesses and consumers will be able to accurately forecast prices (and other relevant economic variables). If the accuracy of consumers' and business expectations permit them to behave as though they know what will happen, then it is argued that only a vertical Phillips Curve is possible, as long as political and economic institutions remain stable.

4. Market policies are concerned with correcting specific observed economic woes.

a. Equity policies are designed to assure "a social safety net" at the minimum and at the liberal extreme to redistribute income.

1. The Lorenz Curve and Gini Coefficients are used to measure income distribution in economies.



The Lorenz curve maps the distribution of income among across the population. The 45 degree line shows what the distribution of income would be if income was uniformly distributed across the population. However, the Lorenz curve drops down below the 45 degree line showing that poorer people receive less than rich people.

The Gini coefficient is the percentage of the triangle mapped out by the 45 degree line, the indicator line from the top of the 45 degree line to the percentage of income axis, and the percentage of income axis that is accounted for by the area between the Lorenz curve and the 45 degree line. If the Gini coefficient is near zero,

income is close to uniformly distributed; if is near 1 then income is mal-distributed.

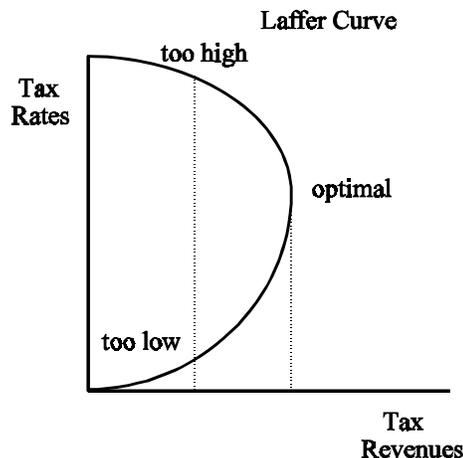
- b. Productivity is also the subject of specific policies. The Investment Tax Credit, WIN program, and various state and federal training programs are focused increasing productivity.
- c. Trade barriers have been reduced through NAFTA and GATT in hopes of fostering more U.S. exports.

5. Wage-Price Policies

- a. Attempts have been made to directly control inflation through price controls, this seemed to work reasonably well during World War II. Carter tried voluntary guidelines that failed, and Nixon tried controls that simply were a disaster.

6. Supply Side Economics of the Reagan Administration were based on the theory that stimulating the economy would prevent deficits as government spending for the military was increased. This failed theory was based on something called the Laffer Curve.

- a. Laffer Curve (named for Arthur Laffer) is a relation between tax rates and tax receipts. Laffer's idea was rather simple, he posited that there was optimal tax rate, above which receipt went down and below which receipts went down. The Laffer curve is shown below:



The Laffer Curve shows that the same tax receipts will be collected at the rates labelled both "too high" and "too low." What the supply-siders thought was that tax

rates were too high and that a reduction in tax rates would permit them to slide down and to the right on the Laffer Curve and collect more revenue. In other words, they thought the tax rate was above the optimal. We got a big tax rate reduction and found, unfortunately, that we were below the optimal and tax revenues fell, while we dramatically increased the budget. In other words, record-breaking deficits and debt.

b. There were other tenets of the supply-side view of the world. These economists thought there was too much government regulation. After Jimmy Carter de-regulated trucking and airlines, there was much rhetoric and little action to de-regulate other aspects of American economic life.

7. Unfortunately, the realities of American economic policy is that politics is often main motivation for policy.

a. Tax cuts are popular, tax increases are not.

b. Deficits are a natural propensity for politicians unwilling to cut pork from their own districts and unwilling to increase taxes.

8. Politics - economics provides a scientific approach to understanding, politics is the "art of the possible" what is good economically maybe horrible politically and vice versa

a. Public choice literature

1. Politicians act in self-interest just like the rest of us

13. Epilogue

Lecture Notes

1. Why study Macroeconomics:

a. Knowledge is prerequisite for democracy

1. Founding fathers thought that knowledge was what prevented despotism – Jefferson and the free Press

b. Business conditions

1. Environment in which business is conducted, importance cannot be minimized in a practical sense.
2. Becoming more important as economy becomes more global – exchange rates, reasons for shifting fortunes etc.

c. Self-preservation – very powerful incentives

1. Individual economic planning – 401K, investments, etc.
2. Understanding markets requires understanding the environment in which they work – full circle to a and b above

2. Futurism, macroeconomic variables are powerful determinants of the future well-being of societies and people.

a. Commodities - Oil (energy in general); metals; natural resources; etc.

b. Climate changes impacting markets and whole areas

c. Technological changes - products and processes available today which didn't exist 10 years ago

d. Political and institutional changes - terrorism, foreign policy etc.

e. Unanticipated issues and reactions – the historical record shows that much of this shapes what the modern world is.

3. Economics as a career

- a. Economics majors, areas in which they work, one of fastest growing majors in U.S. universities
- b. Graduate training almost required today - economic foundations in business, law, teaching, etc.
- c. Not dependent on institutional arrangements