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I. Financial Market Indicators

- **Stock Market Indicators** -
 - DJIA – price wgted + 30 stocks + acct for 20% of market capitalization
 - calculation – sum of prices / divisor adjusted over time for splits / et al
 - S&P 500 – market wgted + 500 largest traded stocks + accts for 75% market cap
 - Nasdaq – market wgted + 3800 (over the counter) stocks
 - S&P 500 Futures – traded 24 hrs (most important overnight) + ~ predicts opening of markets + only settles 4 times / yr + most liquid asset in US
- **Bond Market Indicators** -
 - issuers -
 - Treasury – issued by US Gov't + liquidity / (almost) default free
 - ◆ finances 3.2T of US marketable debt (non-marketable ~ 3.2 T; Total US debt ~ 6.4T)
 - ◆ T-bills – maturity of ≤ 1 yr + 10,000 par + no coupon payment
 - ◆ T-Notes – matory ~ 2,5,10 + 1,000 par + semi-annual coupon
 - Federal - issued by Fed agency
 - Muni – Issued by state / local gov't
 - Corporate – issued by corp + anything below BBB or Baa is speculative
 - indicators -
 - Yield on 10 yr note ~ key investment reference
 - Yield Curve – Yield (10 yr Note – 3 month bill)
 - ◆ important b/c impacts bond investment + sets opportunity costs of other investments
- **Fundamentals & Econ News** –
 - stocks – CF + TV discounted at appropriate rate (CAPM)
 - bonds – CF discounted at appropriate rate (alt investments + inflation expectations – but remember we are only concerned with expected future inflation rates (not what we encounter at any given time))

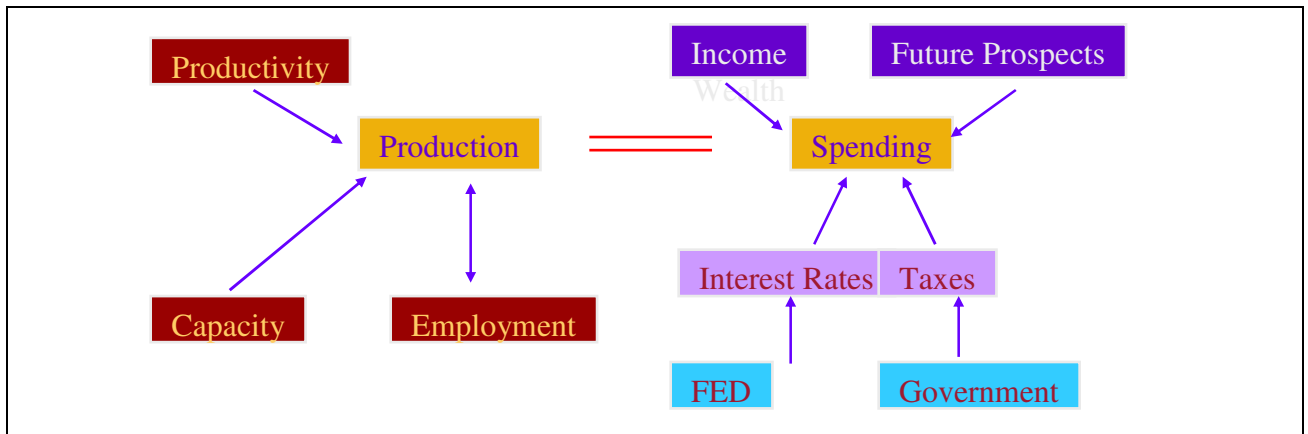
II. Macroeconomic Indicators

- **Rules of analysis**
 - seasonal adjustments – look at seasonally adjusted data OR year over year comparisons
 - constant prices – separate effects of inflation
- **GNP** – production by citizens of a country (located anywhere)
 - $GNP = GDP + \text{net foreign payments (NFP)}$
 - $\text{Disposable personal income} = GNP + \text{Gov't Transfers (TR)} + \text{Int on Gov't Debt} - \text{Taxes}$
 - $\text{Net Gov't Income} = \text{Taxes} - \text{Gov't Transfers (TR)} - \text{Int on Gov't Debt}$
- **GDP** – production w/i country
 - generally – most complete source of economic data + measures total goods / services produced during given period + advance numbers subject to large revisions + challenge is measuring services + effect of release is mitigated by prior availability of component numbers
 - releases ~ quarterly → 3 instalments ~ advance + preliminary + final
 - measures –
 - **Production** (value of goods / services produced) -
 - **Income** (generated by production of new goods) -
 - **Spending** – standard way of calculating
 - ◆ Consumption
 - ◆ Private Investment - spending on capital goods + inventory accumulation
 - ◆ Gov't Purchases
 - ◆ Net Exports
- **National Saving & Wealth** –
 - **National Wealth** - a stock variable measuring the amount of resources accumulated at a specific time
 - driven by – domestic assets + net claims on foreign assets
 - **National Saving** - flow variable measuring increase in National Wealth during given period
 - = National Income – National Consumption
 - = $Y + NFP - C - G$
 - = $GNP - C - G$
 - driven by – investment + acquisition of foreign assets (~ current account = $NX + NFP$)
- **Business Cycles** –
 - historically - Pre-WWI (growth) + Depression + WWII (dramatic expansion) + post WWII (smaller fluctuations)
 - **recession** –
 - technically - decline in O/P, income, emp, trade usually lasting from 6 mos – 1 yr & marked by widespread contractions in many sectors of economy
 - commonly – 2 consecutive quarters of negative GDP growth
 - determined by Nat'l Bureau of Econ Research (can take yrs to determine when it ended)

III. Macroeconomic Analysis

- **Overview** -
 - $\text{Production (Y)} = \text{Spending (C + I + G + CA)}$
 - $\text{Aggregate Supply} = \text{Aggregate Demand}$
- **Macroeconomic relations** -
 - **Production (Supply)** -
 - **function** ~ technology * inputs (labor + productive capacity (capital + utilization of capacity))
 - **Spending (Demand)**
 - **function** ~ $C + I + G + NX$
 - ◆ **Consumption** ~ income / wealth + consumer confidence + interest rates + taxes
 - ◆ **Investment** ~ expected future revenues / π + interest rates + taxes
 - ◆ **Gov't spending** ~ politics
 - ◆ **NX** Net exports / Current Account ~ imports (domestic demand + \$ strength) + exports (foreign econ + \$ strength)

- Aggregate Supply Curve – horizontal in SR (prices are fixed) + vertical in LR (firms constrained by normal productive capacity)
- Aggregate Demand Curve – negative slope

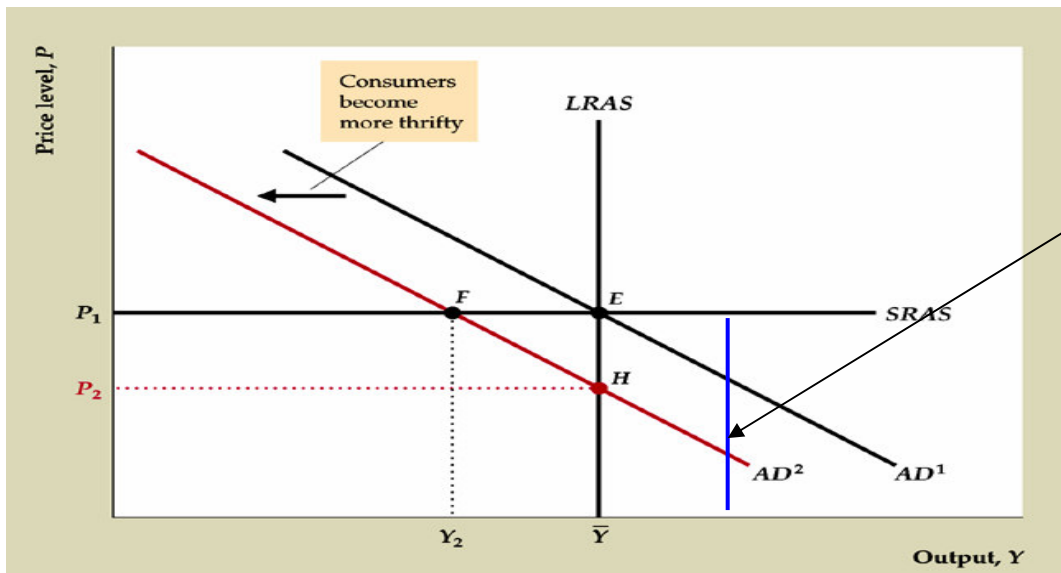


- **Macro-economic policy** –

- Fiscal Policy – Federal, state, local budgets ~ mainly the federal budget
- Monetary Policy – Central Bank sets ST rates → affects cost of credit / consumption / investment
- RoT
 - stimulate spending in recession
 - control spending to mitigate inflation

- **remember** -

- in long run – only effect on growth is from (i) productivity + (ii) productive capacity (taxes, etc. are irrelevant)
- in short run – exact opposite → common wisdom ~ spend way out of recession
- growth goal ~ shift demand curve out (b/c more demand = more supply) – also see chart at Figure 4.2 in notes



Any cut in $C + I + G + NX$ reduces Aggregate Demand

Inflation??

IV. Production

- **Formula** ~ $Y = A * F(K, N)$ [where Y = production; A = measure of productivity; K = capital; N = Labor]
- **Determined by** –
 - inputs

- productive capacity ~ capital + capacity utilization
- labor ~ workers + avg hrs worked
- other ~ raw materials, energy (BUT no good measures)
- production – no good indicator of production services

- **Indicators** -

- annual – GDP production data by industry

- quarterly – spending data

- **productivity**

- ◆ **theory** -

- > avg labor productivity = Y / N = output / number of workers (available every Qtr)

- > proxy –

- given that $Y = \text{productivity} * \text{labor} \rightarrow g_{\text{GDP}} = g_{\text{productivity}} + g_{\text{labor}}$

- so $\rightarrow g_{\text{productivity}} = g_{\text{GDP}} - g_{\text{Labor}}$

- ◆ **labor productivity** –

- > released by BLS 6 weeks after qtr (only after GDP is released)

- > measures – non-farm + business (excludes gov't & non-profits) + manufacturing

- > note – questionable veracity due to inability to measure services

- monthly –

- **direct measure** =

- ◆ **Industrial Production Index (IPI)** ~ sectoral measure

- > released by Fed 2 weeks aft mo end

- > components ~ mfr (85% - including auto ~ 5%) + mining & utilities (small)

- > note – industrial production ~ 20% of GDP (services makes up 70% + more cyclical than overall GDP + large spillovers to services / construction industries (?))

- **indirect measures** ~

- ◆ **employment** –

- > key metrics – employment (most relevant b/c early / frequent) + avg hrs worked

- > Reports

- Establishment Survey – published by BLS ~ first Fri of month

- only counts number of jobs (no unemployment rate)

- note – covers 48M people (1/2 work force) + very accurate (mean revision ~ 40k) + good early indication of health of economy + double counting possible (no diff b/w full / part-time) + excludes farm & SE

- Key Metrics

- payroll employment – avg monthly growth ~ 200K (unless in recession)

- avg workweek ~ 34.1 in last 6 mos + includes overtime mfr data

- Household Survey –

- note – counts workers (not jobs) + covers entire adult (+16) population + includes farm & SE + small sample makes less representative BUT high media impact + other countries ask different questions + by mail (excludes homeless) + labor force is procyclical / unemployment is lagging + most unemployment is short

- Key Metric – **unemployment** ~ # unemployed / labor force

- employed – working part / full time / on vacation / on sick leave

- unemployed – did not work in past week but looked during last 4 weeks

- not in labor force – did not work in past week + did not look in past 4 weeks

- Initial Jobless Claims

- reported every Thursday by Employment and Training Agency

- measures claims for state unemployment

- Key Metric ~ new claims

- Note – weekly data is very noisy → use 4 week moving avg

- cons – misses many unemployed (after 6 mos + those who quit)

- > Forecasting –
 - i) collect long series of data (get original data / not revised) –
 - payroll + unemployment + hrs worked + avg earnings
 - ii) compare to market reaction (5 minute response) at data release (relative to consensus forecast)
 - construct regression equation → $\text{Payroll} = a + b \cdot \text{PMI} + c \cdot \text{Jobless Claims} + \dots$
 - e.g., $\text{Bond Yield} = a + b(\text{payroll} - \text{payroll consensus})$
 - iii) note how much market changed
 - note – lots of correlation b/w PMI & payroll empmt over time (but volatility in ST due to low #'s in PMI)
- > interpretation
 - employment growth – mixed for stocks (could signal growth / inflation) + bad for bonds (for either growth or inflation)
 - wage growth – bad for both (inflation + reduces firm profits)
- ◆ **capacity utilization** –
 - > released by Fed (w/ IPI)
 - > measures use of plants / machinery in industry
 - > calculation – capacity (look @ plant availability and capacity) + utilization (~ energy usage & industrial production)
 - > interpretation –
 - if employment up and IPI down → shift to service econ
 - if utilization up → inflationary risk = up
- ◆ **factory orders** – data on new & unfilled orders, shipments, inventories
 - > released by Census (Adv = 3 weeks; Final = 1 mo later)
 - > note – new durable orders ~ vary volatile + non-defense orders ~ less random / smaller + separate transportation ~ distorted by large aircraft orders
- ◆ **ISM Survey** –
 - > released by Institute of Supply Mgmt on first day of month
 - > key data – new orders + production + employment + supplier deliveries + inventories + Prices
 - > note – survey of 400 mfr cos + amts NOT weighted + only real value is early release + real use is trying to forecast employment + assumes services expand & market follows whole econ
 - > key # = PMI →
 - < 43 = recession
 - 43 >> 50 = economy expands BUT mfr shrinks
 - > 50 = mfr expansion
- ◆ **housing starts / permits** –
 - > released by census 3 weeks after mo end
 - > note – good indicator of construction strength + leading indicator of econ b/c sensitive to int rates & future econ prospects
- **remember** –
 - production indicators are good indicator of overall economy - high production = high expected sales
 - higher production is good for stock BUT bad for bonds b/c of inflation fears
 - higher productivity is good for both stocks (higher growth ~ better return) and bonds (means lower K_k b/c lower inflation risk)

V. Inflation

- **Wages** –
 - $\text{inflation} = \text{growth}_{\text{wages}} - \text{growth}_{\text{productivity}}$
 - consider
 - $\text{revenues} = P \cdot \text{output (Y)} = \text{costs} \cdot \text{mark-up}(m) = \text{wages (W)} \cdot \text{number of workers (N)} \cdot m$
 - $P = m \cdot w / (Y/N) = m \cdot W \cdot (N/Y)$ [where $N/Y = \text{reciprocal of labor productivity (Y/N)} - \text{i.e., same as dividing by it}$]
 - productivity growth reduces inflation + wage growth fuels inflation
 - Key Metrics ~

- **Establishment Survey** ~ avg hrly earnings + avg weekly earnings
 - ◆ note – is wage only data + only includes production / non-supervisory personnel
- **Employment Cost Index** –
 - ◆ published by BLS 4 weeks after Qtr
 - ◆ note – includes regular / overtime / non-wage data + best estimate of true wage costs

VI. Consumption & Savings

• Relevant numbers

- Personal Consumption Expenditures (BEA + monthly / qtrly)
 - includes – non-durables (30%) + durables (15%) + services (55%)
 - excludes – construction
 - remember –
 - ◆ volatility is driven by durables
 - ◆ does not cause recessions; merely worsens recessions
- Personal Income Report (BEA + monthly measure of GDP)
 - components – wages / other labor income + capital income (proprietor / rental / dividends / net int payments)
 - remember
 - ◆ **personal savings rate** = disposable personal income – personal consumption income
 - ◆ production generates income
 - ◆ little info beyond personal savings rate
- Retail Sales (Census Bureau + mid month) –
 - includes – survey data from Dept / food stores + eating / drinking establishments + auto dealers
 - remember
 - ◆ good forecast of consumption (**but excludes services**)
 - ◆ key benefit is retail sales excluding autos (since auto info available earlier)
- Auto Sales (BEA + start of month) –
 - remember –
 - ◆ accounts for 1/3 of durables + is very volatile
 - ◆ good indicator of consumer confidence
 - ◆ sensitive to interest rates
- Index of Consumer Confidence (U of M + mid month)
 - remember - early release (250) + final release (500) + fee based + noisy
- Consumer Confidence Index (Conf Board + month end)-
 - remember – later but larger sample (3500) + noisy (so look at trend)

• Forecasting

- current consumption = retail sales + auto sales
- future consumption = consumer confidence indices
- market reaction – data is generally too late (other than retail sales)
 - consumption – mixed stocks / hurts bonds
 - consumer confidence – good stocks / none bonds

VII. Private Investment

• Relevant Numbers -

- Durable Goods (Census + 25th month + leading) –
 - Key number = new orders of non-defense capital goods (excluding aircraft)
 - survey of mfr data (5000 mfrs = 60% of total) –
 - ◆ considers shipments + inventories + **new orders** (key # b/c re future) + unfilled orders
 - remember

- ◆ also included in factory orders released later
- ◆ focus on non-defense capital goods
- ◆ defense spending <> part of private investment

- Construction Spending (Census + month end) –
 - includes – private (residential & improvements / non-residential) + public (educ / highways / ...)
 - remember –
 - ◆ non-residential construction tracks fixed business investments
 - ◆ limited impact on market b/c too late
- Housing Starts (Census + monthly)
 - includes – permits + starts + completions
 - key numbers = permits + starts
 - remember
 - ◆ permits not required in all areas
 - ◆ starts occur .7 to 1.6 mos after permit issued
 - ◆ completion occurs 6.2 to 9.6 mos after start (forecasts investment 2-3 Qtrs ahead)
 - ◆ best indicator of future residential investment
- Business Inventories / sales (Census + 1.5 mo later) –
 - includes – inventories + sales (in 3 sectors – mfr / wholesales / retail trade)
 - key variable = inventory / sales ratio (but distinguish b/w planned / unplanned inventories)
 - ◆ ratio leads economy
 - remember
 - ◆ small market reaction to overall # b/c data already available

- **Forecasting**

- recessions usually led by drop in private investment
- fixed investment – less effect b/c of volatility (but look for trends)
 - stocks good / bonds none (adds to productive capacity and spending)
- inventories – less reaction b/c late (unless surprise in I/S ratios)

- **remember**

- includes anything that adds to productive capacity
- **most important part (about 1/6) of GDP** + most volatile component of spending
- drop in investment causes recessions
- negative inventory (means we are accumulating)

VIII. Government Spending and Finance
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- **Relevant numbers**

- government debt – half is held by public
- budget deficit (Treasury / monthly + BEA / qtrly NIPA accts + CBO / policy & projection) –
 - calculated as – outlays – revenues (Oct 1- Sept 30)
 - On-budget – typically deficit
 - Off Budget (SS) – typically surplus
- revenues –
 - includes – individual / corporate income taxes + social security taxes + other taxes
- outlays -
 - discretionary spending (annual appropriation) – Defense (trending down / untouchable) + non-defense (3-4% of GDP)
 - mandatory spending (entitlements + automatic spending) – CBO provides 10 yr outlook in January
 - net interest payments

- **Fiscal Policy issues** –
 - effect on spending / demand ~ gov't purchases of goods / services + tax cuts stimulate consumption
 - effect on production / supply ~ gov't infrastructure investment improves productivity + incentive effect of tax code
 - remember – easier to stimulate LR economy through supply side
 - ST problems – lack of flexibility (discretionary spending is small / GDP) + implementation lag
 - conclusion – fiscal policy = better for LR planning
 - Automatic economic stabilizers → deficit becomes countercyclical
- **Social Security**
 - SSA Report (March)
 - includes – OASI + DI
 - problem = Paygo – benes linked to population growth (not prior contributions)
 - solution – increase contribution OR decrease benefits OR earn higher return on Fund assets
- **Remember** –
 - deficit / GDP is still small (net outlays / GDP ~ 20% is small)
 - G is big BUT argument against using fiscal policy to manage economy = discretionary spending is so small anyway
 - high savings is bad in the intermediate term b/c ~ less demand / takes out of economy

IX. Money, Inflation, Interest Rates

- **Relevant numbers** –
 - Money Supply -
 - includes
 - ◆ M1 – currency + checking deposits = \$1.2T
 - ◆ M2 – M1 + small denom accts (savings / mm) = \$5.8T
 - changes in supply
 - ◆ to increase money base (a liability of CB) → CB purchases bonds
 - ◆ to decrease → CB sell bonds
 - effect on bonds - increased money supply →
 - ◆ i) reduces ST treasuries + increase P of ST treasuries + lowers yields
 - ◆ ii) reduces LT yields as effect spreads
 - ◆ iii) stock P rise in reaction to lower bond yields
 - Fed Funds Rate –
 - it is a “target”
 - reserve requirements (banks meet every 2 weeks) set the Fed Funds rate b/c banks trade their unused reserves overnight at a rate they set (~ FF rate)
 - CB buys bonds to lower the rate (this increases the money supply)
- **inflation**
 - Consumer Price Index (BLS + 15th month)
 - **key numbers** –
 - ◆ CPI-U – P paid by urban consumers + reference for \$, contracts, et al
 - ◆ Core CPI – excludes food / energy from CPI-U (volatility)
 - remember
 - ◆ 23,000 retail establishments in 87 urban areas
 - ◆ replicates basket of all goods / services used by consumers
 - ◆ overstates inflation by ~ 1% / yr (quality adjustment + substitution biases) → increase in real income is understated and budget deficit is inflated due to \$ payments
 - Producer Price Index (BLS + 2 days before CPI)
 - indices – finished goods + [intermediate goods + crude goods] (~ info in intermediate commodity reports)
 - **key number** – finished goods (or wholesale P index) – w/ focus on core inflation
 - excludes – imported goods / services
 - remember –
 - ◆ is avg of Ps paid by domestic producers

- ◆ survey = 40,000 establishments

- GDP & Consumption (PCE) Deflators
 - con – GDP only available qtrly
- Indirect Measures – import / export P + commodity P / indices + wage earnings + employment cost index

- **Monetary Policy**

- Fed's two roles – regulate fin markets + decide \$ policy / supply
- FOMC decisions – Target FF rate + Risk assessment + discount rate + how voted + explanatory stmt
- forecasting Fed moves
 - Taylor Rule $\sim i = 0.02 + \pi + 0.5(Y - Y^*)/Y^* + 0.5(\pi - 0.2)$ ← inflation
 - where i = FF rate; π = inflation rate over last 4 qtrs; Y = GDP; Y^* = Full empmt
 - takes 4-5 months for some effect (16-20 months for full effect)

- **Remember**

- money supply ~ backed by gold / public debt / foreign exchange reserves
- Balance Sheet Accounting
 - Central Bank – $A = \text{Govt Debt} + \text{Foreign Currency Reserves} + \text{Gold}$; $L = \text{Money Base} + \text{Net Worth}$
 - Banking System – $A = \text{Bank Reserves} + \text{Loans} + \text{Gov't Debt}$; $L = \text{Deposits} + \text{Net Worth}$
- gold standard restricted inflation
- inflation ~ effect = more money than goods + \$ supply > \$ demand + CB prints too much + \$ are less valuable

X. Macroeconomic Analysis

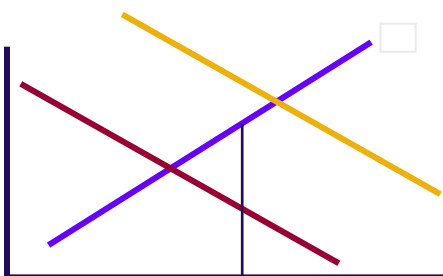
- **Relevant Numbers -**

- Key equation – Production = Spending = $Y = C + I + G + NX = \text{Aggregate Supply} = \text{Aggregate Demand}$
- Aggregate Supply (Y) = $F(A, K^*u, E^*h) = F(A, N)$ simplified = $Y^* + b * (P - P^*)$
 - Key numbers –
 - ◆ Installed productive capacity $\sim K$ (Business structures / equip) + u (utilization)
 - ◆ $N \sim \text{labor} \sim E$ (Payroll) + avg workweek (h)
 - ◆ $N^* \sim \text{full employment} \sim \text{where unemployment rate} = \text{natural rate}$
 - ◆ $A \sim \text{productivity}$
 - ◆ $Y^* \sim \text{potential output corresponding to full empmt} + \text{essentially driven by productivity growth}$
 - ◆ $P^* \sim \text{normal / expected inflation}$
 - remember –
 - ◆ K is difficult to change in ST + u is closely linked to labor
 - ◆ expansion v. contraction – half is above / below growth path
 - ◆ supply curve (AS) moves with productivity growth (b/c avoids pressure on P_s) → Y^* moves
 - ◆ AS is upward sloping
- Aggregate Demand (Y) = $C + I + G = C^* + I^* + G + b * (M/P - m^*)$ (w/ pt being C is linked to int & liquidity)
 - Key numbers
 - ◆ C – consumption = $C^* - c * (r - r^*)$ (with pt being that higher interest (r) reduces demand)
 - ◆ I – investment = $I^* - i * (r - r^*)$
 - ◆ G – gov't spending
 - ◆ liquidity ($M / P = \text{money relative to } P$) = $-d * (M/P - m^*) = r - r^*$
 - remember
 - ◆ higher interest rates impact demand
 - ◆ consumption is linked to interest & liquidity
 - ◆ AD curve moved by higher consumption / investment + more gov't spending + higher confidence + expansionary \$ / fiscal policy
 - ◆ AD curve <> linear

- Remember –
 - key questions –
 - impact on stocks & bonds
 - fundamental responses to econ conditions - 1st ½ of class
 - what determines macroeconomic conditions ~ demand + supply shocks
 - AD v. AS
 - intersection ~ s/b at Y* full employment
 - in LT → AS m/b at Y* (or vertical)
 - moving AS out takes longer than moving AD out

XI. Business Cycles

- Relevant Numbers –
 - index of leading indicators (Conference Board + monthly)
 - key numbers (heavier weight) – index consumer expectations + S&P 500 index + M2 stock + 10 yr note – FF rate spread
 - remember
 - ◆ multiple declines ~ recession
 - Demand Shocks ~ demand recession
 - key numbers
 - ◆ leading indicators – consumer confidence + housing starts + durable orders + stock market indices
 - ◆ confirming indicators – payroll drops + unemployment up + weak GDP + falling core CPI
 - remember
 - ◆ crisis in consumer confidence = popular view of recession
 - ◆ caused by –
 - > 1990 (consumer pessimism + credit crunch)
 - > 1981 (radical change in monetary policy + Fed fights inflation)
 - > 1929 (collapse of stock market & stock market + passive fiscal policy + int'l trade collapse)
 - > usually (lack of confidence & restrictive \$ policy)
 - ◆ solved by – fiscal (increase spending / tax cuts) + monetary (int rate cuts)
 - ◆ over when – demand recovers OR economy adjusts (works off excess inventory)
 - ◆ fiscal policy is inflexible; \$ policy takes too much time
 - ◆ most recessions are now very short
 - Supply Shocks ~ supply recessions
 - key numbers
 - ◆ leading indicators – commodity prices
 - ◆ confirming indicators – payroll down + unemployment up + weak GDP growth + rising core CPI
 - remember
 - ◆ caused by – low productivity (high production costs) + collapse in available capacity + oil P rise
 - ◆ dilemma - demand side stimulus does not help → expansion causes inflation / fighting inflation worsens recession
 - ◆ over when – economy adjusts to lower level of efficiency + full employment falls
 - ◆ more classical view of business cycles
 - ◆ stagflation – recession + high inflation
 - ◆



XII. Balance of Payments

• Relevant Numbers

- Balance of Payments (BEA + Qtrly) –
 - $CA = -KFA \rightarrow CA + KFA = 0$ (b/c US \$ are also US assets)
- Trade Balance (6 weeks after mo end)
 - is key component of BoP
- Current Account –
 - **key numbers** –
 - ◆ net exports of goods / services (“trade balance”) = merchandise + services (tour, transport, insurance)
 - ◆ investment income – div + bond interest
 - ◆ net unilateral transfers of goods – foreign aid / gifts / etc.
 - remember
 - ◆ exports = CR; imports = DR
 - ◆ surplus \rightarrow domestic production > domestic spending
 - ◆ position = influenced by
 - > **i)** int’l competitiveness - relative P import / export / domestic goods + exchange rate fluctuations + fact that quantities are inelastic in short run
 - > **ii)** domestic output – influence of income growth on consumption
 - > **iii)** foreign output -
- Capital & Financial Account –
 - **key numbers** –
 - ◆ capital account – net unilateral transfers (~ negligible)
 - ◆ financial account –
 - > private int’l purchases / sales of assets -
 - > official reserves (“official settlements balance” / “balance of payments”) = assets held by CB
 - > US gov’t assets (small)
 - remember –
 - ◆ increase foreign reserve of foreign assets = debit (-)
 - ◆ position = influenced by
 - > expected returns on int’l investments
 - > high domestic returns
 - > high foreign returns
 - > expected increase in value of currency
- Official Settlement Balance ~ non-official transactions $(CA + KFA^{\text{private}}) = -OSB = BP$

• Remember –

- Accounting – CR (+) = revenue; DR (-) = expenditure
- sustainability of deficit – large deficit implies strong foreign confidence on US b/c foreign held \$ funds are claim on national wealth
- consider if foreign funds used productively enough to generate $RoR > CoC$
- if surplus in goods \rightarrow m/b deficit in financial flows
- Imports + Y = C + I + G + Exports
- $Y = C + I + G + Exports - Imports$

XIII. Exchange Rates

- **Relevant Numbers** –
 - nominal exchange rates – rate at which 2 currencies are traded
 - e_{nom} – units of foreign currency c/b purchased w/ one USD
 - real exchange rates – number of foreign goods c/b purchased with one domestic good
 - $P^* e_{nom} / P_f$ = relative P of domestic goods ~ measures terms of trade b/w two countries
 - trade weighted exchange rate ~ wgted avg of real exchange rates
 - measures int'l competitiveness
- **Impact of trade**
 - more exports = high demand for DC (DC is more valuable)
 - more imports = high demand for FC (higher supply of DC)
 - BUT – consider that securities are also exports (thus explaining US position with high imports & strong currency)
- **Systems**
 - floating – rates set by supply & demand
 - note – no link b/w international trade and FC reserves
 - benes – avoids financial crisis (no risk re finite FC reserves) + rate can absorb econ shocks
 - fixed – rates set by CB / gov't
 - note – strong link b/w int'l trade and finite FC reserves
 - deficit in BoP lowers reserves
 - shocks to system are corrected by CB sales (BoP deficit) / purchases (BoP surplus) of foreign reserves
 - speculative attacks on fixed regimes = triggered by crisis of confidence
 - ◆ solution – CB spends reserves + devalues currency + suspend convertibility
 - benes – reduces uncertainty + helps int'l trade + financial discipline (limits irresponsible expansion policies)
- **Remember** –
 - Yen exch rate = Yen / dollar
 - Euro exch rate = dollar / Euro
 - currency value ~ determined in foreign exchange market
 - demand for DC = from need to buy domestic goods = total CREDIT to BoP
 - supply of DC = to buy foreign goods = total DEBIT to BoP
 - supply of FC = in response to need for FC re sale of foreign goods
 - external factors affecting rates – productivity + interest rate + confidence in financial markets
 - current account deficit –
 - caused by – strong USD + boom in consumption & investment
 - effect ~ greater supply of USD + weakens USD
 - Financial flows always dominate trade flows (too slow to catch up) → strong currency attracts investment
 - high interest rates attract foreign investment
 - market reaction = driven by ~ trade balance + econ growth indicators + inflation indicators

XIV. International Economics

- **ST exchange rate fundamentals** -
 - int's financial flows drive ST movements
 - expected returns on int'l investments drive int'l financial flows
 - **interest rate parity** $\sim r_F = r + \Delta e_{nom}$
 - $\Delta e_{nom} = (\Delta e_{nom}^{future} - \Delta e_{nom}^{today}) / \Delta e_{nom}^{today}$
 - if country offers higher higher expected returns \rightarrow currency must depreciate v. USD
 - credible fixed exch rates \rightarrow imply identical interest rates
 - high interest – comes from countries lacking credibility + flexible exchange regimes w/ weak currency
 - if market expects exchange rate to rise \rightarrow spot rate must also rise
 - **econ policy issues** –
 - higher domestic interest \rightarrow higher return on domestic assets + currency appreciates +
 - managing exch rates - expectations effect spot rate even when fundamentals remain same \rightarrow gov't influence expectations
 - consider investor expectations – effect may be priced in already
- **LT exh rate fundamentals** -
 - determined by int'l competitiveness and movements in terms of trade (all loans m/b repaid eventually)
 - **Law of One Price** – links P of individual commodities (says no arbitrage in commodities) \sim Big Mac index
 - **PPP - Purchase Power Parity** $\sim Pe_{nom} = P^F \rightarrow e_{nom} = P^F / P$
 - Prices in different countries re-align over LT to ensure equal purchase power per e_{nom}
 - extends arbitrage to whole economy \rightarrow arbitrage ensures that $Pe_{nom} = P^F$
 - does not hold in ST \sim transport costs + non-traded goods (services) + restrictions on trade (tariffs / quotas)
 - relative PPP – exch rate must change to reflect inflation rate differentials
 - ◆ absolute PPP $\sim e_{nom} = P^F / P$
 - ◆ relative PPP $\sim \Delta e_{nom} / e_{nom} = (\Delta P^F / P^F) - (\Delta P / P) = \Pi^F - \Pi$
 - if country has higher inflation \rightarrow currency must depreciate v. USD (e_{nom} rises)
- **Currency Crisis** –
 - Asian crisis \sim caused by – large financial inflows (debt) + financial system vulnerability (no regulation + non-large performing loans) + underlying vulnerabilities (currency over-valuation + weakness in Japan)
 - Competitive Devaluations – circular moves create domino effect across region
- **remember** –
 - ST exchange rate movements \sim tied to int'l flows + more relevant in flexible exch rate regime
 - LT movements \sim tied to trade in goods & services + related to cross country differences in P's & int'l competitiveness
 - if country offers higher higher expected returns (interest) \rightarrow currency must depreciate v. USD

XV. Macroeconomics and Financial Markets

- **Stock Market Valuations** -
 - **ST valuation**
 - stock P = discounted value of future cash flows $[D_{t+x} / (1+r)^x]$
 - stock return = Dividends Yield + Capital Gain $\sim rt+1 = [D_{t+1}/P_t] + [(P_{t+1} - P_t) / P_t] = y + g_P$
 - key = ability to predict behavior of others (buy stock that they will want tomorrow)
 - ◆ what does avg investor think that avg investor thinks about stock market
 - **LT valuation** –
 - links stock values to fundamentals (D and earnings)
 - ignore investor sentiment \rightarrow eventually stock P must reflect performance
 - **Valuation Metrics** -
 - **P/E ratio** – compare earnings yield (E/P with real returns)

- ◆ cons - which earnings are relevant? bw or fw looking? + historical avg is bad b/c more people willing to hold stocks now (less risk averse)

- **Tobin's Q** = $P / K = MV / B$

- ◆ ratio b/w MV and replacement cost of capital
- ◆ if $P > K$ ($Q > 1$) → firm will invest in projects closer to 1 and Q will fall
- ◆ ratio s/b close to 1 (values above 1 c/b bubble)
- ◆ cons + difficult to calc replacement cost + intangible assets becoming more important

➤ LT Stock returns –

- **Dividend growth model**

- ◆ says that $\sim r = [D_{t+1}/P_t] + g_D = y + g_D$
- ◆ implies that $\sim P_t = D_{t+1} / (r-g_D)$ (Key = g in Dividends)
- ◆ assumed that Div Yield D/P is fairly stable
- ◆ cons – D yield is not constant (corps doing more repurchases)

- **Earnings growth model** –

- ◆ says that $\sim r_{t+1} = [D_{t+1}/P_t] + [(E_{t+1} - E_t) / E_t] = y + g_E$
- ◆ implies that $\sim P_t = D_{t+1} / (r-g_E)$ (Key = g in Equity)
- ◆ assumes that E/P is fairly stable

➤ LT Stock Market Valuation

- we need –

- ◆ **i) Div payouts** – postwar avg = 52.41% ; pre war avg = 66.67%
- ◆ **ii) RoR required by investors** – only need equity premium (Beta = 1)
- ◆ **iii) Expected future LT growth** – use forecasted earnings growth – m/b similar to LT econ g
- ◆ c/b nominal or real SLA consistent

- consider – pre-war may be more like today with no inflation

➤ ST investment Strategy – link investment to ST econ performance – driven by inflation, g, interest rates

- **recession** – buy bonds (low g + low inflation + interest rate cuts)
- **recovery** – buy stocks (high expected future g + low inflation + little interest rate pressure)
- **booms** – buy commodities (inflation concern rises + interest rises)
- **slowdown** – hold cash (expected future g is low + inflation risks present + interest rates rising)

• **Remember** –

- ST investment is about forecasting sentiment (not about value) – this is what technical analysis is really about
- LT stock valuations – approximated by earnings yield (E/P) → P/E ~ 14
- Siegel's point – impossible to predict in ST → only LT can be forecasted