

ECONOMICS 262 CHAPTER 19

GROSS DOMESTIC PRODUCT

ECONOMISTS MEASURE TOTAL PRODUCTION BY THE GROSS DOMESTIC PRODUCT.

~~GDP IS THE MARKET VALUE OF ALL FINAL GOODS AND SERVICES PRODUCED IN THE COUNTRY DURING A PERIOD OF TIME, USUALLY ONE YEAR.~~

DONE BY THE BUREAU OF ECONOMIC ANALYSIS (BEA), WHICH IS PART OF THE DEPARTMENT OF COMMERCE.

GDP MEASURES MARKET VALUES, NOT QUANTITIES

WE CAN ADD TOGETHER CARS AND EGGS AND GET A MEANINGFUL MEASURE. SO IT IS THE MARKET VALUE, IN DOLLARS OF ALL GOODS AND SERVICES PRODUCED.

GDP INCLUDES ONLY THE MARKET VALUE OF FINAL GOODS

A FINAL GOOD IS ONE THAT IS PURCHASED BY ITS FINAL USER AND NOT INCLUDED IN THE PRODUCTION OF ANOTHER PRODUCT OR SERVICE.

TIRES ARE AN INTERMEDIATE GOOD WHILE THE TRUCK GM PRODUCES IS THE FINAL GOOD.

GDP INCLUDES ONLY CURRENT PRODUCTION

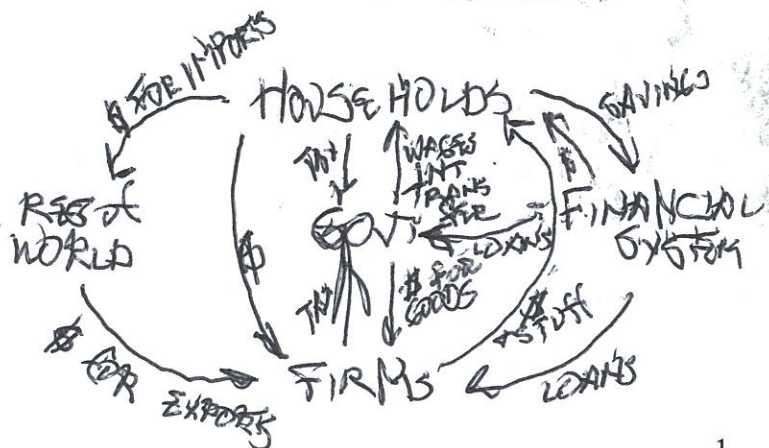
THIS IS PRODUCTION THAT TAKES PLACE DURING THE INDICATED TIME PERIOD.

IT DOES NOT COUNT USED GOODS OR UNSOLD GOODS PRODUCED IN ANOTHER TIME PERIOD.

USED CARS
OR LAST YEAR'S
CAR SOLD
THIS YEAR

PRODUCTION, INCOME, AND THE CIRCULAR FLOW DIAGRAM

FIGURE 19-1 ON PAGE 617



WHEN TOTAL PRODUCTION IS MEASURED, WE ALSO MEASURE THE VALUE OF TOTAL INCOME.

IF YOU BUY AN IPOD FOR \$250, ALL OF THE \$250 ENDS UP AS SOMEONE ELSE'S INCOME.

APPLE AND THE STORE GET SOME OF THE \$250. WORKERS AT APPLE WILL GET SOME AS WAGES, THE SALES PERSON WILL GET SOME, AS WILL THE PEOPLE WHO SOLD THE SUPPLIES TO APPLE TO MAKE IT.

FIRMS SELL GOODS AND SERVICES TO THREE GROUPS THAT GO INTO GDP

1. DOMESTIC HOUSEHOLDS
2. FOREIGN FIRMS AND HOUSEHOLDS
3. GOVERNMENT

GOODS SOLD TO FOREIGN FIRMS AND HOUSEHOLDS ARE EXPORTS.

NUMBERS AFFECTED BY US MAKE OVERSEAS INSTEAD OF EXPORT

FIRMS USE FACTORS OF PRODUCTION- NATURAL RESOURCES, LABOR, CAPITAL.

HOUSEHOLDS SUPPLY THE FACTORS THROUGH WAGES, INTEREST, RENT, AND PROFIT.

TRANSFER PAYMENTS OF GOVERNMENT INCLUDE SOCIAL SECURITY, UNEMPLOYMENT INSURANCE, AND OTHER ENTITLEMENT PROGRAMS.

NOTHING HAPPENS UNLESS WE BUY SOMETHING WITH THE MONEY WE MAKE MAKING THE STUFF E BUY.

SPENDING ON FOREIGN-PRODUCED GOODS AND SERVICES IS CALLED IMPORTS.

HOUSEHOLD ALSO PAY TAXES TO GOVERNMENT.

MONEY NOT SPENT IS PUT INTO BANKS OR USED TO BUY STOCKS OR BONDS. — FINANCIAL SYSTEM.

COMPONENTS OF GDP

PERSONAL CONSUMPTION EXPENDITURES – “CONSUMPTION”

SERVICES, NON-DURABLE GOODS (FOOD, CLOTHING, ETC) AND DURABLE GOODS (CARS, WASHING MACHINES, ETC.)

NEW HOUSES ARE NOT INCLUDED IN CONSUMPTION, BUT RATHER INCLUDED IN THE "INVESTMENT" CATEGORY.

GROSS PRIVATE DOMESTIC INVESTMENT – "INVESTMENT"

THERE ARE THREE CATEGORIES

1. BUSINESS FIXED INVESTMENT (FACTORIES, MACHINE, BUILDINGS, ETC)
2. RESIDENTIAL INVESTMENT (NEW HOUSING)
3. CHANGES IN BUSINESS INVENTORIES

GENERALLY
EQUALS
SAVINGS

GOVERNMENT CONSUMPTION AND GROSS INVESTMENT – "GOVERNMENT PURCHASES"

THIS IS SPENDING BY FEDERAL, STATE, AND LOCAL GOVERNMENT ON GOODS AND SERVICES, INCLUDING TEACHERS' SALARIES, HIGHWAYS, AIRCRAFT CARRIERS, ETC.

NET EXPORTS OF GOODS AND SERVICES – "NET EXPORTS"

NET EXPORTS ARE EQUAL TO EXPORTS MINUS IMPORTS.

EXPORTS ARE GOODS PRODUCED IN THE U.S. BUT PURCHASED BY FOREIGN FIRMS, HOUSEHOLDS, AND GOVERNMENTS.

IMPORTS ARE GOODS AND SERVICES PRODUCED IN OTHER COUNTRIES BUT BOUGHT BY U.S. FIRMS, HOUSEHOLDS, AND GOVERNMENTS.

WE SUBTRACT IMPORTS FROM TOTAL EXPENDITURES BECAUSE OTHERWISE WE WOULD BE INCLUDING SPENDING THAT DOES NOT RESULT IN PRODUCTION OF NEW GOODS AND SERVICES IN THE U.S.

GDP EQUATION

$Y = \text{GDP}$; $C = \text{CONSUMPTION}$; $I = \text{INVESTMENT}$; $G = \text{GOVERNMENT PURCHASES}$; $NX = \text{NET EXPORTS}$

$$Y = C + I + G + NX$$

CONSUMER SPENDING ON SERVICES IS GREATER THAN THE SUM OF SPENDING ON DURABLE AND NON-DURABLE GOODS.

THIS INDICATES A TREND IN THE U.S. AN OTHER HIGH-INCOME NATION AWAY FROM MANUFACTURING AND TOWARD THE SERVICE ECONOMIES. THESE COUNTRIES HAVE BECOME OLDER AND WEALTHIER, AND THEY HAVE A HIGHER DEMAND FOR HEALTH AND FINANCIAL SERVICES.

7 P. 620
70% of GDP
[scribbles]

BUSINESS FIXED INVESTMENT IS THE LARGEST PART OF INVESTMENTS - NEW FACTORIES, COMPUTERS, AND MACHINERY.

PURCHASES BY STATE AND LOCAL GOVERNMENTS ARE LARGER THAN THE FEDERAL GOVERNMENT.

IMPORTS ARE GREATER THAN EXPORTS, SO THE NET IS NEGATIVE.

MEASURING GDP BY THE VALUE-ADDED METHOD

THIS IS THE ADDITIONAL MARKET VALUE A FIRM GIVES TO A PRODUCT AND IS EQUAL TO THE DIFFERENCE BETWEEN THE PRICE FOR WHICH THE FIRM SELLS THE GOOD AND THE PRICE IT PAID OTHER FIRMS FOR THE INTERMEDIATE GOODS.

THE FINAL PRICE WILL EQUAL THE SUM OF THE VALUE ADDED BY EACH FIRM INVOLVED IN THE PRODUCTION OF THE PRODUCT.
(LL BEAN EXAMPLE, BOTTOM OF PAGE 619)

VALUE CHAIN

VALUE CHAIN

SHORTCOMINGS OF GDP AS A MEASURE OF TOTAL PRODUCTION

HOUSEHOLD PRODUCTION - THIS IS THE VALUE OF GOODS AND SERVICES THAT ARE NOT BOUGHT AND SOLD IN MARKETS.

THESE ARE GOODS AND SERVICES A HOMEMAKER PROVIDES TO THE HOMEMAKER'S FAMILY.

IF A PERSON HAS BEEN CARING FOR CHILDREN, CLEANING THE HOUSE, PREPARING MEALS, THE VALUE OF SUCH SERVICES IS NOT INCLUDED IN GDP.

THE UNDERGROUND ECONOMY - THESE ARE ILLEGAL GOODS AND SERVICES.

PEOPLE WHO PARTICIPATE ARE ALSO TRYING TO AVOID TAXES OR REGULATION.

ARE THESE SERIOUS SHORTCOMINGS?

USUALLY NO, BECAUSE GDP IS MOST OFTEN USED TO MEASURE CHANGES OVER A SHORT PERIOD OF TIME.

OVER A LONG TIME PERIOD THIS MAY BE MORE IMPORTANT.

SHORTCOMINGS IN MEASURING WELL-BEING

GDP IS ALSO USED AS A MEASURE OF WELL-BEING – HOW MUCH TUFF WE MAKE AND BUY.

REAL GDP PER CAPITA IS A MEASURE OF HOW MUCH EACH PERSON, ON AVERAGE, BENEFITS FROM OUR PRODUCTION OF GOODS AND SERVICE.

IT IS CALCULATED BY DIVIDING THE VALUE OF REAL GDP BY THE COUNTRY'S POPULATION.

THE VALUE OF LEISURE IS NOT INCLUDED IN GDP – HAS WELL-BEING INCREASED WITH A TIME OF LEISURE?

IF AMERICANS WORK 40 HOURS PER WEEK, ARE THEY BETTER OFF THAN WHEN THEY WORKED 60 HOURS PER WEEK?

GDP IS NOT ADJUSTED FOR POLLUTION OR OTHER NEGATIVE EFFECTS OF PRODUCTION

COUNTRIES WITH AN INCREASING GDP SPEND MORE MONEY ON POLLUTION REDUCTION.

FOR EXAMPLE, IN THE U.S. BETWEEN 1970 AND 2007, GDP STEADILY INCREASED AND EMISSIONS OF THE SIX MAIN POLLUTANTS DECLINED BY MORE THAN 50%.

CHINA IS NOW SPENDING MORE TIME ADDRESSING POLLUTION.

GDP IS NOT ADJUSTED FOR CHANGES IN CRIME OR OTHER SOCIAL PROBLEMS

DOES A REDUCTION IN CRIME LEAD TO BETTER WELL-BEING?

GDP CAN BE DECREASED BY LESS SPENDING ON POLICE, SECURITY GUARDS, AND ALARM SYSTEMS.

GDP MEASURES THE SIZE OF THE PIE, NOT HOW IT IS DIVIDED UP

THE BENEFITS OF PRODUCTION AND CONSUMPTION ARE NOT EVENLY DISTRIBUTED IN A POPULATION.

HAPPINESS?

IS CHINA INTO
BTC COINING
GET RICH
THEY GET IT

WIND, SOME HUSBAND

X

NOT

REAL GDP VERSUS NOMINAL GDP

THIS HELPS US MAKE COMPARISONS OVER TIME BY ADJUSTING FOR INFLATION.

THE BEA SEPARATES PRICE CHANGES FROM THE QUANTITY OF GOODS PRODUCED.

NOMINAL GDP IS CALCULATED BY SUMMING THE CURRENT VALUE OF FINAL GOODS AND SERVICES.

X REAL GDP IS CALCULATED BY DESIGNATING A PARTICULAR YEARS AS A BASE YEAR THEN USING THE PRICE OF GOODS AND SERVICES IN THE BASE YEAR TO CALCULATE THE VALUE OF GOODS AND SERVICES IN OTHER YEARS.

CURRENTLY THE BASE YEAR IS ~~2005~~ ²⁰⁰⁹ 2009.

OTHER MEASURES OF TOTAL PRODUCTION

GROSS NATIONAL PRODUCT – THE VALUE OF FINAL GOODS AND SERVICES PRODUCED BY CITIZENS OF THE U.S., EVEN IF PRODUCTION OCCURRED OUTSIDE THE U.S.

NET NATIONAL PRODUCT – GNP LESS THE DEPRECIATION OF FIX CAPITAL EQUIPMENT THAT WEARS OUT DURING PRODUCTION.

NATIONAL INCOME – WHEN CONSUMERS PAY SALES TAX, THERE IS A DIFFERENCE BETWEEN THE AMOUNT THEY PAY AND THE AMOUNT THE PRODUCERS RECEIVE. SO BEA CAN SUBTRACT THE VALUE OF SALES TAXES FROM THE NET NATIONAL PRODUCT. NATIONAL INCOME WILL ALWAYS BE SMALLER THAN GDP.

PERSONAL INCOME – INCOME RECEIVED BY HOUSEHOLDS. WE SUBTRACT THE EARNINGS THAT CORPORATIONS RETAIN (AND DON'T PAY OUT TO STOCKHOLDERS) THEN WE ADD THE PAYMENTS RECEIVED BY HOUSEHOLDS FROM GOVERNMENT IN THE FORM OF TRANSFER PAYMENTS AND INTEREST ON GOVERNMENT BONDS.

DISPOSABLE PERSONAL INCOME – PERSONAL INCOME MINUS PERSONAL TAX PAYMENTS SUCH AS FEDERAL INCOME TAXES.

MARKET BASKET

GNP

GNP - DEPRECIATION

NNP - SALES TAXES

HOUSEHOLD INCOME = RETAINED EARNINGS + TRANSFER PAYMENTS + INTEREST ON GOVERNMENT BONDS

DISPOSABLE INCOME



YOUR CITY? HOW'S THE ECONOMY DOING? YOUR CITY?
ECONOMICS 262 CHAPTER 20
HOW DO YOU KNOW? WHAT NUMBERS TELL US
AFFECTS OF GLOBALIZATION, TRADES, QUOTAS, ETC.
INDIANA LOSES MORE JOBS
IN DOWN ECONOMY'S
① RETIRING BABY
BOOMERS
② NOT GOING
150 MORE
③ Δ TECH

UNEMPLOYMENT AND INFLATION

THE HOUSEHOLD SURVEY

EACH MONTH THE BUREAU OF THE CENSUS CONDUCTS THE **CURRENT POPULATION SURVEY** OF 60,000 HOUSEHOLDS REPRESENTING THE U.S. POPULATION TO COLLECT DATA NEEDED TO COMPUTE THE UNEMPLOYMENT RATE.

THEY ASK ABOUT THE EMPLOYMENT STATUS OF EVERYONE IN THE HOUSEHOLD 16 YEARS OF AGE OR OLDER.

THE BUREAU OF LABOR STATISTICS USES THE DATA TO CALCULATE THE UNEMPLOYMENT RATE.

EMPLOYED – IF THEY WORKED DURING THE WEEK BEFORE THE SURVEY OR IF THEY WERE TEMPORARILY AWAY FROM THEIR JOB BECAUSE OF ILLNESS, VACATION, ON STRIKE, OR SOME OTHER REASON.

UNEMPLOYED IF THEY DID NOT WORK IN THE PREVIOUS WEEK BUT WERE AVAILABLE FOR WORK AND HAD ACTIVELY LOOKED FOR WORK DURING THE PREVIOUS FOUR WEEKS.

THE **LABOR FORCE** IS THE SUM OF THE EMPLOYED AND UNEMPLOYED.

THE **UNEMPLOYMENT RATE** IS THE PERCENTAGE OF THE LABOR FORCE THAT IS UNEMPLOYED.

PEOPLE WHO DO NOT HAVE A JOB AND ARE NOT ACTIVELY LOOKING FOR A JOB ARE CLASSIFIED AS **NOT IN THE LABOR FORCE**. (RETIRES, HOMEMAKERS, FULL-TIME STUDENTS, PEOPLE ON ACTIVE MILITARY SERVICE, IN PRISON, OR IN MENTAL HOSPITALS.)

DISCOURAGED WORKERS ARE AVAILABLE FOR WORK BUT HAVE NOT LOOKED FOR A JOB DURING THE PREVIOUS FOUR WEEKS BECAUSE THEY BELIEVE THERE ARE NO JOBS AVAILABLE FOR THEM.

UNEMPLOYMENT RATE = NUMBER OF UNEMPLOYED / LABOR FORCE x 100

LABOR PARTICIPATION RATE = LABOR FORCE / WORKING-AGE POP. x 100

PROBLEMS WITH MEASURING THE UNEMPLOYMENT RATE

ONE OF THE PROBLEMS IN A RECESSION IS DISTINGUISHING BETWEEN DISCOURAGED WORKERS AND UNEMPLOYED.

ALSO, THERE ARE PEOPLE WORKING PART-TIME IN ORDER TO EARN SOME MONEY EVEN THOUGH THEY WANT TO WORK FULL-TIME. THUS, THE UNEMPLOYMENT RATE CAN BE TOO LOW BECAUSE IT DOESN'T MEASURE THIS.

OTHERS ARE WORKING AT JOBS THEY DO NOT WANT OR LIKE BUT FEEL THEY HAVE TO DO SO.

SOMETIMES PEOPLE CLAIM THEY ARE LOOKING FOR WORK, WHEN THEY REALLY ARE NOT, AND THUS THE UNEMPLOYMENT RATE IS RAISED HIGHER THAN IT SHOULD BE.

SOME PEOPLE MIGHT BE EMPLOYED, BUT ARE ENGAGED IN ILLEGAL ACTIVITIES. FOR EXAMPLE, DRUG DEALING.

TRENDS IN LABOR FORCE PARTICIPATION

THIS MEASURES THE AMOUNT OF LABOR AVAILABLE TO THE ECONOMY. THE HIGHER THE PARTICIPATION RATE, THE MORE LABOR IS AVAILABLE.

ALSO, THE HIGHER THE COUNTRY'S GDP AND GDP PER PERSON WILL BE.

IN RECENT YEARS IT HAS BEEN DECLINING (1948 89% - 2006 76%) DUE TO RETIRING BABY BOOMER AND YOUNG PEOPLE STAYING IN SCHOOL LONGER.

THERE HAS ALSO BEEN A DECLINE IN YOUNG MALES WHO ARE NOT IN SCHOOL AND ARE TOO YOUNG TO RETIRE.

BUT THIS HAS BEEN MORE THAN OFFSET BY A SHARP INCREASE IN THE NUMBER OF ADULT WOMEN (32% - 61% IN THE SAME PERIOD.)

CHANGES IN SOCIAL ATTITUDES, EQUAL PAY LAWS, CIVIL RIGHTS ACT AGAINST DISCRIMINATION.

DIFFERENT GROUPS HAVE DIFFERENT UNEMPLOYMENT RATES.

GRAPH PAGE 665.

HOW LONG ARE PEOPLE USUALLY UNEMPLOYED?

THE LONGER PEOPLE ARE UNEMPLOYED, THE GREATER THE HARDSHIP. IN THE U.S. ECONOMY, THE TIME PERIOD IS RELATIVELY BRIEF.

PAGE 666 TOP OF PAGE

LESS THAN 5 WEEKS	35.6%
5 - 14 WEEKS	31.3%
15-26 WEEKS	15.7%
27 WEEKS +	17.5%



2 ENSTREAS
WITH AGE
INDIANA IS OVER
BRAN
DRAIN

THE TYPICAL PERSON WHO LOSES A JOB USUALLY FINDS ANOTHER OR IS RECALLED WITHIN A FEW MONTHS.

THE PROBLEM IS THAT WE HAVE A NEGATIVE SAVINGS RATE AND SOME PEOPLE OFTEN DON'T HAVE MONEY IN THE BANK TO LIVE ON.

THE ESTABLISHMENT SURVEY - ANOTHER MEASURE

SOMETIMES CALLED THE **PAYROLL SURVEY**, IT SURVEYS 300,000 BUSINESS ESTABLISHMENTS.

IT MEASURES THE NUMBER OF PEOPLE ON PAYROLLS.

BUT IT DOES NOT PROVIDE INFORMATION ON SELF-EMPLOYED PEOPLE.

SECOND, IT MAY NOT COUNT PEOPLE IN NEWLY OPENED BUSINESSES THAT ARE NOT ON THE SURVEY LISTS.

THIRD, IT GIVES NO INFORMATION ON UNEMPLOYMENT.

BUT IT DOES GIVE INFORMATION ON ACTUAL EMPLOYMENT RATHER THAN RELYING ON UNVERIFIED ANSWERS.

JOB CREATION AND JOB DESTRUCTION OVER TIME

THE U'S' ECONOMY CREATES AND DESTROYS JOBS ALL THE TIME.

IN 2005, ABOUT 31.4 MILLION WERE CREATED AND ABOUT 29.4 MILLION WERE DESTROYED.

THIS HAPPENS BECAUSE OF CHANGING TASTES, TECHNOLOGY CHANGES, THE SUCCESS AND FAILURE OF ENTREPRENEURS.

CAN GOV
CREATE
JOBS?
IT
THEY
CAN'T
WHY?
THEY?

THIS CHURN HELPS EXPLAIN WHY PEOPLE LOSING JOBS FIND ANOTHER ONE RELATIVELY QUICKLY.

THUS WHEN THE BLS ANNOUNCES JOBS CREATED IN THE ECONOMY, IT IS A NET NUMBERS.

FRICTIONAL UNEMPLOYMENT AND JOB SEARCH

THIS IS THE SHORT-TERM UNEMPLOYMENT THAT OCCURS FROM THE PROCESS OF MATCHING WORKERS WITH JOBS.

PEOPLE HAVE SPECIFIC SKILLS, EXPERIENCE, ETC. AND IT TAKES A PERIOD OF TIME TO FIND THE JOB THAT MATCHES.

IT ALSO TAKES TIME FOR AN EMPLOYER TO FIND A PERSON WHO MATCHES THEIR REQUIREMENTS.

SEASONAL UNEMPLOYMENT OCCURS, WEATHER, AND FLUCTUATION IN DEMAND FOR CERTAIN PRODUCTS.

FRICTIONAL UNEMPLOYMENT CANNOT BE ELIMINATED.

STRUCTURAL UNEMPLOYMENT

THIS ARISES FROM A PERSISTENT MISMATCH BETWEEN THE JOB SKILLS OF WORKERS AND THE REQUIREMENTS OF JOBS.

STRUCTURAL UNEMPLOYMENT CAN LAST FOR A LONG TIME PERIOD BECAUSE IT TAKES TIME FOR WORKERS TO LEARN NEW SKILLS.

CYCLICAL UNEMPLOYMENT

WHEN THE ECONOMY MOVES INTO RECESSION, MANY FIRMS FIND THEIR SALES FALLING AND THEY CUT BACK ON PRODUCTION AND THEY LAY OFF WORKERS.

FULL EMPLOYMENT

THE UNEMPLOYMENT RATE WILL NEVER BE ZERO. BECAUSE OF FRICTIONAL AND STRUCTURAL UNEMPLOYMENT, THERE WILL ALWAYS BE SOME PEOPLE WITHOUT JOBS THAT ARE LOOKING FOR WORK

BUT BELOW ABOUT 4-5%, IS WHERE ALL THAT IS LEFT IS STRUCTURAL AND FRICTIONAL UNEMPLOYMENT – PEOPLE WITH THE WRONG SKILLS OR TRYING TO FIND A MATCH – THE NATURAL RATE OF EMPLOYMENT. THE SUM OF FRICTIONAL AND STRUCTURAL UNEMPLOYMENT.

GOVERNMENT POLICIES

UNEMPLOYMENT INSURANCE AND OTHER PAYMENTS – PAID TO WORKERS WHO LOSE THEIR JOBS THROUGH NO FAULT OF THEIR OWN.

CAN BE ABOUT HALF OF NORMAL PAY, ALTHOUGH NOT THAT HIGH IN INDIANA. BASED ON SIZE OF FAMILY AND INCOME LEVELS.

YOU HAVE TO SHOW YOU ARE LOOKING FOR WORK. BENEFITS LAST ABOUT 6 MONTHS.

MINIMUM WAGE LAWS – THE IDEA IS TO PROVIDE A LIVING WAGE TO LOW INCOME WORKERS. IN 2009 IT ~~WILL~~ MOVE TO \$7.25 PER HOUR.

SOME MAINTAIN IT HURTS EMPLOYMENT BECAUSE IT IS ESTABLISHED AT A LEVEL ABOVE THE MARKET.

BUT FEW WORKERS RE REALLY AFFECTED.

LABOR UNIONS – TRY TO SET A WAGE ABOVE THE MARKET FOR MEMBERS. USUALLY DOESN'T AFFECT THE OVERALL UNEMPLOYMENT RATE BECAUSE ONLY ABOUT 9% OF ALL WORKERS ARE UNIONIZED.

EFFICIENCY WAGE – AN ABOVE THE MARKET WAGE TO MOTIVATE WORKERS TO BE MORE PRODUCTIVE.

INFLATION

THE PRICE LEVEL MEASURES THE PRICES OF GOODS AND SERVICES.

THE INFLATION RATE IS THE PERCENTAGE INCREASE IN THE PRICE LEVEL FROM YEAR TO YEAR.

IT HAS SEVERAL MEASURES, BUT THE MOST OFTEN USED IS THE **CONSUMER PRICE INDEX**.

CPI ESTABLISHED A MARKET BASKET OF 211 GOODS AND SERVICES PURCHASED BY TYPICAL URBAN FAMILIES OF FOUR.

THE CPI IS THE AVERAGE OF THE PRICES IN THE BASKET. A YEAR IS CHOSEN AS THE BASE YEAR AND SUBSEQUENT AVERAGE PRICES OF THOSE GOODS AND SERVICES ARE COMPARED WITH THE BASE YEAR

SOMETIMES CALLED THE COST-OF-LIVING INDEX.

↑ BENEFITS ATTRACT
FRictional UNEMPLOYED
RESERVES

DON'T EXTEND IT
DURING 2007-
RECESSION
CAUSES STATE
FUNDS TO BE
DEPLETED

WORKER'S COMP

POSITIVE (OUR INVESTMENTS) NEG - CONSUMABLE

YEAR YOU WANT TO
COMPARE WITH
NOW 2005

US INFLATION?
LIKELY WITHIN 6
EXCESS CAPACITY
UNEMPLOYMENT
5

IS IT ACCURATE?

SUBSTITUTION BIAS - THE BLS ASSUMES THAT PEOPLE BUY THE SAME MIX OF GOODS AND SERVICES IN THE MARKET BASKET BUT THAT IS UNLIKELY.

THUS THE PRICE OF THE BASKET OF GOODS THEY ACTUALLY BUY RISES LESS THAN THE WHOLE BASKET WOULD.

INCREASE IN QUALITY BIAS - THE GOODS AND SERVICES IN THE BASKET INCREASE IN QUALITY OVER TIME, BUT THE CPI DOES NOT INCLUDE THESE IMPROVEMENTS, AND MISSES THE INCREASE IN PRICE DUE TO THE IMPROVEMENTS.

THUS CPI UNDERSTATES THE INCREASED COSTS DUE TO IMPROVEMENTS.

NEW PRODUCT BIAS - THE BASKET IS UPDATED EVERY 10 YEARS, BUT NEW PRODUCTS ARE INTRODUCED AND BOUGHT BY CONSUMERS MORE FREQUENTLY THAN ONCE EVERY DECADE. THUS, THE BLS IS TRYING TO UPDATE THE BASKET EVERY TWO YEARS.

IF NEW PRODUCTS ARE NOT INCLUDED IN THE CPI, IT IS NOT ACCURATE.

OTHER BIASES - INCREASED USE OF DISCOUNT STORES MEANS THE CPI OVERSTATES THE INCREASE IN PRICES CONSUMERS SPEND.

PRODUCER PRICE INDEX

A MARKET BASKET OF GOODS AND SERVICES BOUGHT BY PRODUCERS OF GOODS AT EACH STEP IN THE PROCESS.

THIS IS AN EARLY INDICATOR OF WHAT WILL HAPPEN WITH THE CPI.

INFLATION AFFECTS THE DISTRIBUTION OF INCOME

SOME PEOPLE HAVE INCOMES THAT RISE FASTER THAN INFLATION, WHILE OTHER WAGES RISE MORE SLOWLY. THE EFFECT OF INFLATION IS DIFFERENT ON BOTH GROUPS AND INCREASES THE DIFFERENCES BETWEEN THE GROUPS.

R/E A HOUSE AS AN INVESTMENT?
PRICE ↑ DUE TO INFLATION.

COMMODITY PRICES - GOLD, PRECIOUS METALS
JEWELS (DIAMONDS - DE BEERS)

LOW LEVELS - DESIRABLE
ADDING \$ WHEN NO PROGRESSIVE CAPTION

WHY DO YOU SHOP?

PEOPLE SHOP TO FIND LOW PRICES
DISCOUNT STORES
ONLINE

MOST RECENT UPDATE 2000

COMMODITY PRICES

U.S. INFLATION EXCESS CHARGES INTEREST

HOUSE WAGES
FIND INC.

LONG-RUN GROWTH

MOST PEOPLE IN DEVELOPED ECONOMIES EXPECT THEIR LIVES TO IMPROVE OVER TIME.

IN 1900, WITH THE HIGHEST STANDARD OF LIVING IN THE WORLD, 3% OF AMERICAN HOMES HAD ELECTRICITY AND 15% HAD INDOOR FLUSH TOILETS. 5,000 OF THE 45,000 CHILDREN BORN IN CHICAGO DIED BEFORE THEIR FIRST BIRTHDAY. HOMES WERE HEATED BY BURNING COAL. WITH NO MODERN APPLIANCES, MOST WOMEN WORKED INSIDE THE HOME FOR 80 HOURS EACH WEEK, AND BAKED A HALF TON OF BREAD EACH YEAR.

THE MEASURE OF STANDARD OF LIVING IS REAL GDP PER PERSON OR REAL GDP PER CAPITA.

IN 1900, REAL GDP PER CAPITA WAS \$4,900; IN 2006 IT STOOD AT \$38,000, MEANING THE AVERAGE 2006 PERSON COULD PURCHASE EIGHT TIMES AS MANY GOODS AND SERVICES AS THE AVERAGE AMERICAN IN 1900.

THIS PROBABLY UNDERSTATES THE TRUE STANDARD OF LIVING SINCE MOST OF THE PRODUCTS AVAILABLE IN 2006 DIDN'T EXIST IN 1900.

THEN THERE IS THIS: ^{IS} ~~DOES~~ THE QUANTITY OF GOODS AND SERVICES A PERSON CAN BUY A MEASURE OF HOW HAPPY OR CONTENTED THAT PERSON MIGHT BE?

WHAT ABOUT POLLUTION, THE LEVEL OF CRIME, SPIRITUAL WELL-BEING, AND OTHER FACTORS NOT INCLUDED IN GDP?

ECONOMIST, HOWEVER, MUST RELY ON GDP AS THE BEST MEASURE WE HAVE TO COMPARE THE PERFORMANCE OF THE ECONOMY OVER TIME, OR THE PERFORMANCE OF DIFFERENT ECONOMIES IN OTHER NATIONS.

THE GROWTH RATE OF REAL GDP PER CAPITA DURING A PARTICULAR YEAR IS EQUAL TO THE PERCENTAGE CHANGE FROM THE PREVIOUS YEAR.

FOR LONGER TIME PERIODS WE USE THE AVERAGE ANNUAL GROWTH RATE OVER THE TIME PERIOD OF INTEREST. FOR EXAMPLE 2004-2006.

$$3.9\% + 3.2\% + 3.3\% / 3 = 3.5\%$$

MIGRATION FROM EAST COAST & SOUTH

WE CAN LOOK AT LONG-TERM GROWTH BY CALCULATING THE NUMBER OF YEARS IT WOULD TAKE TO DOUBLE.

IF REAL GDP PER CAPITA DOUBLES EVERY 20 YEARS, MOST PEOPLE WOULD EXPERIENCE SIGNIFICANT INCREASES IN THEIR STANDARD OF LIVING.

IF IT TAKES 100 YEARS TO DOUBLE, INCREASES IN THE STANDARD OF LIVING WOULD BE TOO SLOW TO NOTICE.

TO CALCULATE IT USE THE RULE OF 70.

$\text{NUMBER OF YEARS TO DOUBLE} = 70 / \text{GROWTH RATE}$

IF GDP IS GROWING AT 5% PER YEAR, IT WOULD TAKE $70/5 = 14$ YEARS TO DOUBLE.

IF IT IS GROWING AT 2% PER YEAR, IT WOULD TAKE 35 YEARS TO DOUBLE.

WHAT DETERMINES THE RATE OF LONG-TERM GROWTH?

1. **INCREASES IN CAPITAL PER HOURS WORKED.** THIS REFERS TO MANUFACTURED GOODS THAT ARE USED TO PRODUCE OTHER GOODS AND SERVICES (COMPUTERS, BUILDINGS, MACHINES, ETC.) HUMAN CAPITAL REFERS TO ACCUMULATED KNOWLEDGE AND SKILLS OF WORKERS. (WHAT ABOUT SOCIAL CAPITAL?)
2. **TECHNOLOGICAL CHANGE.** THIS REFERS TO THE PROCESSES USED TO TURN INPUT INTO OUTPUTS. IMPLEMENTING TECHNOLOGICAL CHANGE DEPENDS ON ENTREPRENEURS.
3. **GOVERNMENT SECURING RIGHTS TO PRIVATE PROPERTY.** THIS INCLUDES INTELLECTUAL PROPERTY. THIS MEANS AN INDEPENDENT LEGAL SYSTEM. THIS INCLUDES ENFORCEMENT OF CONTRACTS.

BEST EXPL-
IN REAST-
CITIZENSHIP
INCENTIVE
TABLE 60

POTENTIAL REAL GDP

FULL EMPLOYMENT LEVEL OF OUTPUT

THIS IS THE LEVEL OF GDP ATTAINED WHEN ALL FIRMS ARE PRODUCING AT CAPACITY.

THIS IS NOT THE MAXIMUM OUTPUT A PLANT IS CAPABLE OF PRODUCING, BUT RATHER WHAT IS PRODUCED WHEN WORKING NORMAL HOURS USING THE NORMAL WORKFORCE.

GROWTH IN POTENTIAL GDP IN THE U.S. IS ABOUT 3.5% PER YEAR.

IN OTHER WORDS, EACH YEAR, THE CAPACITY OF THE ECONOMY TO PRODUCE FINAL GOODS AND SERVICES EXPANDS BY 3.5%, AS THE ECONOMY MOVES THROUGH THE BUSINESS CYCLE.

SAVINGS, INVESTMENT, AND THE FINANCIAL SYSTEM

FIRMS EXPAND BY USING RETAINED EARNINGS OR GETTING MONEY FROM OUTSIDE THE COMPANY.

USUALLY, COMPANIES CANNOT FINANCE GROWTH FROM EARNINGS. THEY HAVE TO GO OUTSIDE.

RETAINED EARNINGS, BORROWING, PREFERRED STOCK, COMMON STOCK.

THIS MEANS STOCKS, BONDS, AND LOANS.

FINANCIAL MARKETS ARE THE SYSTEM OF BANKS, INSURANCE COMPANIES, BROKERAGE HOUSES, RATING SERVICES, ETC. WHERE COMPANIES GO TO GET MONEY FROM OUTSIDE.

THE FINANCIAL SYSTEM

THIS CHANNELS MONEY FROM SAVERS TO BORROWERS.

STOCKS – OWNERSHIP OF FIRMS.

BONDS – BORROWING (SHORT AND LONG-TERM)

FINANCIAL INTERMEDIARIES – BANKS, MUTUAL FUNDS, PENSION FUNDS, INSURANCE COMPANIES – ACT AS GO-BETWEENS FOR BORROWERS AND LENDERS.

INTERMEDIARIES PAY INTEREST TO ATTRACT MONEY FROM SAVERS, AND LEND IT OUT AT HIGHER INTEREST RATES TO MAKE MONEY AND PAY THE INTEREST TO SAVERS.

THE FINANCIAL SYSTEM ALSO PROVIDE THEE KEY SERVICES FOR SAVERS AND BORROWERS;

1. **RISK SHARING** – IT SPREADS THE RISK THAT THE VALUE OF A STOCK OR BOND WILL CHANGE IN SOME UNEXPECTED WAY OVER MANY PEOPLE AND GROUPS.
2. **LIQUIDITY** – THE ABILITY TO CHANGE A FINANCIAL INSTRUMENT FOR MONEY.
3. **INFORMATION** – FACTS AND INFORMATION ABOUT BORROWERS AND EXPECTATIONS ABOUT FUTURE RETURNS, SO THAT RISK CAN BE ASSESSED.

LENDING
TO LOTS
OF PEOPLE
IF ONE LOAN
Goes BAD...

THE MACROECONOMICS OF SAVINGS AND INVESTMENT

THE TOTAL VALUE OF SAVINGS MUST EQUAL THE TOTAL VALUE OF INVESTMENT.

GDP (Y), CONSUMPTION (C), INVESTMENT (I), GOVERNMENT PURCHASES (G), AND NET EXPORTS (NX)

$$Y = C + I + G + NX$$

IN AN OPEN ECONOMY THERE IS INTERACTION WITH OTHER ECONOMIES.

IN A CLOSE ECONOMY THEE IS NO INTERACTION WITH OTHERS.

FOR NOW WE'LL ASSUME A CLOSE ECONOMY TO MAKE IT EASIER TO EXAMINE. THUS, THERE IN NO NET EXPORTS (NX).

SO,

$$Y = C + I + G$$

← GOES TO US AS INCOME

OR

$$I = Y - C - G$$

PRIVATE SAVINGS IS WHAT HOUSEHOLDS RETAIN OF THEIR INCOME AFTER BUYING GOODS AND SERVICES (C) AND PAYING TAXES (T).

HOUSEHOLDS RECEIVE INCOME FOR SUPPLYING FACTORS OF PRODUCTION TO FIRMS WHICH IS EQUAL TO (Y)

HOUSEHOLDS ALSO RECEIVE **TRANSFER PAYMENTS (TR).**

SO

$$\text{PRIVATE SAVINGS} = Y + TR - C - T$$

← TAXES

PUBLIC SAVINGS IS THE TAX REVENUE GOVERNMENT RETAINS AFTER PAYING FOR GOVERNMENT PURCHASES (G), AND MAKING TRANSFER PAYMENTS (TR).

SO

$$\text{PUBLIC SAVINGS} = T - G - TR$$

$$\text{TOTAL SAVING} = \text{PUBLIC SAVINGS} + \text{PRIVATE SAVINGS}$$

$$S = (Y + TR - C - \bar{T}) + (\bar{T} - G - TR)$$

$$S = Y - C - G$$

THE RIGHT SIDE OF THE EQUATION IS THE EQUATION FOR INVESTMENTS.

$$\text{SO } S = I$$

WHEN GOVERNMENT SPENDS THE SAME AMOUNT IT SPENDS, IT HAS A **BALANCED BUDGET**.

WHEN IT SPENDS MORE THAN IT COLLECTS, IT HAS A **BUDGET DEFICIT**.
THIS IS A **DISSAVING**.

T IS LESS THAN G + TR.

WHEN IT HAS A BUDGET DEFICIT, IT HAS TO GET MONEY BY BORROWING BY SELLING TREASURY BONDS.

WHEN IT DOES THIS, IT DOES NOT ADD TO THE AMOUNT OF INVESTMENT AVAILABLE FOR INVESTMENT SPENDING, IT **SUBTRACTS FROM IT**.

WITH LESS SAVINGS, INVESTMENT MUST BE LOWER.

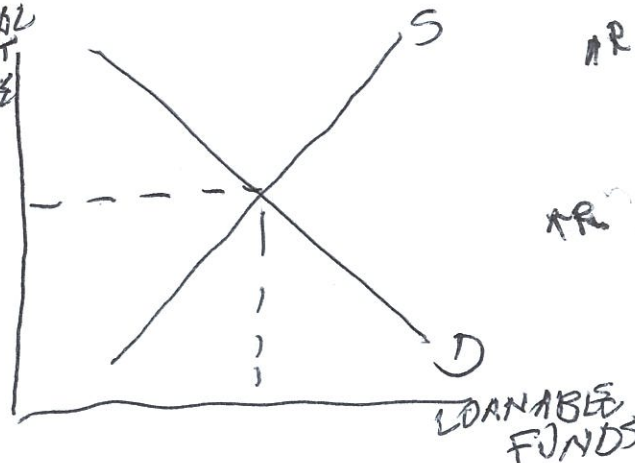
WHEN GOVERNMENT SPENDS LESS THAN IT TAKES IN, IT HAS A **BUDGET SURPLUS**, WHICH INCREASES PUBLIC SAVINGS, AND THE AMOUNT AVAILABLE FOR INVESTING INCREASING.

THE MARKET FOR LOANABLE FUNDS

THIS IS THE SUPPLY AND DEMAND - THE MARKET - FOR LOANABLE FUNDS WHICH DETERMINES THE MARKET INTEREST RATE AND THE QUANTITY OF LOANS AVAILABLE.

GRAPH ON PAGE 208

SUPPLY OF FUNDS IS SAVINGS



AR EX

DEMAND LA TECH

AR S

↓ SUPPLY WHEN GOV RUNS DEFICIT IN CLOSED ECONOMY

DEMAND IS DETERMINED BY THE WILLINGNESS OF FIRMS TO BORROW MONEY AND INVEST IN NEW PROJECTS.

THE SUPPLY OF LONABLE FUNDS IS DETERMINED BY THE WILLINGNESS OF HOUSEHOLDS TO SAVE AND BY THE EXTENT OF GOVERNMENT SAVINGS AND DISSAVINGS.

THE NOMINAL INTEREST RATE IS THE STATED RATE ON A LOAN.

THE BUSINESS CYCLE

DURING AN EXPANSION PHASE, PRODUCTION, EMPLOYMENT, AND INCOME ARE INCREASING.

THE EXPANSION ENDS WHEN THE BUSINESS CYCLE REACHES ITS PEAK.

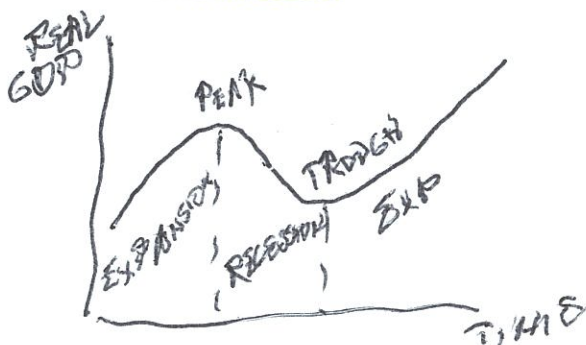
THEN A RECESSION PHASE BEGINS WHERE PRODUCTION, EMPLOYMENT, AND INCOMES DECLINE, UNTIL A RECESSION CYCLE TROUGH IS REACHED.

THE BEGINNINGS AND ENDINGS OF CYCLES ARE NOT EASY TO SEE OR PREDICT. THE LENGTH OF THE CYCLES ARE ALSO DIFFERENT IN LENGTH AND SEVERITY.

AS THE ECONOMY NEARS THE END OF AN EXPANSION, INTEREST RATES ARE USUALLY RISING AND WAGES OF WORKERS ARE USUALLY RISING FASTER THAN PRICES.

THIS MAKES PROFITS FALL FOR FIRMS, AND DEBT FOR BOTH FIRMS AND HOUSEHOLDS IS HIGH FROM BORROWING THAT IS NEEDED TO FUEL EXPANSION AND PURCHASES.

THUS FIRMS CUT BACK ON SPENDING ON CAPITAL GOODS (FACTORS OF PRODUCTION - MACHINES AND WORKERS) AND CONSUMERS SLOW SPENDING, WHICH MEANS FIRMS SELL FEWER PRODUCTS AND LAY OFF MORE PEOPLE.



CYCLES
HAVE
DIFF
LENGTHS

HARD TO KNOW
WHEN YEARS AT A
PEAK OR TROUGH

(A INVENTORY
HOW CO'S
JUDGE PRODE
SCHEDULES

WHY IS THE ECONOMY MORE STABLE THAN IT USED TO BE?

ECONOMIC CYCLES HAVE SHORTENED AND BEEN LESS SEVERE SINCE 1950 FOR SEVERAL REASONS:

- 1. INCREASING IMPORTANCE OF SERVICES AND DECLINING IMPORTANCE OF MANUFACTURING.**
- 2. UNEMPLOYMENT INSURANCE AND OTHER TRANSFER PAYMENTS THAT GIVE WORKERS SOME SPENDING POWER IN DOWN TIMES.**
- 3. ACTIVE GOVERNMENT PROGRAMS TO STABILIZE THE ECONOMY THROUGH THE FEDERAL RESERVE SYSTEM, FISCAL POLICY.**

LONG-TERM ECONOMIC GROWTH: SOURCES AND POLICIES

YOU LIVE IN WORLD DIFFERENT THAN YOUR GRANDPARENTS DID.

BUT IN MANY COUNTRIES, PEOPLE STILL LIVE IN A WORLD OF GRINDING POVERTY WITH BARELY THE NECESSITIES OF LIFE.

THE DIFFERENCE BETWEEN THE WORLD YOU KNOW AND THE WORLD THEY KNOW IS THAT THE COUNTRY WHERE YOU LIVE HAS EXPERIENCED SUBSTANTIAL ECONOMIC GROWTH OVER A LONG PERIOD OF TIME.

ECONOMIC GROWTH FROM 1,000,000 BC TO THE PRESENT

^{1,000,000}
IN 1 MILLION BC, OUR ANCESTORS LIVED AS HUNTERS AND GATHERERS.

GDP PER CAPITA WAS ABOUT \$123 PER YEAR IN 2006 DOLLARS – THE AMOUNT JUST BARELY ENOUGH TO SUSTAIN LIFE.

BY 1300 A.D. GDP PER CAPITA WAS STILL ABOUT \$123 PER YEAR.

IN OTHER WORDS, THERE HAD BEEN NO SUBSTANTIAL ECONOMIC GROWTH FOR OVER 1 MILLION YEARS, EVEN ACCOUNTING FOR THE FACT THAT HUMANS DID NOT EMERGE UNTIL ABOUT 100,000 YEARS AGO.

FEW PEOPLE LIVED BEYOND THE AGE OF 40 DURING JUST ABOUT ALL OF OUR TIME ON EARTH.

SIGNIFICANT ECONOMIC GROWTH DID NOT OCCUR UNTIL THE INVENTION OF THE STEAM ENGINE AND THE START OF THE **INDUSTRIAL REVOLUTION** IN ABOUT 1750.

IT STARTED FIRST IN ENGLAND, THEN SPREAD TO OTHER COUNTRIES INCLUDING THE U.S., FRANCE, AND GERMANY, AND GDP GROWTH BECAME SUSTAINED AND THE STANDARDS OF LIVING IN THESE COUNTRIES ROSE TO THE HIGH LEVELS OF TODAY.

MUCH OF THE GROWTH OCCURRED AFTER THE **GLORIOUS REVOLUTION** OF 1688 IN ENGLAND WHEN THE BRITISH PARLIAMENT – RATHER THAN THE KING – CONTROLLED GOVERNMENT.

AT THE SAME TIME, THE COURT SYSTEM BECAME INDEPENDENT OF THE KING, AND PROPERTY RIGHTS BECAME SECURE FROM BEING TAKEN BY THE GOVERNMENT – OR OTHERS WITH GOVERNMENT BACKING – AND THEREBY PROTECTING WEALTH AND STOPPED ARBITRARY TAXATION.

THIS MADE IT POSSIBLE FOR ENTREPRENEURS TO DEVELOP BUSINESSES AND TECHNOLOGY AND INVEST IN MANY NEW INVENTIONS SUCH AS THE SPINNING JENNY AND WATER FRAME (FOR PRODUCING TEXTILES) AND OF COURSE, THE STEAM ENGINE (USED IN MINING AND MANUFACTURING TEXTILES AND OTHER PRODUCTS).

OVER THE NEXT 500 YEARS, FROM 1300 TO 1800, THERE WAS SLOW GROWTH (0.2% PER YEAR), BUT IT WAS SUSTAINED.

SMALL DIFFERENCES IN GROWTH ARE IMPORTANT

AS WE SAW WITH THE **RULE OF 70**, SMALL DIFFERENCES IN GROWTH RATES CAN MAKE A BIG DIFFERENCE DUE TO **COMPOUNDING**.

IN THE LONG-RUN, GROWTH RATES MATTER BECAUSE AN ECONOMY THAT GROWS TOO SLOWLY FAILS TO RAISE LIVING STANDARDS AND LIFT PEOPLE OUT OF POVERTY.

IN HIGH INCOME COUNTRIES, ONLY 4 OUT OF EVERY 1,000 BABIES DIE BEFORE THE AGE OF ONE. IN THE POOREST COUNTRIES, IT IS 100 / 1,000.

THE RICH GET RICHER AND THE POOR GET POORER

ECONOMIES CAN BE DIVIDED INTO **HIGH-INCOME COUNTRIES**, SOMETIMES CALLED INDUSTRIAL **OR DEVELOPED ECONOMIES**.

OTHERS ARE EXPERIENCING **HIGH RATES OF GROWTH**, BUT ARE COMING OUT OF **POVERTY** AND ARE CALLED **DEVELOPING COUNTRIES**.

WHAT DETERMINES HOW FAST COUNTRIES GROW?

AN **ECONOMIC GROWTH MODEL** HELPS EXPLAIN ECONOMIC GROWTH IN GDP OVER THE LONG-TERM.

AS WE SAW IN THE LAST CHAPTER, TWO OF THE MAIN DETERMINANTS OF GROWTH ARE THE QUANTITY OF CAPITAL PER HOUR WORKED AND CHANGES IN TECHNOLOGY. BOTH ARE RELATED TO TECHNOLOGY.

WHAT ARE THE THREE MAIN SOURCES OF TECHNOLOGICAL CHANGE?

BETTER MACHINERY AND EQUIPMENT – FROM THE STEAM ENGINE TO COMPUTERS, ROBOTS, MACHINING TECHNOLOGY, ETC., BETTER MACHINES PRODUCE MORE OUTPUT.

INCREASES IN HUMAN CAPITAL – THIS IS THE ACCUMULATED KNOWLEDGE AND SKILLS THAT WORKERS ACQUIRE FROM EDUCATION, TRAINING, AND LIFE EXPERIENCES.

BETTER MEANS OF ORGANIZING AND MANAGING PRODUCTION – THESE ARE THING LIKE INVENTORY CONTROL, VALUE CHAIN MANAGEMENT, FACTORY LAYOUT DESIGNS, ETC.

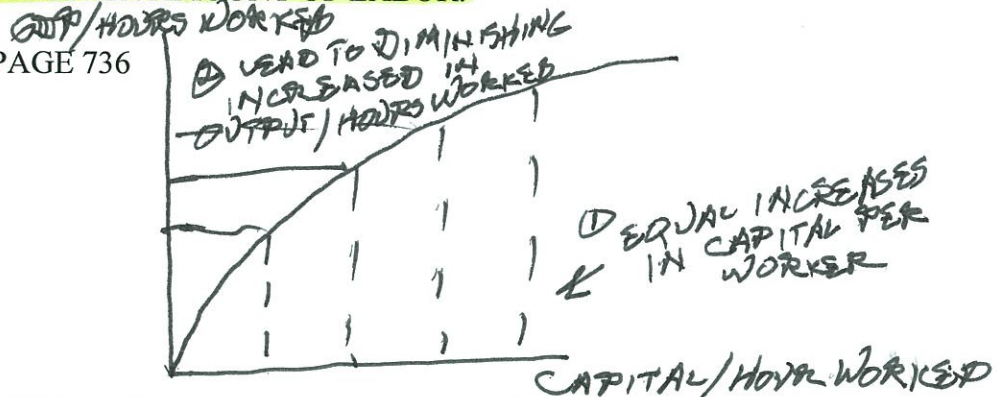
TECHNOLOGICAL CHANGE IS NOT THE SAME THING AS MORE PHYSICAL CAPITAL. SIMPLY ADDING MORE MACHINES IS NOT TECHNOLOGY CHANGE.

PER-WORKER PRODUCTION FUNCTION

THIS IS THE RELATIONSHIP BETWEEN REAL GDP PER HOUR WORKED AND CAPITAL PER HOUR WORKED – HOLDING THE LEVEL OF TECHNOLOGY CONSTANT.

THIS UNDERLIES THE ABILITY OF AN ECONOMY TO PRODUCE MORE GOODS WITH A GIVEN AMOUNT OF LABOR.

FIGURE 22-3 PAGE 736



INCREASES IN CAPITAL PER HOUR WORKED INCREASE OUTPUT PER HOUR WORKED BUT AT A DIMINISHING RATE.

THIS IS THE LAW OF DIMINISHING RETURNS – AS WE ADD MORE OF ONE INPUT (CAPITAL) TO A FIXED QUANTITY OF ANOTHER INPUT (LABOR) – OUTPUT INCREASES BY SMALLER ADDITIONAL AMOUNTS.

WHICH IS MORE IMPORTANT: CAPITAL OR TECHNOLOGY CHANGE?

TECHNOLOGY HELPS AVOID DIMINISHING RETURNS TO CAPITAL. THIS INCLUDES REORGANIZING HOW PRODUCTION TAKES PLACE SO AS TO INCREASE OUTPUT.

TECHNOLOGY CHANGE IS THE KEY TO SUSTAINING ECONOMIC GROWTH

TECHNOLOGY CHANGE SHIFTS THE PER-WORKER PRODUCTION FUNCTION UPWARD AND ALLOWS THE ECONOMY TO PRODUCE MORE REAL GDP PER HOUR WORKED WITH THE SAME QUANTITY OF CAPITAL PER HOUR WORKED.

SA COUNTRY WILL EXPERIENCE INCREASES IN ITS STANDARD OF LIVING ONLY IF IT EXPERIENCES INCREASES IN REAL GDP PER HOURS WORKED.

THEREFORE, IN THE LONG-RUN, A COUNTRY WILL EXPERIENCE AN INCREASING STANDARD OF LIVING ONLY IF IT EXPERIENCES CONTINUED TECHNOLOGICAL CHANGE.

NEW GROWTH THEORY

STANFORD ECONOMIST PAUL ROMER SAYS THAT THE DRIVING FORCE FOR ECONOMIC GROWTH IS **KNOWLEDGE CAPITAL** ESPECIALLY AT THE LEVEL OF THE FIRM.

HIS SAYS THAT ONCE KNOWLEDGE IS DISCOVERED, IT IS AVAILABLE TO EVERYONE.

PHYSICAL CAPITAL – MACHINES, COMPUTERS – IS RIVAL SINCE IF ONE FIRM USES IT, OTHER CAN'T AND IT CAN EXPAND COMPARED TO OTHERS.

BUT KNOWLEDGE THAT IS AVAILABLE TO EVERYONE MEANS THE WHOLE SYSTEM GROWS.

A CHEMICAL FORMULA OR CURE FOR DISEASE.

IT IS **NON-RIVAL AND NON-EXCLUDABLE**.

GOVERNMENT CAN HELP INCREASE KNOWLEDGE CAPITAL IN THREE WAYS:

1. **PROTECTING INTELLECTUAL PROPERTY WITH PATENTS AND COPYRIGHTS.**
2. **SUBSIDIZING RESEARCH AND DEVELOPMENT – AND DOING IT ITSELF.**
3. **SUBSIDIZING EDUCATION. SKILLS, ACADEMIC.**

JOSEPH SCHUMPETER AND CREATIVE DESTRUCTION

NEW PRODUCTS UNLEASH A "WAVE OF CREATIVE DESTRUCTION" IN WHICH OLDER PRODUCTS ARE DRIVEN OUT OF THE MARKET.

HE SAID THE KEY TO RISING STANDARDS OF LIVING IS NOT SMALL CHANGES TO EXISTING PRODUCTS BUT RATHER NEW PRODUCTS THAT MEET CONSUMER WANTS AND NEEDS IN QUALITATIVELY BETTER WAYS.

SO ENTREPRENEURS ARE CENTRAL TO ECONOMIC GROWTH - "THOSE WHO REVOLUTIONIZE THE PATTERN OF PRODUCTION BY EXPLOITING INVENTION OR UNTRIED TECHNOLOGY."

MEANS
MONEY - VENTURE CAPITAL
ATTRIBUTES ABOUT CHANGE

INDIANA'S
PERSONALITY
OF ENTREPRENEUR

ECONOMIC GROWTH IN THE UNITED STATES

THE ECONOMY OF THE U.S. HAS HAD ITS UPS AND DOWNS. WHAT HAS BEEN THE REASONS?

MEASUREMENT PROBLEMS - NEW PRODUCTS OCCUR WITH MORE SPEED, AND SOME DISAPPEAR OR BECOME LESS OF A MIX IN THE MARKET BASKET.

OILS PRICES - THEY AFFECT THE PRICE MOST EVERYTHING ELSE BECAUSE THEY ARE USED IN THE PRODUCTS, THE OPERATION OF THE PRODUCTS, OR ~~THE~~ IN THE COST OF MANUFACTURING THE PRODUCT.

QUALITY OF LABOR - THIS RELATED TO THE EDUCATIONAL SYSTEM, ESPECIALLY COMPARED TO OTHER PARTS OF THE WORLD. NEW INNOVATION DOESN'T HAPPEN BY TEACHING OLDER INFORMATION IN OLDER WAYS.

2 SUBS TO
EDUCATION
SYSTEM

PRODUCTIVITY - THIS COULD BE BECAUSE WE ARE CHANGING FROM A MANUFACTURING ECONOMY TO A SERVICE ECONOMY.

NOT JUST A IN
HIG TECH BUT
D SVC - MFG
STAYS DON'T
TRANSFER TO SV
WELL

PRODUCTIVITY BOOM: ARE WE IN A "NEW ECONOMY."

THIS ECONOMY IS BASED ON INFORMATION TECHNOLOGY, COMPUTERS, THE INTERNET (FASTER DATA PROCESSING, SPEED OF COMMUNICATION WORLDWIDE, CELL PHONES, LAPTOPS, WIRELESS INTERNET CONNECTIONS FOR ACCESS ANYWHERE.)

INDIANA
INCREASED

WHY HAS PRODUCTIVITY BEEN FASTER IN THE U.S. THAN IN OTHER COUNTRIES?

THERE SEEMS TO BE TWO REASONS:

1. **THE GREATER FLEXIBILITY OF THE U.S. LABOR MARKET.** LABOR CAN BE TRAINED, MOVED FROM ONE SKILL TO ANOTHER, ESPECIALLY AS TECHNOLOGY CHANGES, AND HIRED WHEN BUSINESS IS GOOD AND FIRED FOR COMPETENCY AND BECAUSE BUSINESS IS BAD.
2. **THE GREATER EFFICIENCY OF THE U.S. FINANCIAL SYSTEM.** THIS RELATES TO THE AVAILABILITY OF MONEY TO INVEST IN NEW IDEA AND MARKETS TO WHICH ENTREPRENEURS AND COMPANIES CAN GO TO GET AT IT.

FRANCE - HARD
TO FIRE
WORKERS

WHY ISN'T THE WHOLE WORLD RICH?

1. **FAILURE TO ENFORCE THE RULE OF LAW.**
2. **WARS AND EVOLUTIONS**
3. **POOR PUBLIC EDUCATION AND HEALTH**
4. **LOW RATES OF SAVING AND INVESTMENT.**

- LAWS THAT GIVE PROP. RIGHTS
+ INCENTIVES TO INNOVATE

OR ABILITY TO MOVE IT OVER
INFRAST. / POLITICAL STABILITY

BENEFITS OF GLOBALIZATION

ONE WAY TO BREAK OUT OF LOW GROWTH RATES IS **FOREIGN DIRECT INVESTMENT.**

BUT MANY POOR COUNTRIES HAVE HIGH TARIFFS ON IMPORTS AND DISCOURAGE INVESTMENT FROM THE OUTSIDE.

GLOBALIZATION IS THE TREND TO LOW TARIFFS AND ENCOURAGING INVESTMENT.

WHAT NEEDS TO HAPPEN

1. **ENHANCE PROPERTY RIGHTS**
2. **IMPROVE HEALTH AND EDUCATION**
3. **POLICIES WITH RESPECT TO TECHNOLOGY (FOREIGN DIRECT INVESTMENT, SUBSIDIZING R&D)**
4. **POLICIES TO INCREASE SAVINGS AND INVESTMENT (TAX INCENTIVES)**

IS GROWTH GOOD OR BAD?

HIGH-INCOME COUNTRIES HAVE MANY PROBLEMS – POLLUTION, DEPLETION OF NATURAL RESOURCES (OIL), GLOBAL WARMING, CULTURAL CHANGES, MORAL STANDARD, HAPPINESS, ETC.

DOES ANYONE RUN OUR ECONOMY?

ECONOMICS 262 CHAPTER 23

THE AGGREGATE EXPENDITURE MODEL

THIS FOCUSES ON THE SHORT-RUN RELATIONSHIP BETWEEN TOTAL SPENDING AND GDP.

THE IDEA IS THAT IN ANY PARTICULAR YEAR, THE LEVEL OF GDP IS DETERMINED MAINLY BY THE LEVEL OF AGGREGATE EXPENDITURE.

THERE ARE FOUR MAIN COMPONENTS OF AGGREGATE EXPENDITURES:

1. CONSUMPTION (C)
2. ~~PLANNED INVESTMENT (I)~~
3. GOVERNMENT SPENDING (G)
4. NET EXPORTS (NX)

SO: $AE = C + I + G + NX$

THE DIFFERENCE BETWEEN PLANNED AND ACTUAL INVESTMENT

GOODS PRODUCED BUT NOT SOLD ARE INVENTORIES.

CHANGES IN INVENTORIES ARE INCLUDED AS PART OF INVESTMENT SPENDING ALONG WITH SPENDING ON MACHINERY, BUILDINGS, ETC.

WE ASSUME THAT SPENDING ON BUILDINGS AND MACHINERY ARE PLANNED.

BUT THE AMOUNT BUSINESSES PLAN TO SPEND ON INVENTORIES MAY BE DIFFERENT THAN THE AMOUNT THEY ACTUALLY SPEND.

SPENDING ON INVENTORIES DEPEND ON SALES, WHICH FIRMS TRY TO FORECAST BUT AREN'T ALWAYS ACCURATE.

SO, ACTUAL SPENDING ON INVENTORIES WILL BE GREATER THAN PLANNED INVESTMENT IN INVENTORIES WHEN THERE IS AN UNPLANNED INCREASE IN INVENTORIES - WHEN SALES ARE LESS THAN PROJECTED.

THUS ACTUAL INVESTMENT WILL EQUAL PLANNED INVESTMENT ONLY WHEN THERE IS NO UNPLANNED CHANGE IN INVENTORIES.

MACROECONOMIC EQUILIBRIUM

THIS OCCURS WHEN SUPPLY EQUALS DEMAND.

FOR THE TOTAL ECONOMY, EQUILIBRIUM OCCURS WHERE TOTAL SPENDING - AGGREGATE EXPENDITURES - EQUALS TOTAL PRODUCTION, OR GDP.

SO $\text{AGGREGATE EXPENDITURE} = \text{GDP}$ AT EQUILIBRIUM

IF THE ECONOMY IS NOT GROWING, THEN EQUILIBRIUM GDP WILL NOT CHANGE UNLESS AGGREGATE EXPENDITURE CHANGES.

WHEN AE IS GREATER THAN GDP, THE TOTAL AMOUNT OF SPENDING IN THE ECONOMY IS GREATER THAN THE TOTAL AMOUNT OF PRODUCTION AND INVENTORIES DECLINE, AND GDP AND EMPLOYMENT WILL INCREASE AS COMPANIES HIRE PEOPLE TO PRODUCE MORE GOODS.

WHEN AE IS LESS THAN GDP, INVENTORIES INCREASE AND EMPLOYMENT AND GDP DECLINE.

DETERMINING THE LEVEL OF AE IN THE ECONOMY

CONSUMPTION IS THE LARGEST PART OF AE.

THE FIVE MOST IMPORTANT VARIABLES THAT DETERMINE THE LEVEL OF CONSUMPTION ARE:

1. CURRENT DISPOSABLE INCOME - INCOME AFTER TAXES AND TRANSFER PAYMENTS.
2. HOUSEHOLD WEALTH - NET WORTH
3. EXPECTED FUTURE INCOME
4. THE PRICE LEVEL
5. THE INTEREST RATE

CONSUMPTION INCREASES WITH INCREASES IN DISPOSABLE INCOME

WEALTH - CONSUMPTION INCREASES AS WEALTH INCREASES SINCE PEOPLE WITH MORE NET WORTH ARE LESS CONCERNED WITH SAVING.

EXPECTED FUTURE INCOME - CURRENT INCOME EXPLAINS CURRENT CONSUMPTION, BUT ONLY WHEN CURRENT INCOME IS NOT UNUSUALLY HIGH OR LOW COMPARED WITH EXPECTED FUTURE INCOME. REAL ESTATE BROKERS SPEND THE SAME YEAR TO YEAR EVEN IF INCOME FLUCTUATES.

How do you want to live? - why do you buy what you buy?

LIFE CYCLE THEORY

LIFE CYCLE THEORY - LIVING AT A CERTAIN LEVEL

FOR EXAMPLE

THE PRICE LEVEL – AS THE PRICE LEVEL INCREASES, THE REAL VALUE OF YOUR WEALTH DECLINES, AND SO WILL YOUR CONSUMPTION.

THE INTEREST RATE – WHEN INTEREST RATES INCREASE, THE REWARD FOR SAVING INCREASES AND HOUSEHOLDS ARE MORE LIKELY TO SAVE AND SPEND LESS.

THE CONSUMPTION FUNCTION

THIS IS THE RELATIONSHIP BETWEEN CONSUMPTION AND DISPOSABLE INCOME.

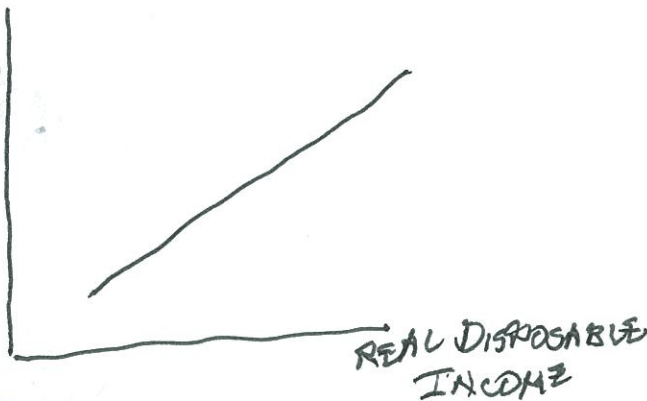
CONSUMPTION IS A FUNCTION OF DISPOSABLE INCOME.

THE SLOPE OF THE CONSUMPTION FUNCTION IS THE CHANGE IN CONSUMPTION DIVIDED BY THE CHANGE IN DISPOSABLE INCOME.

IT IS THE MARGINAL PROPENSITY TO CONSUME.

GRAPH PAGE 774

REAL
CONSUMPTION
SPENDING



MPC = CHANGE IN CONSUMPTION / CHANGE IN DISPOSABLE INCOME

IF IT IS 0.90, MPC TELLS US THAT HOUSEHOLDS SPEND 90% OF THE INCREASE IN HOUSEHOLD INCOME.

YOU CAN ALSO DETERMINE HOW MUCH CONSUMPTION WILL CHANGE AS INCOME CHANGES:

CHANGE IN CONSUMPTION = CHANGE IN DISPOSABLE INCOME $\times$ MPC

$$MPC + MPS = 1$$

TAX REBATES?

WHY THIS IS IMPORTANT FOR THE ECONOMY

THE RELATIONSHIP BETWEEN CONSUMPTION AND NATIONAL INCOME

THE DIFFERENCE BETWEEN GDP AND NATIONAL INCOME IS SMALL AND GENERALLY IGNORED. IT IS GENERALLY DISPOSABLE INCOME INCLUDING TAXES.

DISPOSABLE INCOME = NATIONAL INCOME - NET TAXES.

REARRANGING IT WE GET:

NATIONAL INCOME = GDP = DISPOSABLE INCOME + NET TAXES

NATIONAL INCOME AND DISPOSABLE INCOME DIFFER BY A CONSTANT AMOUNT EQUAL TO THE TAXES.

AS INCOME RISES, SO DO TAXES.

AS INCOMES FALL, TRANSFER PAYMENTS INCREASE (EMPLOYMENT COMP.)

INCOME, CONSUMPTION, AND SAVINGS

HOUSEHOLDS EITHER SPEND THEIR MONEY OR SAVE IT.

SO FOR THE ECONOMY AS A WHOLE:

NATIONAL INCOME = CONSUMPTION + SAVINGS + TAXES

$$Y = C + S + T$$

SO CHANGES IN C, S, AND T MEAN Y CHANGES.

IF TAXES ARE CONSTANT THEN CHANGES IN $Y = \text{CHANGE } C + \text{CHANGE } S$

THE MARGINAL PROPENSITY TO SAVE (MPS) IS THE AMOUNT BY WHICH SAVINGS INCREASES WHEN DISPOSABLE INCOME INCREASES

MPS = CHANGE IN S / CHANGE IN DISPOSABLE INCOME

$$1 = MPC + MPS$$

YOU PAY TAXES AS PART OF THE PRICES YOU PAY SO IS THAT PRICE = VALUE OF GDP
IF YOU ADD TAXES BACK INTO DISPOSABLE INC

- DISPOSABLE INC

WHICH HAS TO DO WITH MPC

$$\Delta Y = \Delta C + \Delta S$$

PLANNED INVESTMENT

THE FOUR MOST IMPORTANT FACTORS IN DETERMINING THE LEVEL OF PLANNED INVESTMENT ARE:

1. EXPECTATIONS OF FUTURE PROFITABILITY
2. THE INTEREST RATE
3. TAXES
4. CASH FLOW

FUTURE PROFITABILITY – OPTIMISM OR PESSIMISM IS AN IMPORTANT DETERMINANT OF PLANNED INVESTMENT.

INTEREST RATE – MOST PLANNED INVESTMENT (MACHINES, BUILDINGS) ARE FINANCED. HIGHER INTEREST RATES MEAN LESS PLANNED INVESTMENT.

TAXES – REDUCTIONS IN INCOME TAXES INCREASES INVESTMENT
INCREASES IN TAX INCENTIVES INCREASES INVESTMENTS

CASH FLOW – DURING RECESSION, PROFITS OFTEN DECREASE, DECREASING CASH FLOW AND THUS LOWER THE DESIRE TO BORROW FOR BUILDINGS AND MACHINERY.

NET EXPORTS – THE THREE MAIN VARIABLES ARE:

1. THE PRICE LEVEL IN THE U.S. RELATIVE THE PRICE LEVEL IN OTHER COUNTRIES.
2. THE GROWTH RATE OF GDP IN THE U.S. RELATIVE TO OTHERS.
3. THE EXCHANGE RATE

IF INFLATION IS LOWER IN THE U.S., EXPORTS INCREASE AND IMPORTS DECREASE. *PRICES OF PRODUCTS WILL BE LOWER IN U.S.*

AS GDP RISES, SO DOES INCOME, AND THUS MORE PURCHASES, INCLUDING IMPORTS.

AS THE VALUE OF THE DOLLAR RISES, THE FOREIGN CURRENCY PRICE OF DOLLARS RISES, AND EXPORTS DECREASE. (OTHERS HAVE TO PAY MORE FOR OUR PRODUCTS IF THEIR CURRENCY IS WEAKER – TAKES MORE YEN TO BUY A DOLLAR.)

THE MULTIPLIER EFFECT

AS MONEY IS INVESTED IN MACHINE AND FACTORIES, AND JOBS INCREASE, THOSE RECEIVING THE MONEY SPEND IT IN STORES.

THOSE RECEIVING THE INCOME IN STORES SPEND IT AGAIN.

THIS KEEPS HAPPENING ROUND AFTER ROUND.

THE MULTIPLIERS DIFFERENT FOR DIFFERENT INDUSTRIES, SIZE OF LOCAL ECONOMIES, AND INCOME LEVELS BETWEEN 2 AND 4.

ANTON: ~~BLINDNESS~~ - BELIEVING/KNOWING WHAT IS NOT TRUE

LOCAL CITIES & STATES ALWAYS
COMPETING WITH EACH OTHER FOR NEW JOBS
~~AND OTHER~~ TO KEEP EXISTING JOBS
WE COMPETE WITH OTHER COUNTRIES, TOO.

EDUC
INFRA
CITIES
INCENTIVES
STABLE, REG.

COUNTRY RISK - POLITICAL & LEGAL Δ's
Δ's IN TAXES, REG's, ENVIRONMENT,
LAWS OSHA, MISMANAGEMENT OF ECON
THAT CAUSES RECESSION, INFLATION,

LEGAL - RULE OF LAW - STATE DECIS/DISTINGUISH
Δ's IN COMMERCIAL LAWS - TRADE,
LABELING, ~~TAXES, REG'S, TOOLS~~

STABILITY - CO'S WANT PREDICTABILITY

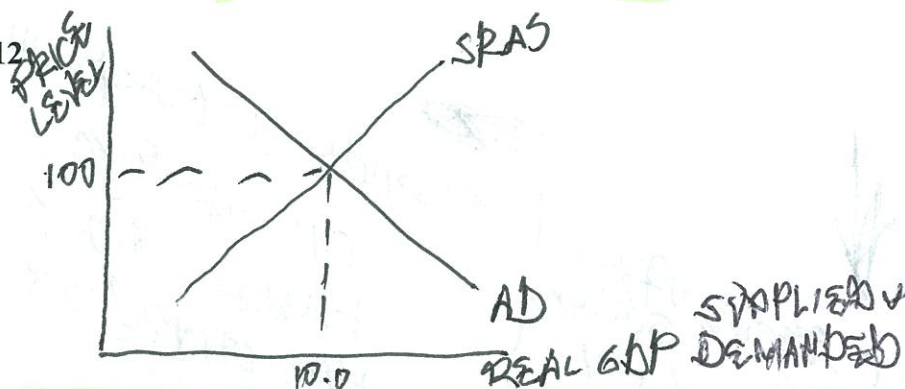
AGGREGATE DEMAND

FLUCTUATIONS IN GDP LEAD TO FLUCTUATIONS IN EMPLOYMENT.

THESE FLUCTUATIONS ARE THE MOST VISIBLE PART OF THE BUSINESS CYCLE.

WHY DO GDP, EMPLOYMENT AND INFLATION FLUCTUATE?

GRAPH PAGE 812



THE REAL GDP AND PRICE LEVEL ARE DETERMINED BY THE INTERSECTION OF AGGREGATE DEMAND AND AGGREGATE SUPPLY IN THE SHORT-RUN.

THE AGGREGATE DEMAND CURVE SHOWS ^{THE} ~~THAT~~ RELATIONSHIPS BETWEEN THE PRICE LEVEL AND THE QUANTITY OF REAL GDP DEMANDED BY HOUSEHOLDS, FIRMS, AND GOVERNMENT.

THE SHORT-RUN AGGREGATE SUPPLY CURVE SHOWS THE RELATIONSHIP BETWEEN THE PRICE LEVEL AND THE QUANTITY OF REAL GDP SUPPLIED BY FIRMS.

THESE ARE DIFFERENT THAN THE REGULAR SUPPLY AND DEMAND CURVES IN MICROECONOMICS – FOR FIRMS.

WHY DOES THE AGGREGATE DEMAND CURVE SLOP DOWNWARD?

RECALL

$$Y = C + I + G + NX$$

IT SLOPES DOWNWARD SINCE A FALL IN THE PRICE LEVEL INCREASES THE QUANTITY OF REAL GDP DEMANDED – PEOPLE BUY AND INVEST IN MORE STUFF.

↓ PRICE LEVEL
↑ DEMAND

WE ASSUME THE GOVERNMENT SPENDING DOES NOT FOLLOW THE SAME PATTERN SINCE IT IS DETERMINED BY LEGISLATIVE ACTION AND NOT THE MARKET.

THE WEALTH EFFECT: PRICE CHANGES AFFECT CONSUMPTION

INFLATION MAKES IT DIFFERENT.

WHEN PRICES RISE, THE REAL VALUE OF HOUSEHOLD WEALTH FALLS, AND SO WILL CONSUMPTION.

INTEREST RATE EFFECT: CHANGES IN PRICE LEVEL AFFECT INVESTMENT.

RISES IN INTEREST RATES INCREASE SAVINGS AND DECREASE BORROWING.

THUS, CONSUMPTION FALLS.

INTERNATIONAL TRADE EFFECT: PRICE LEVELS AFFECT NET EXPORTS

IF PRICE LEVELS IN THE U.S. RISE COMPARED TO OTHER COUNTRIES, WE BUY MORE GOODS FROM OTHER COUNTRIES AND IMPORTS RISE, MAKING THE NX PORTION OF THE EQUATION GO MORE NEGATIVE.

SHIFTS IN THE AGGREGATE DEMAND CURVE VERSUS MOVEMENTS ALONG IT

IT TELLS US THE RELATIONSHIP BETWEEN PRICE LEVEL AND THE QUANTITY OF REAL GDP – HOLDING EVERYTHING ELSE EQUAL.

IF ANY VARIABLE OTHER THAN THE PRICE LEVEL CHANGES, THE AGGREGATE DEMAND CURVE WILL SHIFT.

- CHANGES IN GOVERNMENT POLICIES
- CHANGES IN THE EXPECTATIONS OF HOUSEHOLDS AND FIRMS
- CHANGES IN FOREIGN VARIABLES

GOVERNMENT POLICIES – MONETARY POLICY IS CONTROLLED BY THE FEDERAL RESERVE AND THROUGH THEIR BUYING AND SELLING OF TREASURY BONDS, THEY ADD MONEY OR TAKE MONEY OUT OF THE ECONOMY. THIS CHANGES THE INTEREST RATES. FISCAL POLICIES RELATE TO TAXES. INCREASES OR DECREASES IN TAXES CHANGE DEMAND.

THE EXPECTATIONS OF HOUSEHOLDS AND FIRMS

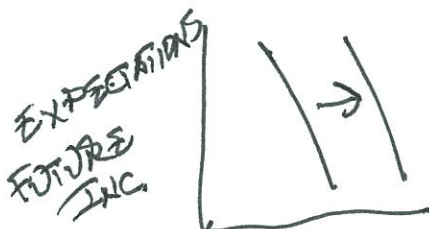
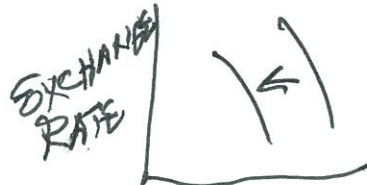
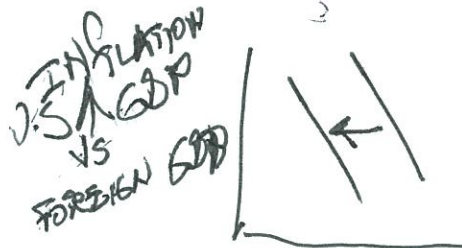
IF HOUSEHOLDS AND FIRMS BECOME MORE OPTIMISTIC, THEY TEND TO INCREASE SPENDING.

CHANGES IN FOREIGN VARIABLES

IF BUYERS IN OTHER COUNTRIES BUY FEWER U.S. GOODS, OR IF U.S. FIRMS BUY MORE FOREIGN GOODS, IT AFFECTS THE GDP AND EMPLOYMENT IN THE U.S.

EXCHANGE RATES ALSO AFFECT SPENDING. IF THE EXCHANGE RATE RISES - WHERE \$1 BUYS MORE FOREIGN CURRENCY AND THE PRICE OF FOREIGN GOODS BECOME MORE EXPENSIVE, WE IMPORT ~~LESS~~ ^{FEWER}. IF THE EXCHANGE RATE FALLS, THE DOLLAR BECOMES STRONGER AND WE BUY ~~MORE~~ ^{FEWER} FOREIGN GOODS.

GRAPHS ON PAGE 818



OTHER COUNTRIES
COFF MORE
THE VALUE OF \$
IS LESS

WEAK - EXPORT MORE
IMPORT LESS

LONG-RUN AGGREGATE SUPPLY

IN THE LONG-RUN COMPANIES HAVE TIME TO INVEST IN PLANT AND EQUIPMENT AND HIRE PEOPLE.

LONG-RUN AGGREGATE SUPPLY CURVE

IN THE LONG-RUN, THE LEVEL OF REAL GDP IS DETERMINED BY THE NUMBER OF WORKERS, THE CAPITAL STOCK, AND THE TECHNOLOGY.

CHANGES IN PRICE LEVELS DO NOT AFFECT THESE THINGS, IN THE LONG-RUN CHANGES IN PRICE LEVELS DO NOT AFFECT THE LEVEL OF REAL GDP.

THUS FIRMS GENERALLY OPERATE AT FULL EMPLOYMENT IN THE LONG-RUN, AND COMPANIES PRODUCE AT THEIR NORMAL FULL CAPACITY.

THUS THE LONG-RUN SUPPLY CURVE IS VERTICAL.

IT WILL SHIFT TO THE RIGHT FROM YEAR TO YEAR AS THE AMOUNT OF GDP INCREASE DUE TO CAPITAL STOCK, EMPLOYEES, AND TECHNOLOGY.

SHORT-RUN AGGREGATE SUPPLY CURVE

IN THE SHORT-RUN, THE AGGREGATE SUPPLY CURVE SLOPES UPWARD BECAUSE AS PRICE LEVELS FOR FINAL GOODS AND SERVICES INCREASE, COMPANIES PRODUCE MORE GOODS AND SERVICES.

BUT THE PRICE LEVELS OF INPUTS RISES MORE SLOWLY – LABOR AND MATERIALS – SO PROFIT LEVELS RISE – AND FIRMS ARE WILLING TO PRODUCE MORE GOODS AND SERVICES.

WHY DOES THIS HAPPEN?

- CONTRACTS MAKE RAISING WAGES DIFFICULT
- FIRMS ADJUST WAGES MORE SLOWLY (ANNUAL REVIEWS)
- MENU COSTS MAKE SOME PRICES “STICKY”

MENU ITEMS ARE FOUND WHEN COMPANIES HAVE PUBLISHED PRICES OF THEIR PRODUCTS – LIKE A RESTAURANT MENU – AND IT TAKES TIME AND COSTS MONEY TO CHANGE THE PRICES

SHIFTS IN THE SHORT-RUN AGGREGATE SUPPLY CURVE

THIS CURVE SHOWS THE RELATIONSHIP BETWEEN PRICE LEVELS AND THE QUANTITY OF GOODS AND SERVICES FIRMS ARE WILLING TO SUPPLY HOLDING ALL OTHERS VARIABLES CONSTANT.

THUS, THE SUPPLY CURVE WILL SHIFT WHEN THE OTHER VARIABLES CHANGE.

INCREASES IN THE LABOR FORCE AND CAPITAL STOCK

FIRMS WILL SUPPLY MORE OUTPUT AT EVERY PRICE IF IT HAS MORE WORKERS AND MORE EQUIPMENT. THE SAME IS TRUE OF THE ECONOMY AS A WHOLE.

CHINA
DEPENDS ON
WAGES, PRICE,
OR CAPITAL

TECHNOLOGY CHANGES – MORE PRODUCTS WILL BE SUPPLIED IF THE TECHNOLOGY CHANGES AND ALLOWS THE OUTPUT TO INCREASE.

EXPECTED FUTURE CHANGES IN THE PRICE LEVEL

IF FIRMS BELIEVE PRICE LEVELS WILL RISE, THEY WILL ADJUST PAY LEVELS BY A SIMILAR AMOUNT IN LABOR CONTRACTS.

ADJUSTMENTS OF WORKERS AND FIRMS TO ERRORS IN PAST EXPECTATIONS ABOUT PRICE LEVELS

IN THE PAST, THEY MAY HAVE MADE MISTAKES IN JUDGING WHAT PRICE LEVELS WOULD BE IN THE FUTURE AND SET PRICES AND WAGES AT THE WRONG LEVELS. WHEN THEY CAN MAKE CORRECTIONS, THEY OFTEN WILL.

UNEXPECTED CHANGES IN THE PRICE OF AN IMPORTANT NATURAL RESOURCE

OIL PRICES CHANGE UNEXPECTEDLY AND COSTS OF PRODUCTION CAN RISE. SO THE PRICES OF COMMODITIES USED IN PRODUCTS.

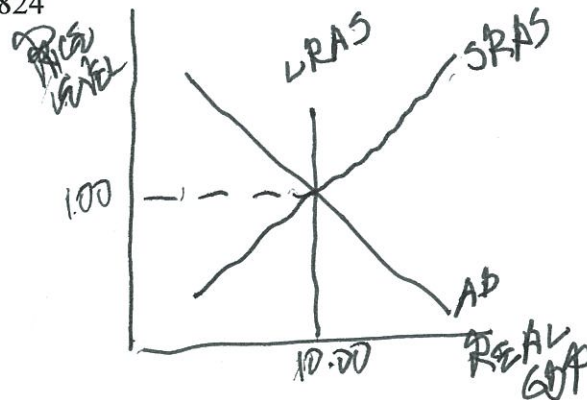
THIS IS CALLED A SUPPLY SHOCK.

HOLDING EVERYTHING CONSTANT, EXPECTATIONS OF A HIGHER PRICE LEVEL WILL CAUSE THE SRAS CURVE TO SHIFT TO THE LEFT.

BUT THIS MAY BE OFFSET BY CHANGES IN WAGES AND TECHNOLOGY. (HIGH TECH CARS, WAGE CONCESSIONS)

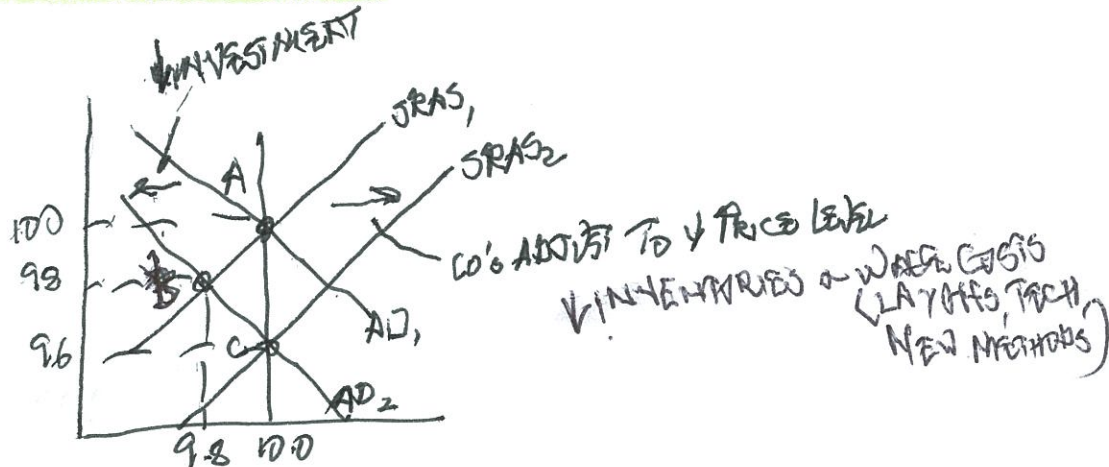
MACROECONOMIC EQUILIBRIUM IN THE LONG-RUN AND SHORT-RUN

GRAPH PAGE 824



HERE IS THE AGGREGATE DEMAND CURVE, AND THE SHORT-RUN AND LONG-RUN AGGREGATE SUPPLY CURVES.

GRAPH PAGE 825



RECESSION

AN OUTBREAK OF FIGHTING IN THE MIDDLE EAST CAUSES FIRMS TO BECOME PESSIMISTIC ABOUT PROFITS DUE TO INCREASES IN OIL PRICES.

INVESTMENT DECREASES AND SHIFTS THE AGGREGATE DEMAND CURVE TO THE LEFT.

THE ECONOMY MOVES FROM POINT A TO A NEW SHORT-RUN EQUILIBRIUM AT POINT B.

THIS SHORT-RUN EQUILIBRIUM MAKES THE PRICE LEVEL FALL, AND FIRMS ADJUST TO LOWER PRICES AND WORKERS ACCEPT LOWER WAGES. THIS MOVES THE SRAS TO THE RIGHT AND A NEW EQUILIBRIUM IS AT C.

SOME WORKERS LOSE THEIR JOBS SINCE PRODUCTION IS CUT BACK WITH LOWER PROFITS. SO $AD_1 \rightarrow AD_2$

REAL
WORLD

BUT WORKERS
WOULDN'T ACCEPT
LOWER WAGES
EASILY (SINCE)
HOWEVER
WILL THERE
BE A
DEPRESSION

PAGE 823
↓
FIRMS
LOW
TO
OUP
CURVE
TO ↓ INVEST

IT MAY TAKE MANY MONTHS OR YEARS FOR ALL OF THE CHANGES TO WORK THEIR WAY THROUGH THE SYSTEM.

EXPANSION – IF FIRMS BECOME MORE OPTIMISTIC, INVESTMENT INCREASES, AND THE DEMAND CURVE SHIFTS TO THE RIGHT.

FIRMS ARE OPERATING ABOVE THEIR NORMAL CAPACITY AND MORE WORKERS ARE HIRED.

WORKERS HAVE THEIR PAY ADJUSTED HIGHER.

THUS FIRMS HAVE TO CHARGE HIGHER PRICES FOR THEIR PRODUCTS.

HIGHER PRICES MEAN FIRMS WANT TO SUPPLY MORE PRODUCTS AND THE SRAS SHIFTS TO THE LEFT.

Shift to left
DUE TO ↑ LABOR COSTS

Profits/production ↓
SRAS shifts left
inflation ↑
productivity
returns but
wages are higher
so prices are
higher

ECONOMICS 262 CHAPTER 25

MONEY AND WHY WE NEED IT

BARTER

BARTER ECONOMIES HAVE MANY SHORTCOMINGS.

WHAT'S THE VALUE OF A PLOW AND A CHICKEN?

WHAT IF THE SELLER OF THE CHICKEN DOESN'T NEED A PLOW?

CAN YOU CARRY THE PLOW TO THE GENERAL STORE?

TRADING GOODS AND SERVICES BECOMES MUCH EASIER WHEN CURRENCY BECOMES INVOLVED.

THE FUNCTIONS OF MONEY

MEDIUM OF EXCHANGE – THIS HAPPENS WHEN SELLERS ARE WILLING TO ACCEPT IT IN EXCHANGE FOR GOODS AND SERVICES.

ECONOMIES ARE MUCH MORE EFFICIENT WHEN A SINGLE GOOD IS RECOGNIZED AS A MEDIUM OF EXCHANGE.

UNIT OF ACCOUNT – IN BARTER, EACH GOOD HAS MANY PRICES. WITH CURRENCY, EACH GOOD HAS A SINGLE PRICE.

A UNIT OF ACCOUNT IS A WAY OF MEASURING VALUE.

STORE OF VALUE – CURRENCY ALLOWS VALUE TO BE STORED EASILY AND TRANSPORTED EASILY.

BUT MONEY DOES NOT EARN INTEREST.

BUT STOCKS, BONDS, SAVINGS ACCOUNTS DO.

SO WHY HOLD ONTO MONEY IF IT DOESN'T EARN A RETURN?

LIQUIDITY – THE EASE WITH WHICH A GIVEN ASSET CAN BE CONVERTED INTO THE MEDIUM OF EXCHANGE.

EXCHANGING FINANCIAL INSTRUMENTS INTO CURRENCY COSTS MONEY (BROKERAGE FEES), SO PEOPLE KEEP SOME MONEY ON HAND IN ORDER TO BUY WHAT THEY NEED.

STANDARD OF DEFERRED PAYMENT – BORROWING OR LENDING. MONEY CAN FACILITATE EXCHANGE AT ANY POINT IN TIME.

WHAT CAN SERVE AS MONEY?

1. **IT MUST BE ACCEPTABLE/USABLE BY MOST PEOPLE.** TWO
2. **IT SHOULD BE OF STANDARDIZED QUALITY SO THAT TOW UNITS ARE IDENTICAL.**
3. **IT SHOULD BE DURABLE AND DOES NOT SPOIL.**
4. **IT SHOULD BE VALUABLE RELATIVE TO ITS WEIGHT SO IT CAN BE EASILY TRANSPORTED**
5. **IT SHOULD BE DIVISIBLE SINCE DIFFERENT GOODS HAVE DIFFERENT VALUES**

COMMODITY MONEY (GOLD) - BUT VALUE DEPENDS ON PURITY

HOW MONEY IS MEASURED

M1

BURLINGTON
BILLS -

F.I.A. MONEY - PRIVATE BANKS (LOANERS) & GOV'T STORED GOLD & ISSUED PAPER CERTIFICATES THAT COULD BE EXCH. FOR GOLD

CURRENCY – PAPER MONEY AND COINS IN CIRCULATION (NOT HELD BY BANKS)

8/15/71 ENDS. BUT GOLD SET NOW NO BANK

CHECKING ACCOUNT DEPOSITS

TRAVELER'S CHECK.

80% OF ALL TRANSACTIONS ARE DONE BY CHECKS. PLASTIC

60% OF AMERICAN CURRENCY IS OUTSIDE THE U.S.

M2

THIS INCLUDES EVERYTHING IN M1 PLUS SAVINGS ACCOUNTS, SMALL-DENOMINATION TIME DEPOSITS (CD'S), MONEY MARKET ACCOUNTS, NONINSTITUTIONAL (PERSONAL) MONEY MARKET FUND ACCOUNTS.

HOW DO BANKS CREATE MONEY

BANK BALANCE SHEETS

RESERVES ARE DEPOSITS BANKS HAVE RETAINED – NOT LOANED OUT.

THE FED REQUIRES THAT BANKS HAVE 10% OF THE AMOUNT OF THEIR LOANS HELD IN RESERVES.

10 - 12.4M
39 - 12.4 - 79.5
10% - 79.5M+

THESE ARE CALLED REQUIRED RESERVES. AMOUNTS HELD ABOVE THIS REQUIREMENT ARE CALLED EXCESS RESERVES.

ILLUSTRATIONS ON PAGE 862

LET'S SAY YOU DEPOSIT \$1,000 INTO YOUR BANK. THE BANK BALANCE SHEET NOW LOOKS LIKE THIS:

10%
RESERVE
REQ

RESERVES	\$1,000	DEPOSITS	\$1,000
----------	---------	----------	---------

DEPOSITS ARE LIABILITIES SINCE THEY ARE OWED TO DEPOSITORS.

THE BANK THEN LOANS \$900 TO ANOTHER CUSTOMER, KEEPING \$100 IN REQUIRED RESERVES.

THE CUSTOMER PUTS THE \$900 INTO THE BANK.

SO THE BALANCE SHEET LOOKS LIKE :

RESERVES	\$1,000	DEPOSIT	\$1,000
LOAN	900	DEPOSIT	900

NOW THE CUSTOMER WRITES A CHECK TO BUY A CAR FOR \$900. THE SELLER OF THE CAR DEPOSITS THE CHECK IN HIS BANK. THE SELLER'S BANK BALANCE SHEET LOOK LIKE THIS:

RESERVES	\$900	DEPOSITS	\$900
----------	-------	----------	-------

THAT BANK NOW MAKES A LOAN OF \$810, KEEPING \$90 IN REQUIRED RESERVES. NOW THE BALANCE SHEET LOOKS LIKE THIS:

RESERVES	\$900	DEPOSIT	\$900
LOANS	810	DEPOSIT	810

THE INITIAL DEPOSIT OF \$1,000 INTO YOUR BANK ACCOUNT HAS NOW RESULTED IN THE CREATION OF $\$1,000 + \$900 + \$10 = \$2,710$ IN CHECKING ACCOUNT DEPOSITS.

THE PROCESS WILL CONTINUE UNTIL A TOTAL OF \$10,000 IS ADDED TO CHECKING ACCOUNT DEPOSITS.

DEPOSIT MULTIPLIER

EACH BANK KEEPS RESERVES OF 10% OF ITS DEPOSITS. FOR THE BANKING SYSTEM AS A WHOLE, THE TOTAL INCREASE IN RESERVES IS \$1,000 – THE AMOUNT OF YOUR ORIGINAL DEPOSIT.

THEREFORE THE SYSTEM AS A WHOLE WILL END UP WITH \$10,000 IN DEPOSITS BECAUSE \$1,000 IS 10% OF \$10,000.

OR $1,000 + (0.9 \times 1000)$ FOR EACH BANK.

SO $1 / 1 - 0.9$ OR $1 / .10 = 10$ **THE DEPOSIT MULTIPLIER**

IF THE RESERVE REQUIREMENT IS DIFFERENT THEN THE DENOMINATOR IS DIFFERENT. IF IT 20% THEN WE HAVE:

$$1 / .20 = 5$$

THE REAL WORLD MULTIPLIER

BUT IN THE REAL WORLD, BANKS KEEP EXCESS RESERVES TO GUARD AGAINST MANY DEPOSITORS WANTING TO WITHDRAW CASH AT THE SAME TIME.

THIS MAKES THE MULTIPLIER SMALLER.

ALSO, NOT ALL LOANS ARE DEPOSITED IN BANKS – SOME IS KEPT OUT IN CURRENCY – WHICH REDUCES THE MULTIPLIER.

SO THE REAL WORLD MULTIPLIER IS CLOSER TO 2.5.

THE FEDERAL RESERVE SYSTEM

WE HAVE A **FRACTIONAL RESERVE SYSTEM** – AS DESCRIBED ABOVE.

THE FED HAS 12 REGIONAL BRANCHES THE NEW YORK BRANCH BEING THE LARGEST AND WHERE OPEN MARKET OPERATIONS ARE DONE.

DISCOUNT POLICY – **DISCOUNT LOANS** ARE LOANS MADE TO BANKS BY THE FED AND RATE THEY CHARGE IS THE **DISCOUNT RATE**.

RESERVE REQUIREMENTS CAN CHANGE, BUT THAT CAUSE BANKS TO HAVE TO CALL LOANS IF THE RESERVE REQUIREMENT IS RAISED. IT IS RARELY CHANGED.

THE CONNECTION BETWEEN MONEY AND PRICES

$$M \times V = P \times Y$$

MONEY SUPPLY $\times$ VELOCITY OF MONEY = PRICE LEVEL $\times$ REAL GDP

V USUALLY EQUALS ABOUT 9.7. IT IS THE NUMBER OF TIMES EACH DOLLAR IN THE MONEY SUPPLY IS USED TO PURCHASE GOODS AND SERVICES IN REAL GDP.

GROWTH RATES OF MONEY AND VELOCITY = GROWTH RATES OF THE PRICE LEVEL AND GDP. MEASURED IN PERCENTAGES FROM ONE YEAR TO THE NEXT.

LOOK THIS UP CH 25
INFLATION RATE = GROWTH RATE OF THE MONEY SUPPLY $\times$ GROWTH RATE OF VELOCITY $\div$ GROWTH RATE OF REAL OUTPUT.

IF VELOCITY IS A CONSTANT (PEOPLE DON'T CHANGE THE NUMBER OF TIMES THEY BUY STUFF) THEN

INFLATION RATE = GROWTH RATE OF THE MONEY SUPPLY $\div$ GROWTH RATE OF REAL OUTPUT.

IF REAL GDP $\uparrow$ $\approx$ $\uparrow$ ECONOMIC ACTIVITY

IF VELOCITY IS CONSTANT, ECONOMIC GROWTH ~~CAN~~ CAN HAPPEN ONLY WITH MORE MONEY

IF THEY BALANCE, INFLATION RATE STAYS THE SAME

IF MONEY $\uparrow$ $>$ REAL GDP $\uparrow$ $\rightarrow$ INFLATION
IF MONEY $\uparrow$ $<$ REAL GDP $\uparrow$ $\rightarrow$ DEFATION

SO - IF WE DON'T HAVE $\uparrow$ ECONOMIC GROWTH INCREASES WE HAVE TO GET \$ FROM OVERSEAS

GREATLY, CORP'S HAVE $\$$ WEALTHY HAVE $\$$ SO NO NEED TO $\uparrow$ MONEY SUPPLY OR BORROW FROM OVERSEAS.

TAXES WON'T HELP. WE ALREADY HAVE $\$$ IN CASH/INT.
GOV'T SPENDING HELPS TEMPORARILY BUT IT'S NOT THE HEART OF THE ECONOMY (CORP'S)

2) GRS IN HIGHER ESTIM
3) ARE CARRYING
THAN PAYING TO PUT MONEY
IN TREASURERS

NAT'L DEBT
MAY NOT
FALL AS WE
REPLACE LOANS THAT
HAVE HIGHER INT.
WITH 0% LOANS
EVEN HIGHER INT RATES

MONETARY POLICY

BIG 3 PROBLEMS
EVERYTHING OVERVALUED
HOUSES, CARS

THIS IS THE FEDS RESPONSIBILITY TO MANAGE THE MONEY SUPPLY.

THE GOALS OF MONETARY POLICY

1. PRICE STABILITY
2. HIGH EMPLOYMENT
3. ECONOMIC GROWTH
4. STABILITY OF FINANCIAL MARKETS AND INSTITUTIONS.

PRICE STABILITY – BECAUSE RISING PRICES ERODE THE VALUE OF MONEY AS A MEDIUM OF EXCHANGE AND A STORE OF VALUE.

HIGH EMPLOYMENT – UNEMPLOYED WORKERS AND UNUSED FACTORIES REDUCE GDP BELOW ITS POTENTIAL LEVEL.

IT ALSO CAUSES FINANCIAL TRESS AND DECREASES SELF-ESTEEM FOR WORKERS WHO ARE OUT OF JOBS.

ECONOMIC GROWTH – STABLE GROWTH ALLOWS COMPANIES AND PEOPLE TO PLAN AHEAD AND THAT ENCOURAGES LONG-RUN INVESTMENTS.

STABILITY OF FINANCIAL MARKETS AND INSTITUTIONS – THIS IS WHERE SAVERS AND BORROWERS MEET, AND INEFFICIENT MARKETS MEANS RESOURCES RE LOST.

SAVERS WAIST RESOURCES LOOKING FOR INVESTMENTS.

THE FED'S CHOICE OF MONETARY POLICY TARGETS

THE FED TRIES TO KEEP BOTH UNEMPLOYMENT AND INFLATION RATES LOW, BUT IT CAN'T AFFECT EITHER ONE DIRECTLY BY TELLING FIRMS HOW MANY PEOPLE TO HIRE OR WHAT PRICES TO CHARGE.

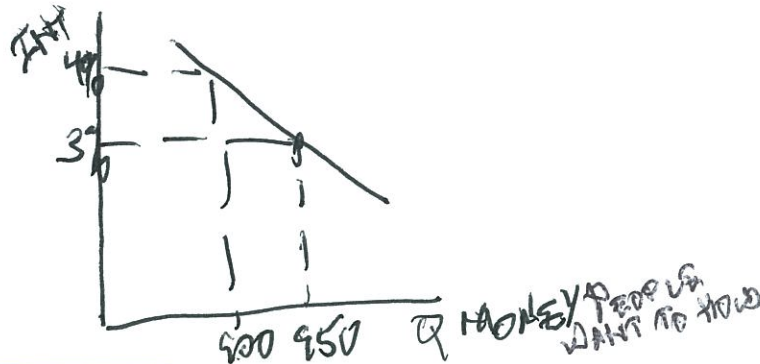
INSTEAD IT SETS THEM AS TARGETS ALONG WITH GDP, AND TRIES TO AFFECT THEM THROUGH HANGES IN THE MONEY SUPPLY AND INTEREST RATES.

REALLY
A UNEMPLOY
A INFL

DEMAND FOR MONEY

THE DEMAND CURVE FOR MONEY IS DOWNWARD SLOPING – THE LOWER THE INTEREST RATE, THE MORE MONEY PEOPLE WANT TO HOLD.

GRAPH PAGE 890



WHEN INTEREST RATES INCREASE, HOLDING MONEY BECOMES MORE EXPENSIVE – THE OPPORTUNITY COST GOES UP IF YOU ARE HOLDING MONEY WHEN IT COULD BE INVESTED.

SHIFTS IN THE DEMAND CURVE

CHANGES IN VARIABLES OTHER THAN THE INTEREST RATE – THE PRICE OF MONEY – WILL SHIFT THE DEMAND CURVE FOR MONEY.

THE TWO MOST IMPORTANT ARE **GDP** AND THE **PRICE LEVEL**.

AN INCREASE IN GDP MEANS THAT BUYING AND SELLING OF GOODS AND SERVICES WILL INCREASE, AND SO WILL THE DEMAND FOR A MEDIUM OF EXCHANGE.

AN INCREASE IN THE PRICE LEVEL INCREASES THE QUANTITY OF MONEY DEMANDED SINCE IT TAKES MORE MONEY TO BUY PRODUCTS.

MORE MONEY IS DEMANDED AT EACH INTEREST RATE.

HOW THE FED MANAGES THE MONEY SUPPLY

FEDERAL OPEN MARKET COMMITTEE (FOMC) MEETS IN WASHINGTON D.C. EIGHT TIMES EACH YEAR TO DECIDE WHAT TO DO ABOUT THE MONEY SUPPLY.

TO INCREASE IT, IT ORDERS THE NEW YORK FEDERAL RESERVE BANK TO BUY BACK TREASURY BONDS, MEANING THEY PAY FOR THE BONDS WITH MONEY GOING INTO THE FINANCIAL MARKETS.

TO DECREASE M1, THE SELL TREASURY BONDS IN THE MARKETS.

EQUILIBRIUM IN THE MONEY MARKET

GRAPH AT THE BOTTOM OF PAGE 892



THE MONEY SUPPLY INCREASES AND THE INTEREST RATES GO DOWN IF THE DEMAND FOR MONEY STAYS THE SAME.

PEOPLE
WHY? IF THEY DON'T NEED THE MONEY, THEY WILL INVEST IT. THE MORE DEMAND FOR TREASURIES INCREASES THE PRICE OF THE TREASURY BOND, WHICH DECREASES THE INTEREST RATE.

TO EARN MONEY ON TREASURY BILL (SHORT-TERM) WITH A FACE VALUE OF \$1000, YOU BUY IT FOR LESS TODAY AND SELL AT \$1000 AT MATURITY.

IF THE PRICE TODAY IS \$962, YOU WILL EARN \$38 WHEN YOU SELL IT. SO THE RETURN IS:

$$\$38 / \$962 \times 100 = 4\%$$

IF THE DEMAND GOES UP, THAT MAY DRIVE THE PRICE YOU PAY TO \$971, GIVING YOU A PROFIT OF \$29 WHEN YOU CASH IT IN.

$$\$29 / \$971 \times 100 = 3\%$$

IF INTEREST RATES FALL, SO DO THE OPPORTUNITY COSTS. EVENTUALLY YOU ARE WILLING TO HOLD THE ADDITIONAL MONEY PUT INTO THE ECONOMY BY THE FED. AND THE MONEY MARKET WILL BE IN EQUILIBRIUM.

IN THE LONG-RUN, THE MOST RELEVANT RATES ARE LONG-TERM RATES, SUCH AS CORPORATE BONDS (OR LONG-TERM TREASURY BONDS). THESE ARE USED FOR LONG-TERM PROJECTS LIKE HIGHWAYS OR BUILDINGS.

BUT WHEN THE FED CONDUCTS MONETARY POLICY, IT IS INTERESTED IN SHORT-TERM RATES.

BUT WHEN SHORT-TERM RATES CHANGE, GENERALLY LONG-TERM RATES WILL ALSO CHANGE, BUT WITH A LAG IN TIME.

CHOOSING MONETARY POLICY TARGETS

THE MAIN TARGETS ARE GDP AND PRICE LEVELS, WHICH ARE CLOSELY RELATED.

AFTER THE LAWS CHANGED IN 1980 ALLOWING MONEY MARKET CHECKING ACCOUNTS THAT PAID INTEREST, M2 BECAME MORE IMPORTANT.

BUT THEN IN 1993, THE FED CHAIRMAN, ALAN GREENSPAN, SAID THE FED WAS GOING TO FOCUS ON INTEREST RATES.

THIS IS DONE BY AFFECTING THE FED FUNDS RATE.

THIS IS THE INTEREST RATE BANKS CHARGE EACH OTHER TO BORROW MONEY, USUALLY FOR VERY SHORT TERMS SUCH AS OVERNIGHT.

BUT THE FED DOESN'T DIRECTLY CONTROL THE FED FUNDS RATE, WHICH IS DETERMINED BY THE SUPPLY AND DEMAND FOR RESERVES IN THE INDIVIDUAL BANKS.

BUT THE FED CAN INCREASE THE SUPPLY OF BANK RESERVES THROUGH OPEN MARKET OPERATIONS, AND THUS IT CAN SET A TARGET FOR FED FUND RATES.

OVER TIME IT HAS BECOME VERY GOOD AT SETTING THE MONEY SUPPLY SO THAT THE FED HITS THE TARGET VERY CONSISTENTLY.

SEE GRAPH AT BOTTOM OF PAGE 896

HOW INTEREST RATES AFFECT AGGREGATE DEMAND

CONSUMPTION - LOW INTEREST RATES LEAD TO INCREASE SPENDING ON DURABLES, AND REDUCE THE INCENTIVE TO SAVE. SO PEOPLE SPEND MORE.

INVESTMENT - HIGHER INTEREST RATES IN CORPORATE BONDS OR BANK LOANS MEAN COMPANIES SPEND LESS ON INVESTMENT PROJECTS.

ALSO, STOCKS BECOME MORE ATTRACTIVE WITH LOW INTEREST RATES ON SAVINGS, SO COMPANIES MIGHT TRY TO SELL STOCK TO RAISE MONEY RATHER THAN BORROW.

AS INTEREST RATES RISE, FEWER HOMES ARE SOLD AS MORTGAGES BECOME MORE EXPENSIVE.

U.S. IS POLITICALLY
SENSITIVE TO TAXES (LITTLE
SAFETY NET - UNEMP COMP - FICA
HEALTH INSURANCE, NEW
TECH IN THE
WORKING
PREMIUMS FOR
YOUTH (+ CO.)

DISCOUNT RATE - ~~PRIMARY RATE~~
FED LOANS TO BANKS

LOWER DIVIDENDS
FEWER PROJECTS
FASTER GROWTH
HIGHER PROFITS

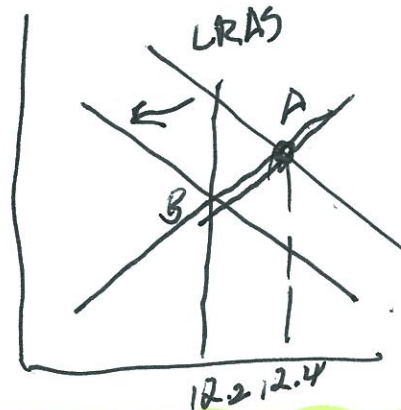
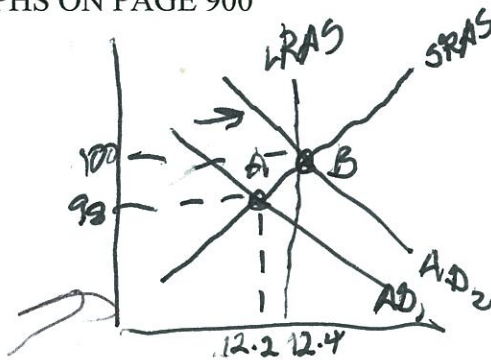
NET EXPORTS – THE VALUE OF NET EXPORTS DEPENDS PARTLY ON THE EXCHANGE RATES BETWEEN THE DOLLAR AND FOREIGN CURRENCIES.

WHEN THE VALUE OF THE DOLLAR RISES, HOUSEHOLDS AND FIRMS IN OTHER COUNTRIES WILL FIND IT MORE EXPENSIVE TO BUY U.S. GOODS, SO THEY BUY MORE OF THEIR OWN GOODS.

THUS THE U.S. EXPORTS LESS AND IMPORTS MORE, AND THE VALUE OF NET EXPORTS DECREASES.

THE EFFECTS OF MONETARY POLICY ON REAL GDP AND PRICE LEVELS

GRAPHS ON PAGE 900



AT FIRST, EQUILIBRIUM IS AT POINT A, BUT THE ECONOMY IS OPERATING BELOW POTENTIAL REAL GDP.

THE FED USES AN EXPANSIONARY POLICY BY INCREASING THE MONEY SUPPLY.

THE LOWER INTEREST RATE, INCREASES CONSUMPTION, INVESTMENT, AND NET EXPORTS WHICH SHIFT THE AGGREGATE DEMAND CURVE TO THE RIGHT.

IT NOW IS AT POTENTIAL REAL GDP AT POINT B.

ON THE GRAPH ON THE RIGHT, THE EQUILIBRIUM IS AT A, ABOVE THE POTENTIAL REAL GDP, AND UNEMPLOYMENT IS LOW AND PRICES ARE INCREASING.

THE FED REDUCES THE MONEY SUPPLY – CONTRACTIONARY POLICY – WHICH MOVES AGGREGATE DEMAND TO THE LEFT SO THE NEW EQUILIBRIUM IS AT POINT B.

↑ MONEY SUPPLY
↓ INTEREST RATES
↑ CONSUMPTION

1.5M NEW
EMPLOYEES TO
LARGE FIRM
2-3% ↑ PRODUCTION
TO STAY EVEN
ON LOSS - GDP
WAS TO GROW
3-4%
BUT THIS
SEASONAL
ADJUST

WITH HIGH UNEMPL.
THERE WILL OFTEN BE
EXCESS PRODUCTION
CAPACITY. CO'S WON'T
INVEST MUCH WITH
EXCESS CAPACITY

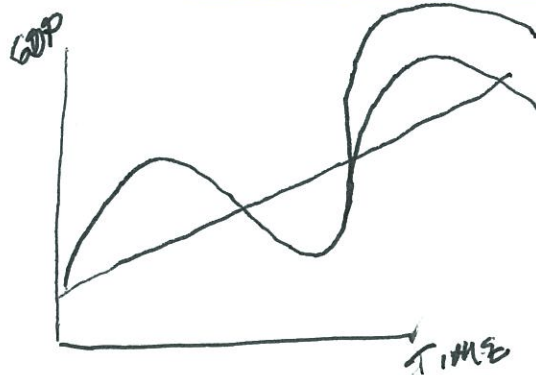
NOW FED IS TRY
EXPANSIONARY POLICY
TRYING TO ↑ CONSUMPTION
BUT SAVINGS IS INCREASING
WHY? EXPECTATIONS OF PRICES
TO GO ↑, ETC SAVINGS ALSO IS PAYING
HIGHER

GETTING THE TIMING RIGHT

THE FED'S ABILITY TO QUICKLY RECOGNIZE THE NEED FOR A CHANGE IN MONETARY POLICY IS THE KEY TO ITS SUCCESS.

IF THE FED IMPLEMENTS ITS POLICY TOO LATE, IT MAY DESTABILIZE THE ECONOMY.

GRAPH ON PAGE 909



SINCE IT TAKES MONTHS FOR ECONOMIC STATISTICS TO BE GATHERED, THERE IS OFTEN A DELAY BEFORE THE FED RECOGNIZES A RECESSION HAS BEGUN.

IF IT IMPLEMENTS AN EXPANSIONARY POLICY WHEN THE EXPANSION HAS REALLY ALREADY BEGUN, IT CAN CAUSE A HUGE INCREASE IN AGGREGATE DEMAND AND CAUSE INFLATION.

THE IDEA IS FOR THE FED TO ACT IN A COUNTERCYCLICAL WAY - TO APPLY AN EXPANSIONARY POLICY JUST AT THE TART OF A DOWNTURN.

WHY NOT TARGET BOTH INTEREST RATES AND THE MONEY SUPPLY?

BECAUSE THE FED CANNOT DO BOTH AT THE SAME TIME.

GRAPH ON PAGE 911



IT CAN SET TARGET AT 5% OR 4% BUT NOT BOTH IT CAN'T A DEMAND

THE FED CONTROLS THE MONEY SUPPLY, BUT NOT THE DEMAND, WHICH IS DETERMINED BY HOUSEHOLDS AND FIRMS.

ONLY THOSE COMBINATIONS OF MONEY SUPPLY AND INTEREST RATE THAT ARE AT EQUILIBRIUM ARE POSSIBLE.

FISCAL POLICY

THIS IS A COMBINATION OF FEDERAL PURCHASES AND TAXES.

AUTOMATIC STABILIZERS

SOME GOVERNMENT SPENDING HAPPENS AUTOMATICALLY IN RESPONSE TO THE BUSINESS CYCLE: TRANSFER PAYMENTS, UNEMPLOYMENT INSURANCE, MEDICARE, SOCIAL SECURITY, ETC.

THESE HAPPEN WITHOUT GOVERNMENT ACTION.

SPENDING AND TAXES

FEDERAL PURCHASES MEANS THAT THE GOVERNMENT BUYS GOODS AND SERVICES. NOT ONLY DOES THAT PUT MONEY INTO THE ECONOMY, BUT IT ADD TO GDP.

WE HAD A GOVERNMENT SURPLUS BETWEEN 1992 AND 2001 WITH THE END OF THE COLD WAR AND THE LACK OF SPENDING ON DEFENSE MATERIALS AND SERVICES. THE SIZE OF THE MILITARY DECREASED AS DID EXPENDITURES ON EQUIPMENT AND R&D.

THERE ARE OTHER PARTS OF FISCAL POLICY – INTEREST ON THE NATIONAL DEBT, STATE GOVERNMENT SPENDING, AND LOCAL GOVERNMENT SPENDING.

THE BIGGEST PART IS TRANSFER PAYMENTS – 44%, NEARLY TWICE AS MUCH AS DEFENSE SPENDING – IN 2006 WITH TWO WARS GOING ON.

42% OF TAXES CAME FROM INDIVIDUALS, WHILE 36% WERE FOR SOCIAL INSURANCE PROGRAMS.

EFFECTS OF FISCAL POLICY

THE FEDERAL GOVERNMENT USES STABILIZATION POLICY TO OFFSET THE BUSINESS CYCLE.

GOVERNMENT PURCHASES AND TAXES CHANGE GDP, EMPLOYMENT AND THE PRICE LEVEL.

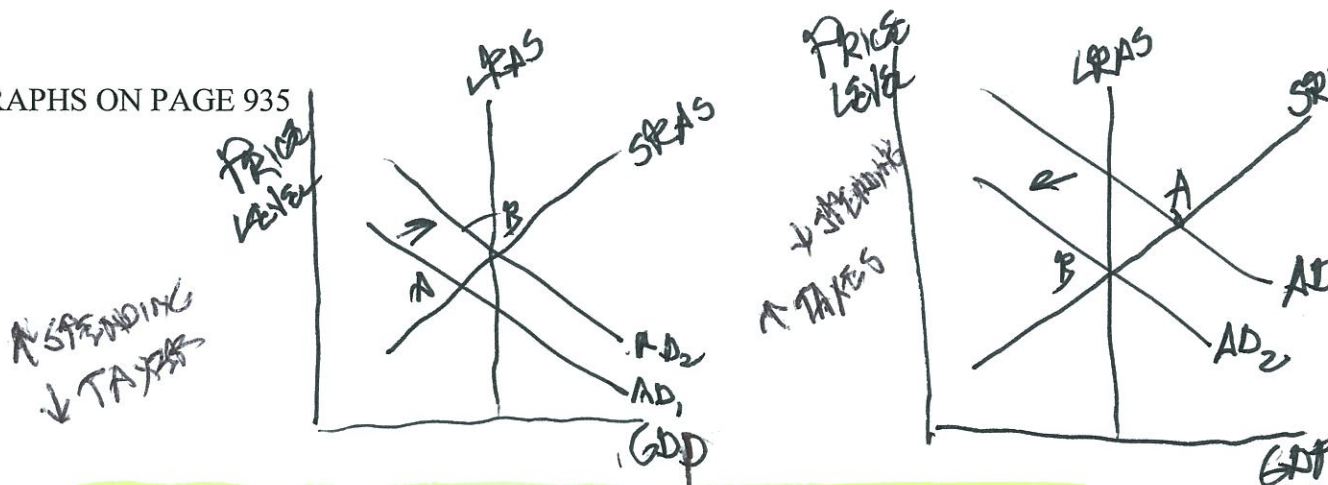
INCREASING PURCHASES OR DECREASING TAXES ACT AS AN ECONOMIC STIMULUS.

RICARDIAN EQUIVALENCE
IF GOV ↓ TAXES, PEOPLE
WILL SAVE MORE KNOWING
TAXES WILL ↑ IN FUTURE
TO MAKE UP SHORT FALL.
BUT THEY SPEND MORE = THEY'LL PAY ↓ TAX.

FLAT TAX?
WHAT IS
SPENDING ↓?
RECESSION? 1?
THE LATION?

NO SUCH
THING AS A
BUSINESS
TAX -
WE PAY
IT TOO
SHOULD
WE JUST
THINKS
WE DO
TAX VALUE
DE WHAS
IS?
LAND
PAYS

GRAPHS ON PAGE 935



THESE WORK THE SAME AS THE EXPANSION AND CONTRACTION OF THE MONEY SUPPLY.

TAXES CHANGE DISPOSABLE INCOME.

THE GOAL OF BOTH EXPANSIONARY MONETARY POLICY AND EXPANSIONARY FISCAL POLICY IS TO INCREASE AGGREGATE DEMAND RELATIVE TO WHAT IT WOULD HAVE BEEN WITHOUT THE POLICY.

GOVERNMENT PURCHASES AND TAX MULTIPLIERS

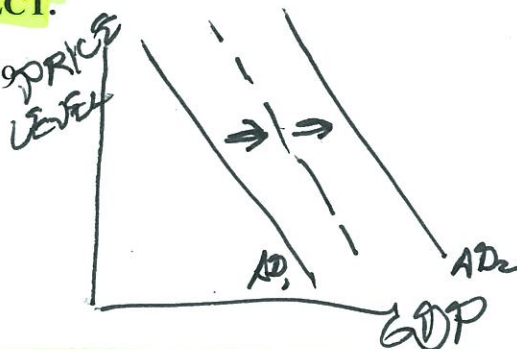
IF GOVERNMENT INCREASES SPENDING BY \$100 BILLION, IT WILL INCREASE, TOTAL SPENDING WILL INCREASE BY MORE.

THE INITIAL INCREASE IN GOVERNMENT PURCHASES IS CALLED **AUTONOMOUS** BECAUSE IT DOES NOT DEPEND ON THE LEVEL OF REAL GDP.

THE INCREASE IN CONSUMPTION THAT RESULTS FROM AN INCREASE IN AUTONOMOUS SPENDING IS CALLED **INDUCED**.

THE SERIES OF INDUCED CONSUMPTION THAT RESULTS IS CALLED THE **MULTIPLIER EFFECT**.

GRAPH ON PAGE 939



AUTONOMOUS SPENDING MOVED AGGREGATE DEMAND TO THE DOTTED LINE. THE MULTIPLIER MOVED IT TO AD2.

THE RATIO OF THE CHANGE IN EQUILIBRIUM REAL GDP TO THE INITIAL CHANGE IN GOVERNMENT PURCHASES IS THE GOVERNMENT PURCHASES MULTIPLIER.

$$\frac{\Delta \text{EQUILIBRIUM REAL GDP}}{\Delta \text{IN GOV'T PURCHASES}}$$

THE TAX MULTIPLIER IS THE CHANGE IN EQUILIBRIUM REAL GDP DIVIDED BY THE CHANGE IN TAXES.

$$\frac{\Delta \text{EQUILIB. REAL GDP}}{\Delta \text{TAXES}}$$

THE TAX MULTIPLIER IS NEGATIVE SINCE CHANGES IN TAXES AND CHANGES IN GDP MOVE IN OPPOSITE DIRECTIONS.

— Δ NOT RAS

SO, IF THE TAX MULTIPLIER IS -1.6, A \$100 BILLION CUT IN TAXES WILL INCREASE GDP BY $-1.6 \times -\$100 \text{ BILLION} = \160 BILLION .

TAX MULTIPLIERS ARE USUALLY SMALLER, SINCE HOUSEHOLDS OFTEN SAVE SOME PORTION OF THE TAX DECREASE OR SPEND IT ON FOREIGN PRODUCTS.

~~TRADE~~
IF IN GETTING A TAX NOT PAYING \$

CHANGES IN TAX RATES

THE HIGHER THE TAX RATE, THE SMALLER THE MULTIPLIER EFFECT.

CHANGES IN THE TAX RATE AFFECTS EQUILIBRIUM IN TWO WAYS:

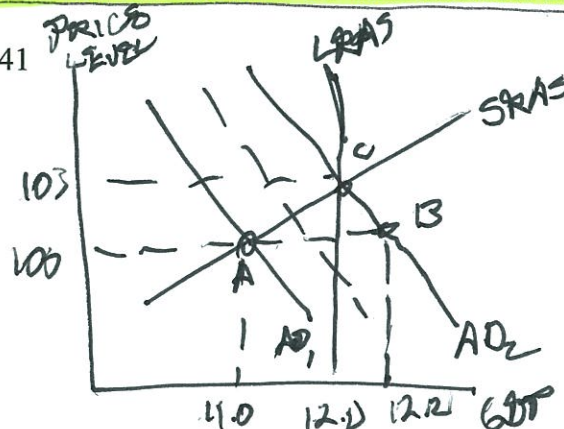
1. TAX CUTS INCREASE DISPOSABLE INCOME, WHICH LEADS TO INCREASED SPENDING.
2. A TAX CUT INCREASE THE MULTIPLIER EFFECT.

TAKING INTO ACCOUNT AGGREGATE SUPPLY

SRAS IS UPWARD SLOPING, SO INCREASES IN AGGREGATE DEMAND WILL INCREASE PRICE LEVELS.

THE RISE IN PRICE LEVELS MEANS EQUILIBRIUM REAL GDP WILL NOT INCREASE BY THE FULL AMOUNT OF THE MULTIPLIER EFFECT.

GRAPH PAGE 941



MULTIPLIERS WORK IN BOTH DIRECTIONS

DECREASES IN GOVERNMENT SPENDING AND INCREASES IN TAXES ALSO HAVE MULTIPLIER EFFECTS ON EQUILIBRIUM, BUT THE EFFECT IS NEGATIVE.

LIMITS ON USING FISCAL POLICY

GETTING THE TIMING RIGHT ON FISCAL POLICY IS MORE DIFFICULT THAN WITH MONETARY POLICY DUE TO THE TIME IT TAKES TO IMPLEMENT FISCAL POLICY.

CROWDING OUT

INCREASES IN GOVERNMENT SPENDING MAY CAUSE PRIVATE CONSUMPTION, INVESTMENT, OR NET EXPORTS TO FALL.

WHEN THE GOVERNMENT MAKES TEMPORARY EXPENDITURES – ONE-TIME SPENDING SUCH AS ON A CONSTRUCTION PROJECT – AT SOME POINT, THE SPENDING WILL END WHEN THE PROJECT IS COMPLETED, AND GOVERNMENT SPENDING WILL DECREASE TO ITS PREVIOUS LEVEL.

↑ G

HOUSEHOLDS AND FIRMS (WHO GET MONEY FROM THE PROJECT) WILL INCREASE THEIR DEMAND FOR M1 TO ACCOMMODATE THE INCREASES IN BUYING AND SELLING.

↑ M1
↑ C, I

AS DEMAND FOR MONEY INCREASES, INTEREST RATES WILL RISE, AND THAT IN TURN CAUSES A DECREASE IN EACH COMPONENT OF PRIVATE EXPENDITURES – PEOPLE HAVE MORE INCENTIVE TO SAVE.

↑ INT. RATES
↓ C ↑ SAVING

CONSUMPTION AND INVESTMENTS DECLINE – PEOPLE SAVE AND DON'T SPEND, AND BORROWING DECREASES WITH HIGHER RATES.

C ↓ I ↓

NET EXPORTS DECLINE – U.S. PRODUCTS BECOME MORE EXPENSIVE AS THE DOLLAR STRENGTHENS WITH HIGHER INTEREST RATES. ↓ NX

SO GOVERNMENT SPENDING CAUSES OTHER COMPONENTS OF GDP (INCOME) TO FALL – THEY ARE CROWDED OUT.

↑ G ↓ C, I, NX

[Handwritten scribbles]

DEFICITS, SURPLUSES, AND FEDERAL DEBT

THE FEDERAL BUDGET IS A STABILIZER.

AS A RECESSION OCCURS, TAXES FALL, AND AUTOMATIC TRANSFER PAYMENTS OCCUR.

THE OPPOSITE OCCURS WHEN THERE IS AN EXPANSION – TAXES INCREASE AND TRANSFER PAYMENTS FALL.

THUS, INCREASES IN GDP DON'T GROW TOO FAST OR FALL TOO FAST.

SHOULD THE FEDERAL BUDGET ALWAYS BE BALANCED?

X FEW ECONOMISTS BELIEVE THIS IS A GOOD IDEA. X

GOVERNMENT ACTION SHOULD TAKE PLACE TO COUNTER THE BUSINESS CYCLE. MEANING THAT AT TIMES DEFICIT SPENDING IS A GOOD IDEA AND A GOVERNMENT SURPLUS IS GOOD AT OTHER TIMES.

X NORMALLY IT SHOULD RUN A SMALL DEFICIT, SINCE THAT IS EXPANSIONARY AND KEEPS THE ECONOMY GROWING OVER TIME WITH LIMITED INFLATION.

THE TOTAL MOUNT OF TREASURY BOND OUTSTANDING IS THE NATIONAL DEBT.

IS IT A PROBLEM?

IT IS ONLY WHEN WE CANNOT MAKE THE PAYMENTS.

BUT THE GOVERNMENT CAN RAISE TAXES TO MAKE THE PAYMENTS.

INTEREST PAYMENTS ON THE DEBT CURRENTLY EQUAL ABOUT 10% OF FEDERAL EXPENDITURES.

2016 - 38% EXPENSES TO BE SIMILAR-2016 NOV 3 5%
TOTAL DEBT RUNS ABOUT 60-65% OF GDP. IT WAS ABOUT 40% IN 1980, AND INCREASED THROUGHOUT THE 1990'S.

THE PROBLEM CAN BE THE CROWDING OUT EFFECT.

TAX WEDGE

THIS IS THE FRACTION OF EACH ADDITIONAL DOLLAR OF INCOME THAT MUST BE PAID IN TAXES.

THE LOWER THE WEDGE – THE MORE OF EACH ADDITIONAL DOLLAR OF INCOME PEOPLE GET TO KEEP.

A LOW WEDGE MEANS MORE PEOPLE WILL WORK SINCE THEIR ADDITIONAL EARNINGS WILL NOT BE TAXED AS HIGHLY.

IT ENCOURAGES CORPORATE INVESTMENT.

2012 - ABOUT 2-3% of GDP
SINCE 1999 HIGHER
MARGINAL TAX RATES
INCOME TAX RATE

TAX SIMPLIFICATION

SIMPLIFYING THE TAX FORMS AND REDUCING THE COMPLICATED TAX CODE WILL REDUCE THE AMOUNT OF MONEY SPENT ON TAX PREPARATION AND ACCOUNTING COSTS THROUGHOUT THE YEAR.

GOING TO A SALES TAX, OR SINGLE TAX RATE ON ALL INCOME ARE OTHER IDEAS.

SEE VALUING TAXATION

Diff BETWEEN WHAT EMPLOYEES TAKE HOME & WHAT IT COSTS TO EMPLOY THEM, OR THE DOLLAR MEASURE OF THE INCOME TAX RATE

IT ↑ AS EMPLOYEE INCOME INCREASES, THIS REDUCES THE MARGINAL BENEFIT OF WORKING & THUS EMPLOYEES WILL SOMETIMES WORK LESS HOURS THAN IF NO TAX WAS IMPOSED.

WEDGE ON INVESTMENT REDUCES SAVINGS, LOWERS INNOVATION.

↑ INEFFICIENCY & CONSUMERS PAY MORE TO GET LESS. (HIGHER PRICE & LOWER QUANTITIES SOLD)



Belgium 55.6%

U.S. 30%

Mexico 15.6%

WEIGHTED AVE 37.3%

2001 0% OF GROSS EARNINGS GIVEN UP IN TAX-SINGLE WORKER.

SHORT RUN TRADE OFF BETWEEN UNEMPLOYMENT & INFLATION

IN CHAPTER 24 WE SAW THAT WHEN AGGREGATE DEMAND INCREASES, UNEMPLOYMENT USUALLY FALLS AND INFLATION RISES.

WHEN AGGREGATE DEMAND DECREASES, UNEMPLOYMENT USUALLY RISES AND INFLATION FALLS.

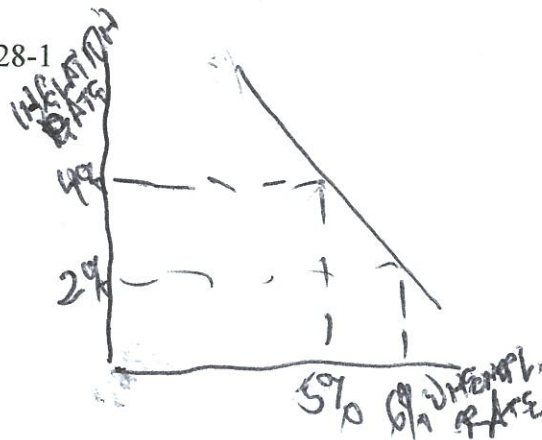
AS A RESULT, THERE IS A SHORT-TERM TRADE-OFF BETWEEN UNEMPLOYMENT AND INFLATION – HIGH UNEMPLOYMENT IS USUALLY ACCOMPANIED BY LOWER INFLATION AND LOWER UNEMPLOYMENT IS USUALLY ACCOMPANIED BY HIGHER INFLATION.

BUT THIS RELATIONSHIP DISAPPEARS IN THE LONG RUN.

PHILLIPS CURVE

THIS SHOWS THE RELATIONSHIP BETWEEN UNEMPLOYMENT AND INFLATION.

PAGE 498 FIGURE 28-1

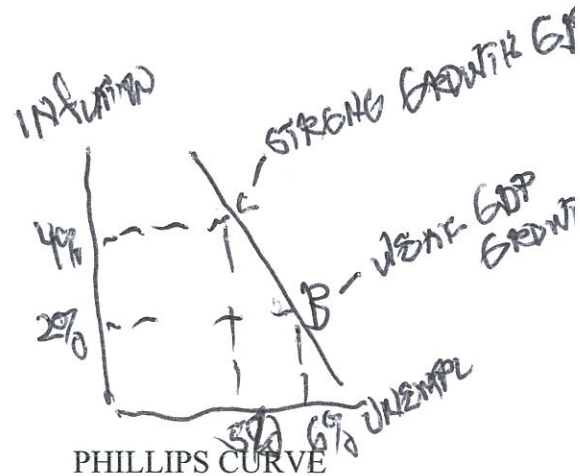
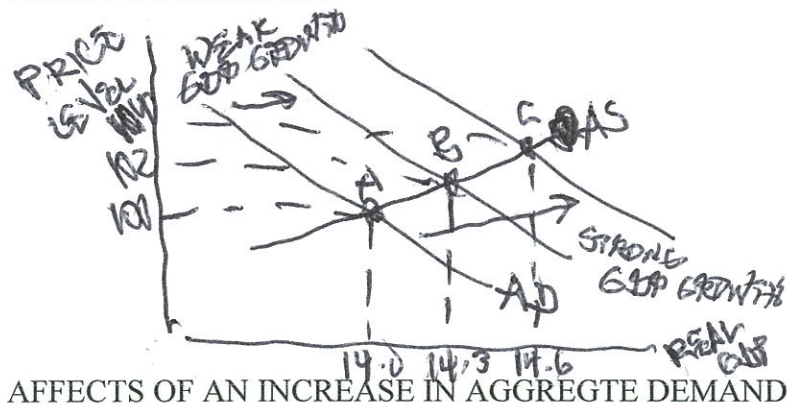


ECONOMIS A. W. PHILLIPS DOCUMENTS THIS TRADE-OFF.

EXPLAINING THE PHILLIPS CURVE WITH AGGREGATE DEMAND AND AGGREGATE SUPPLY CURVES

THE AD-AS MODEL INDICATES THAT SLOW GROWTH IN AGGREGATE DEMAND LEADS TO BOTH HIGHER UNEMPLOYMENT AND LOWER INFLATION.

PAGE 949 FIGURE 28-2



1. IF THERE IS ONLY A WEAK INCREASE IN AD, THE PRICE LEVEL AND REAL GDP INCREASES LESS THAN...
2. ...IF THERE IS A STRONG INCREASE IN AD.

THE ECONOMY IN 2011 IS AT POINT A, WITH GDP AT \$14 T AND PRICE LEVEL OF 100. IF THERE IS WEAK GROWTH IN AD, IN 2012 THE ECONOMY MOVES TO POINT B WITH REAL GDP AT \$14.3 T AND THE PRICE LEVEL AT 102. THE INFLATION RATE IS 2% AND UNEMPLOYMENT IS AT 6%, WHICH POINT B ON THE PHILLIPS CURVE.

IF THERE IS STRONG GROWTH IN AD, IN 2012 THE ECONOMY IS AT POINT C, REAL GDP AT \$14.6 T, AND THE PRICE LEVEL IS AT 104, INFLATION AT 4% AND UNEMPLOYMENT AT 5%.

IS THE PHILLIPS CURVE A POLICY MENU?

IN THE 1960'S, SOME ECONOMISTS ARGUED THAT THE PHILLIPS CURVE REPRESENTED A STRUCTURAL RELATIONSHIP, WHICH ASSUMES THAT THE BEHAVIOR OF CONSUMERS AND FIRMS REMAIN THE SAME OVER LONG PERIODS OF TIME..

THESE SITUATIONS ARE VIEWED GOOD FOR THE FORMATION OF ECONOMIC POLICY.

BUT ECONOMISTS CAME TO REALIZE THAT THE PHILLIPS CURVE DID NOT REPRESENT A PERMANENT TRADE-OFF BETWEEN INFLATION AND UNEMPLOYMENT.

IS THE SHORT-RUN PHILLIPS CURVE STABLE?

X IN 1968, MILTON FRIEDMAN AND EDMUND PHELPS SAID THAT IT DID NOT REPRESENT A PERMANENT TRADE-OFF.

THEY SAID THAT THE LONG-RUN AGGREGATE SUPPLY CURVE WAS VERTICAL.

IF THIS WAS TRUE, THE PHILLIPS CURVE COULD NOT BE DOWNWARD SLOPING IN THE LONG RUN.

THE LONG-RUN PHILLIPS CURVE

RECALL THAT IN THE LONG RUN, REAL GDP IS ALSO REFERRED TO AS *POTENTIAL REAL GDP* WHERE FIRMS WILL OPERATE AT THEIR NORMAL LEVEL OF CAPACITY AND EVERYONE WHO WANTS A JOB WILL HAVE ONE - EXCEPT FOR THE FRICTIONALLY AND STRUCTURALLY UNEMPLOYED.

X FRIEDMAN DEFINED THE **NATURAL RATE OF UNEMPLOYMENT** AS THE UNEMPLOYMENT RATE THAT EXISTS WHEN THE ECONOMY IS AT POTENTIAL GDP.

X IN THE LONG RUN, A HIGHER OR LOWER PRICE LEVEL HAS NO EFFECT ON REAL GDP BECAUSE REAL GDP IS ALWAYS AT ITS POTENTIAL LEVEL IN THE LONG RUN. X

THE ROLE OF EXPECTATIONS OF FUTURE INFLATION

IF THE LONG RUN PHILLIPS CURVE IS A VERTICAL LINE, NO TRADE-OFF EXISTS BETWEEN UNEMPLOYMENT AND INFLATION IN THE LONG RUN.

X IN THE SHORT RUN IT EXISTS, BUT ONLY BECAUSE WORKERS AND FIRMS SOMETIMES EXPECTED THE INFLATION RATE TO BE EITHER HIGHER OR LOWER THAN IT TURNED OUT TO BE. X

X DIFFERENCES BETWEEN THE EXPECTED INFLATION RATE AND THE ACTUAL INFLATION RATE COULD LEAD THE UNEMPLOYMENT RATE TO RISE ABOVE OR DIP BELOW THE NATURAL RATE. X

FOR EXAMPLE, SUPPOSE THAT FORD AND THE UAW AGREE ON A WAGE OF \$31.50 PER HOUR TO BE PAID DURING 2015. BOTH OF THEM EXPECT THE

PRICE LEVEL WILL INCREASE FROM 100 IN 2014 TO 105 IN 2015, SO INFLATION WILL BE 5%.

SO THEY CALCULATE THE REAL WAGE FORD EXPECTS TO PAY AS FOLLOWS:

REAL WAGE = NOMINAL WAGE/PRICE LEVEL $\times 100 = 31.50/105 \times 100 = \30

"INFLATION"
REAL WAGES
COMPARE WITH
WHAT IS
EXPECTED

BUT SUPPOSE THE ACTUAL INFLATION RATE TURNS OUT TO BE HIGHER THAN 5%.

AT 8%, REAL WAGE WOULD BE \$29.17. AT 2% IT WOULD BE \$30.88.

IF REAL WAGES ARE HIGHER THAN FORD EXPECTED, FORD WILL HIRE FEWER WORKERS THAN IT PLANNED TO.

IF REAL WAGES ARE LOWER, FORD WILL HIRE MORE WORKERS THAN PLANNED.

IF ACTUAL INFLATION IS HIGHER THAN EXPECTED, ACTUAL REAL WAGES IN THE ECONOMY WILL BE LOWER THAN EXPECTED REAL WAGES AND MANY FIRMS WILL HIRE MORE WORKERS THAN THEY HAD PLANNED TO HIRE AND THE UNEMPLOYMENT RATE WILL FALL. THE OPPOSITE WOULD HAPPEN IN ACTUAL INFLATION IS LOWER THAN EXPECTED.

CAUTION: HIGHER
SINCE REAL WAGE
WILL ↑ w
INFLATION

THUS, AN INCREASE IN THE INFLATION RATE INCREASES EMPLOYMENT ONLY IF THE INCREASE IN THE INFLATION RATE IS UNEXPECTED.

SHORT RUN AND LONG RUN PHILLIPS CURVES

HOW ARE THE SHORT RUN AND LONG RUN PHILLIPS CURVES RELATED?

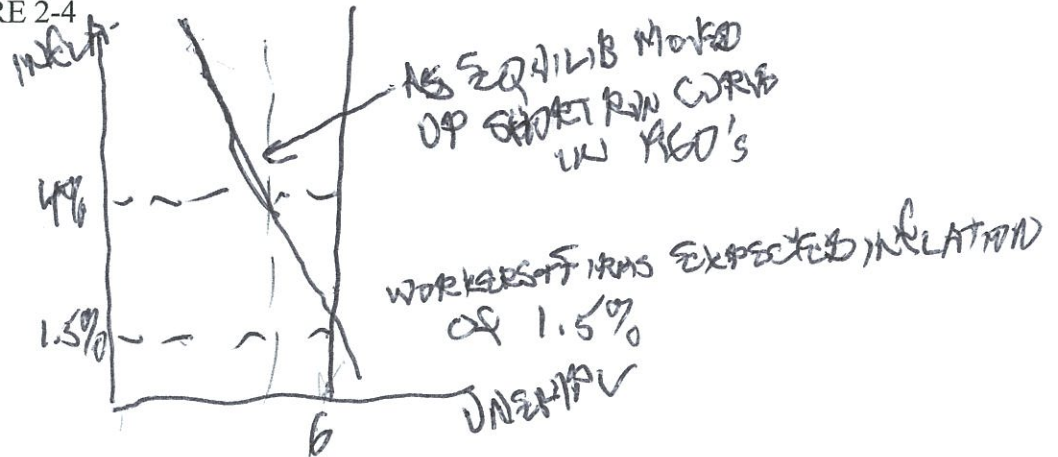
IN THE 1960'S WORKERS AND FIRMS EXPECTED INFLATION RATES TO BE ABOUT 1.5%, AS THEY HAD BEEN FOR A LONG TIME.

2.5% GREAT SOCIETY

BUT FISCAL POLICIES TO STIMULATE THE ECONOMY MOVED INFLATION TO 4.5% AND UNEMPLOYMENT RATE OF 3.5% - VERY LOW.

ONCE WORKERS AND FIRMS BEGAN TO EXPECT INFLATION RATES WOULD CONTINUE TO BE ABOUT 4.5%, THEY CHANGED THEIR BEHAVIOR, FEELING THAT IT WOULD TAKE WAGE INCREASES OF MORE THAN 4.5% TO INCREASE REAL WAGES.

ASSUMING
NO Δ IN
NOMINAL
WAGES



SHIFTS IN THE SHORT RUN PHILLIPS CURVE

ONCE THE INFLATION RATE BECOMES EMBEDDED IN THE ECONOMY, WORKERS, FIRMS, CONSUMERS, AND GOVERNMENT TAKE THE INFLATION RATE INTO ACCOUNT WHEN MAKING DECISIONS.

INCREASE WAGES – 4.5%

INCREASED UNEMPLOYMENT – 5% THE BECAME THE NATURAL RATE OF UNEMPLOYMENT.

BUT WITH INFLATION AT 4.5% INSTEAD OF 1.5%, IT WOULD TAKE 7.5% INFLATION TO GET UNEMPLOYMENT TO 3.5%.

HOW DOES A VERTICAL LONG RUN PHILLIPS CURVE AFFECT MONETARY POLICY?

BY THE 1970'S. MOST ECONOMISTS ACCEPTED THE ARGUMENT THAT THE LONG-RUN PHILLIPS CURVE IS VERTICAL

IT WAS NOT POSSIBLE TO BUY A PERMANENTLY LOWER UNEMPLOYMENT RATE AT THE COST OF PERMANENTLY HIGHER INFLATION.

THE MORAL IS THAT IN THE LONG RUN, THERE IS NO TRADE-OFF BETWEEN UNEMPLOYMENT AND INFLATION.

IN THE LONG-RUN, THE UNEMPLOYMENT RATE ALWAYS RETURNS TO THE NATURAL RATE, NO MATTER WHAT THE INFLATION RATE IS.

BUT THE NATURAL RATE DOES CHANGE OVER TIME DUE TO:

1. **DEMOGRAPHIC CHANGES** – YOUNGER AND LESS SKILLED WORKERS HAVE HIGHER UNEMPLOYMENT RATES THAN OLDER, MORE SKILLED WORKERS, WHO ARE LEAVING THE WORKFORCE – BABY BOOMERS.
2. **LABOR MARKET INSTITUTIONS** – INSTITUTIONS SUCH AS EXTENDED AVAILABILITY OF UNEMPLOYMENT COMP, UNIONS, AND LEGAL BARRIERS TO FIRING WORKERS CAN INCREASE THE UNEMPLOYMENT RATE.
3. **PAST HIGH RATES OF UNEMPLOYMENT** – IF HIGH UNEMPLOYMENT PERSISTS FOR A PERIOD OF YEARS, THE NATURAL RATE MAY INCREASE. IF WORKERS HAVE BEEN UNEMPLOYED FOR A YEAR OR TWO, THEIR SKILL DETERIORATE OR BECOME LESS USEFUL IN THE CHANGING WORKPLACE.

EXPECTATIONS OF THE INFLATION RATE AND MONETARY POLICY

HOW LONG CAN THE ECONOMY REMAIN AT A POINT THAT IS ON THE SHORT-RUN PHILLIPS CURVE BUT NOT ON THE LONG-RUN CURVE?

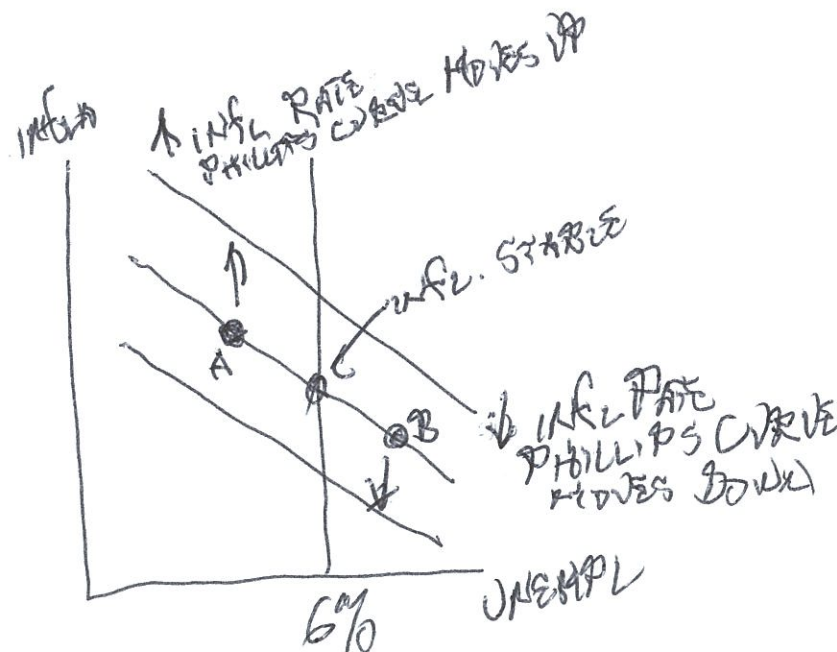
IT DEPENDS ON HOW QUICKLY WORKERS AND FIRMS ADJUST THEIR EXPECTATIONS OF FUTURE INFLATION TO CHANGES IN CURRENT INFLATION.

- **LOW INFLATION** – WHEN INFLATION IS LOW OVER LONG PERIODS OF TIME, WORKERS AND FIRMS IGNORE IT.
- **MODERATE BUT STABLE INFLATION** – PEOPLE ARE SAID TO HAVE ADAPTIVE EXPECTATIONS OF INFLATION IF THEY ASSUME THAT FUTURE INFLATION WILL FOLLOW PAST PATTERNS.
- **HIGH AND STABLE INFLATION** – IF THEY ASSUME THAT FUTURE INFLATION WILL FOLLOW PAST PATTERNS.
- **HIGH AND UNSTABLE INFLATION** – EXPECTATIONS FORMED USING ALL AVAILABLE INFORMATION ABOUT AN ECONOMIC VARIABLE ARE CALLED RATIONAL EXPECTATIONS.

THE EFFECTS OF RATIONAL EXPECTATIONS ON MONETARY POLICY

IF WORKERS AND FIRMS HAVE RATIONAL EXPECTATIONS, THEY WILL USE ALL AVAILABLE INFORMATION, INCLUDING KNOWLEDGE OF THE EFFECTS OF FEDERAL RESERVE POLICY.

IF WORKERS AND FIRMS KNOW AN EXPANSIONARY POLICY WILL RAISE THE INFLATION RATE, THEY WOULD USE THIS INFORMATION IN THEIR FORECASTS OF INFLATION.



IF THE FEDERAL RESERVE USES CONTRACTIONARY POLICY TO PUSH THE ECONOMY TO A POINT SUCH AS B, WHERE THE UNEMPLOYMENT RATE IS ABOVE THE NATURAL RATE, THE INFLATION RATE WOULD DECREASE.

IF THE ECONOMY REMAINED ABOVE THE NATURAL RATE LONG ENOUGH, THE SHORT RUN PHILLIPS CURVE WOULD SHIFT DOWN AS WORKERS AND FIRMS ADJUSTED TO THE NEW, LOWER, INFLATION RATE.

↓ WAGES & EMPLOY

ONLY AT POINT C, WHERE UNEMPLOYMENT IS EQUAL TO THE NATURAL RATE WILL INFLATION BE STABLE.

AS A RESULT, THE NATURAL RATE OF UNEMPLOYMENT IS SOMETIMES CALLED THE NONACCELERATING INFLATION RATE OF UNEMPLOYMENT.

THUS, IN THE LONG RUN, THE FD CN AFFECT THE INFLATION RATE BUT NOT THE UNEMPLOYMENT RATE.

↑
ONLY MARKET
FORCE CAN
Δ UNEMPLOYMENT

IF THEY DO, AN EXPANSIONARY POLICY WILL NOT CAUSE THE ACTUAL RATE TO BE ABOVE THE EXPECTED RATE.

unemployment

THUS THE ACTUAL WAGE RATE WILL EQUAL THE REAL WAGE, AND THE UNEMPLOYMENT RATE WILL NOT FALL BELOW THE NATURAL RATE.

IS THERE A POSSIBILITY THE FED COULD LOSE ITS INDEPENDENCE?

DURING THE 2007-2009 FINANCIAL CRISIS, MANY POLITICIANS FELT THE FED ACTED AT THE BEHEST OF THE ADMINISTRATION IN ITS ACTIONS TO SUPPORT THE STIMULUS PACKAGE AND THE BANK BAIL OUT.

THERE WERE MANY WHO FEARED THAT THE FED HAD LOST ITS INDEPENDENCE IN WORKING SO CLOSELY WITH POLITICAL LEADERS.

THE FEARS STEMMED FROM THE NEED FOR THE FED TO BE INDEPENDENT OF POLITICAL INFLUENCE SO THAT IT CAN FIGHT INFLATION – A TYPICAL PROBLEM IN COUNTRIES WITHOUT AN INDEPENDENT CENTRAL BANK.

MICROECONOMICS IN AN OPEN ECONOMY

CURRENT ACCOUNT – FLOWS OF FUNDS INTO AND OUT OF A COUNTRY.

INCLUDES IMPORTS AND EXPORTS OF:

- **GOODS AND SERVICES (NET EXPORTS)**
- **INCOME RECEIVED BY U.S. RESIDENTS FROM OVERSEAS INVESTMENTS (NET INVESTMENTS)**
- **DIFFERENCE BETWEEN TRANSFERS MADE TO RESIDENTS OF OTHER COUNTRIES AND TRANSFERS RECEIVED BY U.S. RESIDENTS FROM OVERSEAS (NET TRANSFERS)**

BALANCE OF TRADE

THIS IS THE DIFFERENCE BETWEEN THE VALUE OF GOODS A COUNTRY EXPORTS AND THE VALUE OF GOODS IT IMPORTS.

THIS IS THE LARGEST PART OF THE BALANCE OF TRADE.

IF A COUNTRY EXPORTS MORE THAN IT IMPORTS, IT HAS A TRADE SURPLUS.

NET EXPORTS EQUALS THE SUM OF THE BALANCE OF TRADE AND THE BALANCE OF SERVICES.

THE FINANCIAL ACCOUNT

THIS RECORDS PURCHASES OF ASSETS A COUNTRY HAD MADE OVERSEAS AND FOREIGN PURCHASES OF ASSETS IN THE COUNTRY.

CAPITAL OUTFLOW – WHEN INVESTORS IN A COUNTRY BUY A BOND ISSUED BY ANOTHER COUNTRY OR FOREIGN COUNTRY.

CAPITAL INFLOW – WHEN A FOREIGN RESIDENT BUYS A BOND ISSUED BY A COMPANY IN THE U.S OR THE U.S. GOVERNMENT.

CAPITAL OUTFLOWS MINUS CAPITAL INFLOWS = NET FOREIGN INVESTMENT.

CAPITAL ACCOUNT – THIS RECORDS TRANSACTIONS OF MIGRANTS WHICH THEY TAKE WITH THEM WHEN THEY LEAVE THE COUNTRY – GOODS AND FINANCIAL ASSETS. THIS IS USUALLY A MINOR AMOUNT.

WHY IS THE BALANCE OF PAYMENTS ALWAYS ZERO?

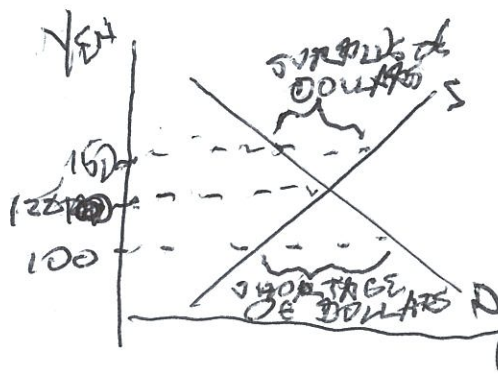
THE CURRENT ACCOUNT BALANCE + FINANCIAL ACCOUNT BALANCE + CAPITAL ACCOUNT BALANCE = BALANCE OF PAYMENTS

IT WILL OFTEN NOT EQUAL ZERO UNTIL THE STATISTICAL DISCREPANCY IS ADDED IN.

THE DISCREPANCY OCCURS BECAUSE NOT ALL TRANSACTIONS ARE MEASURED ACCURATELY.

EXCHANGE RATES

GRAPH PAGE 1013



NOMINAL EX. RATE - ONE CURRENCY'S VALUE IN TERMS OF ANOTHER CURRENCY

REAL EX. RATE - CORRECTS NOMINAL RATE FOR Δ 'S IN PRICES OF GOODS & SERVICES.

IT IS DETERMINED BY THE SUPPLY AND DEMAND FOR MONEY.

THIS IS A RESULT OF:

1. FOREIGN FIRMS AND HOUSEHOLDS WHO WANT TO BUY GOODS AND SERVICES IN THE U.S.
2. FOREIGN FIRMS AND HOUSEHOLDS WHO WANT TO INVEST IN THE U.S.
3. CURRENCY TRADERS WHO BELIEVE THAT THE VALUE OF THE DOLLAR IN THE FUTURE WILL BE GREATER THAN THE VALUE TODAY.

OPENING \$ IN U.S. ONLY (PAY TAKE BURLINGTON BUCKS)

DEMAND FOR THE DOLLAR COMPARED TO THE YEN.

DEMAND FOR THE DOLLAR IS DOWNWARD SLOPING.

WHEN THE VALUE OF THE DOLLAR IS HIGH, THE QUANTITY OF DOLLARS DEMANDED IS LOW.

JAPANESE INVESTORS WOULD RATHER BUY A TREASURY BOND WHEN THE EXCHANGE RATE IS 100 YEN/\$1 AND THE INVESTOR PAYS 100,000 YEN TO BUY A \$1,000 BOND THAN WHEN IT TAKE 150,000 YEN TO BUY THE BOND.

\$1,000

↑ JAPANESE BUY U.S. TREASURY BONDS
↓ JAPANESE SELL U.S. TREASURY BONDS

BUY OVERSEAS
IN U.S. MARKET
SELL OVERSEAS
IN JAPAN MARKET
CAPITAL FLOWS
IN TO U.S. FROM
JAPAN TO INVEST
TO INVEST

THE SUPPLY OF MONEY HAS AN UPWARD SLOPE.

WHEN THE VALUE OF THE DOLLAR IS HIGH, THE QUANTITY OF DOLLARS SUPPLIED IN EXCHANGE FOR YEN IS HIGH.

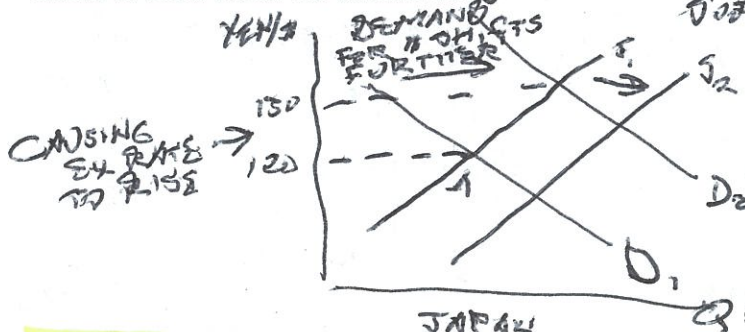
AT 200YEN/\$1, U.S. INVESTORS WILL BUY A 200,000 YEN BOND FOR \$1000 THAN A 100,000YEN BOND WHEN THE EXCHANGE RATE IS 100YEN / \$1.

SHIFTS IN THE DEMAND AND SUPPLY CURVES

CAUSED BY:

1. CHANGES IN THE DEMAND FOR U.S. GOODS AND SERVICES PRODUCED IN THE U.S.
2. CHANGE IN THE DESIRE TO INVEST IN THE U.S. COMPARED TO INVESTING IN OTHER COUNTRIES.
3. CHANGES IN EXPECTATIONS ABOUT THE FUTURE VALUE OF THE DOLLAR COMPARED TO OTHER CURRENCIES.

GRAPH BOTTOM OF PAGE 1015



DURING A RECESSION IN CHINA, INCOMES WILL FALL, REDUCING DEMAND FOR U.S. PRODUCTS SHIFTING THE DEMAND CURVE FOR DOLLARS TO THE LEFT.

IT IS SIMILAR IF INTEREST RATES FALL IN CHINA.

DURING A RECESSION IN THE U.S., DEMAND FOR CHINESE PRODUCTS WILL FALL AND SHIFTS THE SUPPLY CURVE FOR DOLLARS TO THE LEFT.

IT IS SIMILAR IF INTEREST RATES IN THE U.S. FALLS.

SOME EXCHANGE RATES ARE NOT SET BY THE MARKET

CHINA HAS FIXED EXCHANGE RATES WITH THE U.S., SETTING THE RATE AT 8 YUAN PER DOLLAR. THIS MAKES U.S. PRODUCTS EXPENSIVE FOR THE CHINESE AND CHINESE PRODUCTS CHEAP OF THE U.S.

PEOPLE WANT
SO \$ WILL
FLOW INTO THE
MARKET

SUPPLY OF \$ SHIFTS RIGHT

SAME, IF
INT. RATE
IN JAPAN

EXPANDED IN U.S.
AND FOR GOODS FROM JAPAN
THEY (U.S.) MUST SUPPLY
IN EXCH. FOR YEN
A SUPPLY OF \$ MUST
SUPPLY TO THEM

IF INT. RATE IN U.S. ↓
↓ IN INVESTMENT
FINANCIAL ASSETS
DEMAND FOR \$'S
SHIFTS LEFT

U.S.

JAPANESE

NET EXPORTS EQUAL NET FOREIGN INVESTMENT

WHEN YOU SPEND MORE THAN YOU EARN, YOU HAVE TO SELL ASSETS OR BORROW.

A COUNTRY WHO IMPORTS (SPENDS) MORE THAN IT EXPORTS (EARNS) HAS TO EITHER SELL ASSETS OR BORROW.

COUNTRIES SELL ASSETS BY SELLING LAND, BUILDINGS, OR FACTORIES.

THEY BORROW BY ISSUING GOVERNMENT BONDS.

WHEN COUNTRIES IMPORT MORE THAN THEY EXPORT, NET EXPORTS ARE NEGATIVE, AND THERE WILL BE A NET CAPITAL INFLOW AS PEOPLE IN THE U.S. SELL ASSETS AND BORROW TO PAY FOR THE SURPLUS IN IMPORTS OVER EXPORTS.

GOVERNMENT BUDGET DEFICITS AND INVESTMENT IN OPEN MARKET

$$\text{GDP} = C + I + G + \text{NX}.$$

FISCAL POLICY

IF CONSUMPTION IS DOWN, AND INVESTMENT IS DOWN, AND NET EXPORTS ARE NEGATIVE, THE ONLY SOURCE OF SPENDING IS THE GOVERNMENT.

THE GOVERNMENT DOES DEFICIT SPENDING – INCREASED SPENDING AND TAX CUTS.

TAX CUTS INCREASE DISPOSABLE INCOME WHICH SHOULD INCREASE CONSUMER SPENDING.

TO ATTRACT INVESTORS, THEY HAVE TO RAISE THE INTEREST RATES ON TREASURY BONDS, WHICH DRIVES UP OTHER INTEREST RATES AND SLOWS INVESTMENT AND CONSUMPTION AS PEOPLE SAVE MORE.

BUT IT DOES ATTRACT FOREIGN INVESTMENT

BONDS, WHICH DRIVES UP OTHER INTEREST RATES AND INVESTMENT AND CONSUMPTION AS PEOPLE SAVE MORE.

ES ATTRACT FOREIGN INVESTMENT?

POLITICAL ~~IN~~ STABILITY - ~~DECREASES~~ ^{INCREASES} TAX BASE
TAXES - NOT ALL ARE EFFICIENT
DISTURB MRP
COST TO COLLECT
DIFFICULT TO ADMINISTER.
EXCESS BURDEN - OVER LONG TERM
DEADWEIGHT LOSS
SVT
FLAT TAX ~~TO INCREASE~~

TAX BASE
INCOME
CONSUMPTION
WEALTH

MONETARY POLICY

THE FED EMBARKS ON AN EXPANSIONARY POLICY OF INCREASING THE MONEY SUPPLY BY BUYING TREASURY BONDS, LOWERING INTEREST RATES.

THIS HURTS FOREIGN INVESTMENT IN THE U.S.

LOWER VALUES OF THE DOLLAR WILL INCREASE EXPORTS.

YOU CAN SEE THAT FISCAL POLICY AND MONETARY POLICY HAVE TO BE COORDINATED TO BE EFFECTIVE.

EXCHANGE RATE SYSTEM

A COUNTRY THAT ALLOWS DEMAND AND SUPPLY TO DETERMINE THE VALUE OF ITS CURRENCY IS SAID TO HAVE A **FLOATING CURRENCY**.

SOME COUNTRIES TRY TO KEEP THE EXCHANGE RATE BETWEEN THEIR CURRENCY AND ANOTHER CURRENCY CONSTANT, LIKE CHINA DOES WITH THE U.S.

WHEN COUNTRIES CAN AGREE ON HOW EXCHANGE RATES SHOULD BE DETERMINED, ECONOMISTS SAY THAT THERE IS AN **EXCHANGE RATE SYSTEM**.

COUNTRIES OCCASIONALLY INTERVENE TO BUY AND SELL THEIR CURRENCY OR OTHER CURRENCIES TO AFFECT THE EXCHANGE RATES.

IN OTHER WORDS, THEY ARE TRYING TO **MANAGE THE FLOAT OF THEIR CURRENCY**.

WHEN THIS HAPPENS, THE EXCHANGE RATE SYSTEM IS KNOWN AS A **MANAGED FLOAT SYSTEM**.

UNDER THE GOLD STANDARD, EXCHANGE RATES WERE DETERMINED BY THE RELATIVE AMOUNTS OF GOLD IN EACH COUNTRY'S CURRENCY AND THE SIZE OF THEIR MONEY SUPPLY WAS DETERMINED BY THE AMOUNT OF GOLD IT HAD AVAILABLE.

TO RAPIDLY EXPAND ITS MONEY SUPPLY DURING A WAR OR ECONOMIC DEPRESSION, A COUNTRY WOULD NEED TO ABANDON THE GOLD STANDARD.

THE CONFERENCE AT BRETTON WOODS, NEW HAMPSHIRE, IN 1944 SET UP THE EXCHANGE RATE SYSTEM IN WHICH THE U.S. PLEDGED TO BUY OR SELL GOLD AT A FIXED PRICE OF \$35 PER OUNCE.

THE CENTRAL BANKS OF ALL OTHER MEMBERS OF THE BRETTON WOODS SYSTEM PLEDGED TO BUY AND SELL THEIR CURRENCIES AT FIXED RATES AGAINST THE DOLLAR.

6.31 RMB
¥
2.15
YUAN

SUGGESTION
BRETTON WOODS
U.S. CIVIL WAR
WORLD WAR
GREAT DEPRESSION
1913

DEBATE
COUNTRIES
TO GO TO
REQUIRE
U.S. RESERVE
1944
1971
DEPRESSION
BRETTON WOODS
GOV
↑ MONEY SUPPLY
↑ DEBT
↑ GREAT DEPRESSION
1971

THE CURRENCY EXCHANGE RATE SYSTEM

THE CURRENCY EXCHANGE RATE SYSTEM HAS THREE IMPORTANT ASPECTS:

1. THE U.S. ALLOWS THE DOLLAR TO FLOAT AGAINST OTHER MAJOR CURRENCIES.
 2. MOST COUNTRIES IN WESTERN EUROPE HAVE ADOPTED A SINGLE CURRENCY – THE EURO.
 3. SOME DEVELOPING COUNTRIES HAVE ATTEMPTED TO KEEP THEIR CURRENCIES' EXCHANGE RATES FIXED AGAINST THE DOLLAR OR ANOTHER MAJOR CURRENCY.
- 

IN 1973, THE VALUE OF THE U.S. DOLLAR FLUCTUATED WIDELY AGAINST OTHER MAJOR CURRENCIES.

WHAT DETERMINES EXCHANGE RATES IN THE LONG RUN

IN THE SHORT RUN, THE TWO MOST IMPORTANT CAUSES OF EXCHANGE RATE MOVEMENTS ARE

1. CHANGES IN INTEREST RATES
2. CHANGES IN INVESTORS' EXPECTATIONS ABOUT FUTURE VALUES OF CURRENCIES. *speculation*

THE THEORY OF PURCHASING POWER PARITY

IN THE LONG RUN, EXCHANGE RATES SHOULD BE AT A LEVEL THAT MAKES IT POSSIBLE TO BUY THE SAME AMOUNT OF GOODS AND SERVICES WITH THE EQUIVALENT AMOUNT OF ANY COUNTRY'S CURRENCY.

THE IDEA THAT IN THE LONG RUN, EXCHANGE RATES MOVE TO EQUALIZE THE PURCHASING POWER OF DIFFERENT CURRENCIES.

SUPPOSE A HERSHEY CANDY BAR COSTS \$1 IN THE U.S. AND 1 POUND IN ENGLAND, AND THAT THE EXCHANGE RATE IS \$1 = 1 POUND. THUS THE TWO CURRENCIES HAVE THE SAME PURCHASING POWER.

IF THE PRICE OF THE CANDY BAR INCREASES TO 2 POUND IN ENGLAND BUT STAYS AT \$1 IN THE U.S., THE EXCHANGE RATE WILL HAVE TO CHANGE TO 2

POUNDS PER \$1 IN ORDER FOR THE POUND TO MAINTAIN ITS RELATIVE PURCHASING POWER.

AS LONG AS EXCHANGE RATES ADJUST TO REFLECT PURCHASING POWER, IT WILL BE POSSIBLE TO BUY THE HERSHEY CANDY BAR FOR A \$1 IN THE U.S. OR TO EXCHANGE \$1 FOR 2 POUNDS AND BUY THE CANDY BAR IN ENGLAND.

IF EXCHANGE RATES ARE NOT AT THE VALUES INDICATED BY PURCHASING POWER PARITY, IT APPEARS THAT THERE ARE OPPORTUNITIES TO MAKE PROFITS.

SUPPOSE A HERSHEY BAR SELLS FOR 2 POUNDS IN ENGLAND AND \$1 IN THE U.S. AND THE EXCHANGE RATE IS 1 POUND = \$1.

IN THIS CASE, IT WOULD BE POSSIBLE TO EXCHANGE 1 MILLION POUNDS FOR \$1 MILLION AND USE THE MONEY TO BUY 1 MILLION CANDY BARS IN THE U.S. AND SHIP THEM TO ENGLAND AND SELL THEM FOR 2 MILLION POUNDS.

IN PRACTICE, HOWEVER, AS PEOPLE ATTEMPTED TO MAKE THESE PROFITS BY EXCHANGING POUND FOR DOLLARS, THEY WOULD BID UP THE VALUE OF THE DOLLAR UNTIL IT REACHED THE PURCHASING POWER EXCHANGE RATE OF 2 POUNDS = \$1.

THREE REAL WORLD COMPLICATIONS KEEP PURCHASING POWER FROM BEING A COMPLETE EXPLANATION OF EXCHANGE RATES, EVEN IN THE LONG RUN:

1. **NOT ALL PRODUCTS CAN BE TRADED INTERNATIONALLY** – WHEN THEY ARE NOT, THEIR PRICES WILL NOT BE THE SAME IN EVERY COUNTRY.
2. **PRODUCTS AND CONSUMER PREFERENCES ARE DIFFERENT ACROSS COUNTRIES.** – IF A PRODUCT IS SIMILAR BUT NOT IDENTICAL TO ANOTHER PRODUCT, THEIR PRICE MIGHT BE DIFFERENT.
3. **COUNTRIES IMPOSE BARRIERS TO TRADE** – TARIFFS AND QUOTAS WILL CHANGE PRICES.

BIG MACS CAN'T BE TRADED INTERNATIONALLY SINCE IT IS DIFFICULT TO SHIP THEM ANY DISTANCE BEFORE THEY BECOME A SOGGY MESS.

FOUR DETERMINANTS OF EXCHANGE RATES IN THE LONG RUN

1. **RELATIVE PRICE LEVELS IN VARIOUS COUNTRIES**
2. **RELATIVE RATES OF PRODUCTIVITY GROWTH** – IF COSTS OF PRODUCTION FALL, USUALLY THE PRICES OF THE PRODUCTS DO AS WELL.
3. **PREFERENCES FOR DOMESTIC AND FOREIGN GOODS** – THE GREATER THE PREFERENCE FOR A GOOD FROM DIFFERENT COUNTRIES, THE HIGHER THE VALUE OF THE COUNTRY'S CURRENCY
4. **TARIFFS AND QUOTAS** – THEY RAISE THE COST OF INGREDIENTS, DRIVING UP PRICES AND INCREASING THE DEMAND FOR A COUNTRY'S CURRENCY BY RESIDENTS WHO HAVE TO BUY HIGHER PRICED PRODUCTS.

THE EURO

THE SECOND KEY ASPECT OF THE CURRENCY EXCHANGE RATE SYSTEM IS THE SINGLE CURRENCY ADOPTED BY MOST WESTERN EUROPEAN COUNTRIES.

COMMON CURRENCY BEGAN IN 1999 AND THE EUROPEAN CENTRAL BANK (ECB) WAS ALSO ESTABLISHED WHICH HAS ASSUMED RESPONSIBILITY FOR MONETARY POLICY AND FOR ISSUING CURRENCY.

THE COUNTRIES USING THE EURO AND NOT ABLE TO PURSUE INDEPENDENT MONETARY POLICIES.

SIMILARLY, COUNTRIES COULD NOT ATTEMPT TO REVIVE THEIR EXPORTS BY ALLOWING THEIR EXCHANGE RATES TO DEPRECIATE BECAUSE:

1. **MOST OF THEIR EXPORTS ARE TO EURO-ZONE COUNTRIES**
2. **THE VALUE OF THE EURO IS DETERMINED BY FACTORS AFFECTING THE EURO-ZONE AS A WHOLE.**

BECAUSE MANY EURO-ZONE COUNTRIES EXPORT A SIGNIFICANT FRACTION OF GDP TO OTHER EURO-ZONE COUNTRIES, EXCHANGE RATE STABILITY HAS BEEN IMPORTANT TO THEIR ECONOMIC STABILITY. THUS, EUROPEAN COUNTRIES ARE RELUCTANT TO ABANDON THE EURO.

SAVINGS
ALLOWS COMPANIES TO
MOVE EXTERNAL
TO FUND COMPANY
EX. FARMERS TECH. DEV.
& HOUSEHOLD BORROWING
WE ARE ABOUT
20% GLOBALLY

CAPITAL MARKETS
STOCKS & BONDS - GOVT &
BUSINESS - ARE TRADED ON
CAPITAL MARKETS
3 MAJOR ONES ARE IN
NY, LONDON, TOKYO
OTHERS IN LATIN AMERICA
& EAST ASIAN PROPS

FOREIGN PORTFOLIO
OF U.S. STOCKS
& BONDS
U.K. 41%
AUSTRALIA 11%
EUROPE 11%
CHINA 11%
ASIA 11%
JAPAN 5%
ALL OTHERS 12%

INTERNATIONAL CAPITAL MARKETS

STOCKS, BONDS, LONG-TERM DEBT (CORPORATE AND GOVERNMENT BONDS) ARE BOUGHT AND SOLD IN CAPITAL MARKETS.

IMPROVEMENTS IN COMMUNICATIONS WORLDWIDE MAKE IT POSSIBLE FOR U.S. INVESTORS – AND INVESTORS EVERYWHERE – TO HAVE ACCESS TO TIMELY INFORMATION ABOUT FIRMS ALL OVER THE WORLD.

FOR MANY YEARS THE U.S. CAPITAL MARKETS WERE LARGER THAN ALL THE OTHER CAPITAL MARKETS COMBINED, THAT IS NO LONGER TRUE.

TODAY THERE ARE LARGE CAPITAL MARKETS IN EUROPE AND ASIA. THERE ARE ALSO SMALLER MARKETS IN LATIN AMERICA.

GLOBALIZATION OF FINANCIAL MARKETS HAS HELPED INCREASE GROWTH AND EFFICIENCY IN THE WORLD ECONOMY.

BUT GLOBALIZATION ALSO HAS A DOWNSIDE. BECAUSE FINANCIAL SECURITIES IN ONE COUNTRY ARE HELD BY INVESTORS AND FIRMS IN MANY OTHER COUNTRIES, IF THOSE SECURITIES DECLINE IN VALUE, THE FINANCIAL PAIN WILL BE WIDELY DISTRIBUTED – CONTAGION.

JOB LOSS
↓ NAT'L COMPETENCE
↓ STD'S OF LIVING

WE HAVEN'T
1. HAD TO COMPETE SINCE 1991 (USSR FALLEN)
2. NO SPUTNIK MOMENTS
3. < 1% IN MILITARY - OUTSOURCED
NAT'L SENSE OF SACRIFICE