International Finance I Notes:

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- Chapter 3: The International Monetary System
  - Components of an international monetary system:
    - Financial institutions
    - Central Bank (Government)
- Talking about gold standard
  - Gold acting as a foreign exchange reserve.
  - When Canada is short, has to find ownership of gold.
  - International imbalances in payments settled with the transfer of gold ownership
  - Canadian dollar to depreciation against korea's currency the immediate effect?
  - Defend and maintain convertibility at a fixed rate, you have to maintain responsibility in mone
- History of the International Monetary System
- Germany hiding by the diluted currency of Europe.

Textbook

Chapter 3 Notes:

- History of the International Monetary System:
  - Gold Standard (1876-1913)
    - Gold as a medium exchange and store value.
    - Boom in late 1800s trade called for more formalized system for international trade balances… GOLD.
    - Classical gold standard emerged: countries setting a par value of its currency in terms of gold.
      - i.e. each country set the rate at which its currency unit would be converted to a weight of gold.
    - Example:
      - $20.67/ounce for the USA
      - 4.247 pound/ounce for UK
        - = 20.67/4.24 = $4.86/pound
    - Gold standard= a fixed exchange rate
      - As governments agreed to buy or sell gold on demand with anyone at its own fixed parity rate.

- Eliminated monetary policy as a tool.
- Rate of money growth= rate at which authorities could acquire gold.
- Required adequate gold reserves to back up its currency's value.

- Interwar Years and WWII (1914-1944)
  - Currency allowed fluctuating over fairly wide ranges in terms of gold and in relation to each other (trade imbalances caused this fluctuation around a central equilibrium value. Flexibility wasn't so successful
  - Speculative trading i.e. selling weak currencies short allowed currencies to further drop in value than would be the warranted by real economic factors
  - "short"= selling an asset such as a currency to another party for delivery at a future date.
  - Speculator expects asset price to fall in the future.
  - Reverse occurred with strong currencies. Fluctuations in currency values could not be offset by the relatively illiquid forward exchange market except at exorbitant cost.
  - Net result: volume of trade did not grow in the '20s in proportion to GDP, and actually declined with the advent of the GD.
  - Modified gold standard adopted by US in 1934.
    - Devalued to $35/ounce and only traded gold with foreign central banks and not the public.
  - 1934-1945:
    - Exchange rates theoretically determined by each currency's value in terms of gold.
  - Post WWII- main trading currencies lost their convertibility into other currencies. Dollar was one of the few that continued to be convertible.
- Bretton Woods and the IMF, 1944
  - Bretton Woods:
    - New postwar international monetary system.
    - A U.S. dollar-based system + creation of the IMF and World Bank.
      - IMF→ aids countries with balance of payments and exchange rate problems whether cyclical, seasonal or random occurrences.
        - Promises to assist countries with structural trade problems if they promise to take adequate steps to correct the problems.

        - But CAN'T save a country from eventual devaluation if deficit is persistent
        - More recently helped with countries facing financial crisis.
    - World Bank helped fund postwar reconstruction and since then has supported general economic development.
- From the agreement, all countries agreed to fix their value of their currencies in terms of gold but were not required to exchange them for gold. Only the dollar did at $35/ounce.
    - i.e. each country established exchange rate vis a vis the dollar, and then calculated the gold par value of its currency to create the desired dollar exchange rate @ 1-2.25% of par by buying or selling foreign exchange or gold as needed.
- Gold Exchange Standard:
    - Can't use devaluation for competitive trade policy but if too weak to defend, a devaluation up to 10% allowed. If more, need IMF approval.
- Special Drawing Right:
    - International reserve asset created by the IMF at the time to supplement existing foreign exchange reserves.
    - Weighted average of four major currencies: yen, pound, dollar, euro. Updated every five years.
    - Serves as a unit account for the IMF and other international and regional organizations, also the base against which some countries peg the exchange rate for their currencies.
    - Countries hold SDRs in the form of deposits in the IMF. Part of the international moentary reserves, along with holdings of gold, foreign exchange, and its reserve position at the IMF.

- Fixed Exchange Rates, 1945-1973:
    - Post WWII characterized as a period of reconstruction and rapid growth in world trade.
    - System's demise: diverging national monetary and fiscal policies, differing rates of inflation, and various unexpected external shocks.

        - US dollar was main currency reserve held by central banks and was key to the web of exchange rate values, but the US ran growing deficits in its balance of payments.
            - Heavy capital outflow of dollars needed to finance deficit and to meet growing demand for dollars from investors/businesses.
            - Heavy overhang of US dollars held by foreigners resulted in lack of confidence in the ability of the US to meet its commitment to covert dollars to gold.
            - 1971: official purchases or sales of gold by US treasury suspended. (stems from outflows of 1/3 of official gold reserves in just 7 months)
            - US devalued currency again in 1973 after an attack.
            - FX markets closed in March 1973 then reopened with currencies floating via levels determined by market forces.
    - The Floating Era of Eclectic Arrangements, 1973-1997
        - Exchange rates more volatile and less predicable.
        - Most recent shocks contributing to such swings in value are
            - European Monetary System restructure 1992-1993
            - Emerging market currency crises (Mexico 1994, Thailand 1997, Russia 1998, Brazil 1999)
            - introduction of Euro 1999
            - Currency Crises and changes in Argentina and Venezuela 2002.
    - The Emerging Era, 1997-Present
        - Final section of the chapter argues that the global monetary system is already more than a decade into the embracement of a number of major emerging market currencies, beginning with the Chinese renminbi.
- IMF Classification of Currency Regimes:
    - IMF's analysis today is focused on classifying currencies on the basis of an ex-post analysis of how the currency's value was based in the recent past, one which focuses on observed behavior and not on official government policy pronouncements.
    - Before, member states would have to submit their exchange rate policies to the IMF and those submissions were the basis for its categorization of exchange rate regimes.
    - IMF's 2009 de facto system:
        - Based on de facto results and not on de jure classification.
        - 4 basic categories:
            - Hard Pegs
                - Countries that have adopted other currencies (Zimbabwe and its dollarization). Use a currency board structure which limits

monetary expansion to the accumulation of foreign exchange. No monetary policy tool..

- Soft Pegs:
  - Fixed exchange rates.
  - Subcategories based on what currency is it fixed to, whether that fix is allowed to change, if so under what conditions and what types, magnitudes and frequencies of intervention are allowed/used, and degree of various about the fixed rate.
- Floating Arrangements:
  - Values determined by open market forces and without governmental influence of intervention.
  - Can have floating with intervention by government for rate goals or objectives.
- Residual:
  - All exchange rate arrangements that do not meet the criteria of the previous three categories.
  - Arrangements categorized by frequent shifts in policies fall into this category.

▪ A Global Eclectic:

- Global monetary system today is a global eclectic.
- Dominated by two major currencies, Dollar and Euro.
- Euro= rigidly fixed system, a single currency for member countries.
- But euro itself is indecently floating currency against all other currencies.
- @ the other extreme are freely floating currencies mainly from developed countries w/ unwilling participants such as emerging market economies that tried to maintain fixed rates but were forced by the marketplace to let them float. (Korea, Philippines, Brazil, Indoneisia, Mexico, and Thailand)
- Remember, even the most stable currency have to "manage" their values on occasion.

- Fixed Versus Flexible Exchange Rates
  - Which currency regime to follow? Reflects national priroities about the facets of the economy (unemployment, inflation, interest rate levels, trade balances, and economic growth). All of which may change over time
  - Benefits of fixed:

        - Provide stability in international prices for trade. Aids in growth of international trade and lessen risks for all businesses.
        - Fixed exchange rates are inherently anti-inflationary, requiring the country to follow restrictive monetary and fiscal policies. Can be a burden though for countries wanting to alleviate unemployment or slow economic growth through monetary policy.
    - Cost:
        - Necessitates that central banks maintain large quantities of international reserves (hard currencies and gold) for use in occasional defense of the fixed rate.
        - Becoming a significant burden with international currency markets growing rapidly in size/volume.
        - So the rates can be maintained at levels inconsistent with economic fundamentals. Rates should change as economy evolve.
- The Impossible Trinity:
    - Exchange rate stability (for trader and investor certainty)
    - Full financial integration:
        - Complete freedom of monetary flows allowed, so traders and investors could willingly and easily move funds from one country and currency to another in response to perceived economic risk or opportunities.
    - Monetary Independence:
        - Domestic monetary and interest prate policies would be set by each individual country to pursue national economic policies, especially in relation to combating inflation, combating recessions, and fostering prosperity and full employment.
    - Increased capital mobility has been pushing more countries toward full financial integration in an attempt to stimulate their domestic economies and feed capital appetites of their MNEs. (Countries cornered into floating or integrated with others in monetary unions, like the EU)

- A Single Currency for Europe: The Euro
    - A core set of European countries worked steadily toward integrating their individual nations into one larger, more efficient, domestic market.
    - Continuing in 1992, number of barriers still remained (use of different currencies for example→ which forced consumers and companies to treat individual markets separately→
        - "Currency risk in cross-border commerce."

        - European Monetary System→ formed a system of fixed exchange rates among the member currencies, with deviations maintained through bilateral responsibility to maintain rates at +-2.5% of an established central rate. → Effect in 1979-199→ withstood FX crisis in 1992/1993
    - The Maastricht Treaty and Monetary Union:
        - 1991 treaty that changed Europe's currency future
        - plan and timetable established for adoption of single currency for EMS members.--> The Euro.
        - Plus other initiatives which developed the European Economic and Monetary Union→ a single currency area within the EU single market, now known as the Eurozone, in which people, goods, services and capital are supposed to move without restrictions.
        - To achieve the above, monetary and fiscal policy coordination needed. → Process of *convergence*
            - Convergence criteria necessary to become full EMU member. (Goal being integration of systems at the same performance levels)
                - Nominal inflation no more than 1.5% above the average for three members of the EU with the lowest inflation rates during previous year
                - LT-interest rates no more than 2% above the average for the three members with the lowest interest rates.
                - Fiscal deficit no more than 3% of GDP.
                - Outstanding government debt no more than 60% of GDP.
    - European Central Bank (ECB)
        - Cornerstone of a monetary system = strong and disciplined central bank.
        - Established in Maastricht Treaty. 1998 finally established
        - Independent CB that dominates the activities of the individual countries central banks.
            - Independent CBs still regulate banks resident within borders, but all financial market intervention and issuance of the single currency is the responsibility of the ECB.
            - Most important mandate of the ECB was its charge to promote price stability within the EU.
    - Launch of the Euro:
        - 1999 EU initiated EMU and established the euro.
        - UK, Sweden, Denmark chose to maintain their individual currencies.

        - Benefits for participating states:
            - Countries within the euro zone enjoy cheaper transaction costs.
            - Currency risks and costs related to exchange rate uncertainty are reduced.
            - Consumers and businesses inside and outside the uro zone enjoy price transparency and increased price-based competition.
        - Costs:
            - Mainly the loss of monetary independence.
        - Began trading in world currency markets in 1999.
            - Introduction was a smooth one.
            - Declined in value agains the US dollar in early years, then strengthened versus the dollar and has maintained that relative strength over the past decade. Yet demonstrated significant volatility.
            - Countries that use the euro= Eurozone (17 members)
            - Hesitation still exists among EU members that are expected to adopt the euro.
- Greek/EU Debt Crisis:
    - Freedom exists in setting fiscal policy, but must keep deficit spending within limits imposed.
    - EU member states chose exchange rate stability and free movement of capital (financial integration) when adopting the Euro, leaving out control of their money supply.
        - ECB conducting M-policy on member states behalf.
    - If monetary independence is not preserved, then one or both of the other elements in the Trinity may fail—capital mobility or exchange rate stability (individual sovereign debt issuance may raise cost and decrease availability of capital to other member states.

- Emerging Markets and Regime Choices:
    - Increased capital mobility pressures noted previously have driven a number of countries to choose between either free floating exchange rate or the opposite extreme of a fixed regime, such as a currency board, or dollarization. (1997-2005)
    - Currency board
        - exists when a country's central bank commits to back its monetary base—its money supply—entirely with foreign reserves at all times.
        - 8 countries including HK

        - One unit of domestic currency cannot be introduced into the economy without an additional unit of foreign exchange reserves obtained.
        - Argentina:
            - 1991 currency board structure adopted.
            - Fixed to the US dollar on a 1-to-1 basis.
            - Required every peso issued through the banking system be backed by either gold or US dollars held on accounts in Argentine banks.
            - "100% reserve system"→ creates dependency on the ability to obtain US dollars through trade or investment→ eliminates rapid money supply growth and thus inflation.
            - Argentines + foreigners allowed to hold dollar-denominated deposits in Argentine Banks (euro-dollar accounts→ dollar denominated deposits in non-US banks)
            - Banks paid higher interest rates on peso-denominated accounts than on dollar denominated accounts→ highlights the market's assessment of the risk inherent in the Argentine financial system as many were skeptical of the government maintaining the fixed exchange rate→ possibility of what was then "fixed" would not always be so.
            - January 2002→ end of currency board-→ fell in value dramatically within days.
    - Dollarization
        - Several have suffered from devaluations as a result of inflation, and have taken steps toward dollarization
            - "use of the US dollar as the official currency of the country"
        - Sound monetary and exchange-rate policies no longer depend on the intelligence and discipline of domestic policymakers→ exchange rate fixed forever and the monetary policy becomes the one followed by the US
        - Dollarization eliminates FX volatility against the dollar and would eliminate possibility of future currency crises
        - + Better integration with dollar-based markets, product and financial → has led some to argue for regional dollarization.
        - Against dollarization:
            - No monetary policy (but that's the point of dollarization)
            - Loses power of seignorage, ability to profit from printing its own money.

                - Central bank of the country can no longer be lender of last resort as it no longer has the ability to create money within its economic and financial system (to banks on the brink of failure during times of financial crisis)
            - Ecuador:
                - Adopted Dollar in 2000, prior suffered falling level of economic output and rising inflation + hit with a series of devastating "bank runs"
                - Following dollarization, 600 million dollars injected into the banking system by residents once hoarding their money… this + IMF loans and economic restructuring aided economic recovery in the shorterm.
                - But continues to struggle today economically and politically with the new currency regime.
    - Withstanding speculative attacks
        - Control foreign denominated debt
        - Strong economic fundamentals
        - Sufficient FX reserves
    - Hong Kong
        - Pegged system to the USD, almost dollarization
        - Chinese Yuan pegged to the USD
            - Many arguing the real value of the Yuan is actually higher than what the fixed exchange rate indicates. Many want the Yuan revalued further.
            - China has been able to withstand Yuan revaluation due to strong economic fundamentals.
                - FX reserve as an asset instead of liability.
- Currency Regime Choices for Emerging Markets:
    - Many experts have argued for years that the global financial marketplace will drive more and more emerging market nations toward one of these extremes, i.e. hard peg or free floating.
    - 3 common features of emerging market economies that make any specific currency regime choice difficult:
        - 1. Weak fiscal, financial and monetary institutions.
        - 2. Tendencies for commerce to allow currency substitution and the denomination of liabilities in dollars.
        - 3. Emerging market's vulnerability to sudden stoppages of outside capital flows.
- Exchange Rate Regimes… What Lies Ahead?
    - Regime structures like the gold standard required no cooperative policies among countries, only the assurance that all would abide by the rules of the game .e. the willingness of governemtns to buy or sell gold at parity rates on demand prior to WWII.

    - BW agreement required more in terms of cooperation, in that gold was no longer the "rule" and countries were required to cooperate greatly to maintain the dollar-based system.
    - Exchange rate systems like that of the EMS's fixed exchange rate band system used from 1997-1999 was a hybrid between the cooperative and rules.
    - Today, present monetary system characterized by no rules with varying degrees of cooperation.
- What he's looking for in this chapter:
    - What does the gold standard mean for changes in money supply, of independent monetary policy…. To fixed fx rate, similar…
    - What is desirable/ what do nations try to achieve with a particular choice of FX rate… what is a consistent set of objectives? Ideally you'd have all 3 of the impossible trinity, why each one is desirable and why it is an impossible trinity
    - What has worked well in recent years (giving up fx stability)
    - Weak emerging market institutions and relationship with the impossible trinity etc.
    - His personal view is that free market is good i.e. financial market integration, withstand fx volatility but with the explosion of FX derivatives then the problem is not as bad as thought. You can manage exchange rate volatility in favor of full financial integration.

- Example Problems:
    - Q1. Example:
        - $20.67/ounce for the USA
        - 4.247 pound/ounce for UK
            - = 20.67/4.24 = $4.86/pound
        - highlights that gold standard is nothing but fixed exchange rates to an extent.
    - 3.3. Example:
        - She can buy US dollar for .76 euro. He can buy a euro for $1.32 dollars. What is the foreign exchange rate between the dollar and the euro?
            - Reciprocal of .76 is $1.31 i.e. to get 1 euro in Brussels, you need 1.31 dollars.
            - Euro is undervalued in Brussels and dollar overvalued. i.e. compare 1.31 dollars and 1.32 dollars and .75 euro and .76 euro.
            - Check excel.
    - 3.4
        - devalued by 42%

        - question of understanding devaluation and revaluation
    - 3.5
        - "not as important"
    - 3.6
        - "not as important"
    - 3.7
        - Indirectly calculating exchange rate using 2 direct exchange rates.
    - 3.9
        - follow by yourself
    - 3.10

Chapter 4: Balance of Payments

- "The measurement of all international economic transactions between the residents of a country and foreign residents is called the balance of payments (BOP)."
- Government policy makers need such measures of economic activity in order to evaluate the general competiveness of domestic industry, to set exchange rate or interest rate policies or goals, and for many other purposes.
- MNEs use various BOP measures to gauge the growth and health of specific types of trade or financial transactions by country and regions of the world.
- The data in BOP accounts are influenced and influences other key macroeconomic variables such as employment levels, GDP, price levels, interest rates and fx rates.
- BOP accounts a consideration of monetary and fiscal policy.
- Business managers can also anticipate changes in host-country economic policies that might be driven by BOP events.
- BOP data important because:
    - Important indicator of pressure on a country's foreign exchange rate, and thus of the potential for a firm trading with or investing in that country to experience fx losses or gains…. Bop data may predict the imposition or removal of foreign exchange controls.
    - Changes in a country's BOP may signal the imposition or removal of controls over payment of dividends and interest, license fees, royalty fees, or other cash disbursements to foreign firms/investors.
    - BOP helps to forecast a country's market potential, especially in the SR. A country experiencing a serious trade deficit is not as likely to expand imports as it would if it were running a surplus. It may however welcome investments that increase its exports.
- Typical Balance of Payments Transactions:

- "Follow the cash flow"
- Fundamentals of Balance of Payments Accounting:
  - The entire BOP of a single country is always balanced, a subaccount of the BOP such as merchandise trade may be imbalanced.

EXHIBIT 4.1 Generic Balance of Payments

A. Current Account

1. Net exports/imports of goods (balance of trade)
2. Net exports/imports of services
3. Net income (investment income from direct and portfolio investment plus employee compensation)
4. Net transfers (sums sent home by migrants and permanent workers abroad, gifts, grants, and pensions)

A(1 − 4) = Current Account Balance

B. Capital Account

Capital transfers related to the purchase and sale of fixed assets such as real estate

C. Financial Account

1. Net foreign direct investment
2. Net portfolio investment
3. Other financial items

A + B + C = Basic Balance

D. Net Errors and Omissions

1. Missing data such as illegal transfers

A + B + C + D = Overall Balance

E. Reserves and Related Items

Changes in official monetary reserves including gold, foreign exchange, and IMF position

- Process of measuring international economic activity:
  - 1. Identifying what is and is not an international economic transaction.
  - 2. Understanding how the flow of goods, services, assets, and money creates debits and credits to the overall BOP.
  - 3. Understanding the bookkeeping procedures of BOP accounting.
- Defining International Economic Transactions:
  - Export of merchandise
  - Import of merchandise
  - All expenditures made by US tourists around the globe for services, but not for goods, are recorded in the US balance of payments as imports of travel services in the current account.
  - The purchase of a US treasury bill by a foreign resident is an international financial transaction and is duly recorded in the financial account of the US balance of payments.
- The BOP as a flow statement:
  - BOP is a cash flow statement, not a balance sheet.
  - Tracks continuing flows of purchases and payments between a country and all other countries.
  - 2 types of business transactions dominate the BOP:
    - Exchange of real assets (G&S)

            - For other G&S or for money.
        - Exchange of financial assets:
            - Exchange of financial claims for other financial claims of money
- BOP Accounting:
    - Mistakes, errors and statistical discrepancies can occur.
    - Primary problem is double-entry bookkeeping is employed in theory, but not in practice.
        - i.e. current, financial, and capital account entries are recorded independently of one another, not together as double-entry bookkeeping would prescribe.

The Accounts of the Balance of Payments:

- 3 subaccounts:
    - Current, financial and capital account
- In addition:
    - Official reserves account→ tracks government curreny transactions
    - Net errors and omissions account→ produced to preserve the balance in the BOP.
- Current Account:
    - Includes all economic transactions with income or payment flows occurring within the year, the current period.
    - 4 subcategories:
        - Goods trade
            - Export/import of goods
        - Services trade
            - financial services provided by banks to foreign imports and exporters, travel services of airlines, and construction services of domestic firms in other countries are the main examples.
            - Fastest growth in the past decade for major industrial countries.
        - Income
            - Current income associated with investments that were made in previous periods usually.
            - Example:
                - US firm created a subsidiary in SK to produce metal parts in previous year, the proportion of net income that is paid back to the parent company in the current year (dividend) constitutes current investment income.
            - + Wages and salaries paid to nonresident workers.
        - Current transfers

                - The financial settlements associated with the change in ownership of real resources or financial items are called current transfers
                - A gift or grant transfer between countries is also considered here.
                - Funds provided by US to aid Philippines in typhoon.
                - Transfers associated with the transfer of fixed assets are included in the capital account.
            - Many smaller, less developed countries have little in the way of service trade, or items that fall under income or transfers subaccounts.
            - Current account dominated by export and import of merchandise.--> BOT
            - If country is largely industrialized, BOT is misleading, as it does not include trade of services.
- Goods Trade:
    - Understanding the merchandise import and export performance is much like understanding the market for any single product:
        - Demand factors that drive both are income, the economic growth rate of the buyer and the price in the eyes of the consumer after passing through an exchange rate.
    - Major categories in service account:
        - Travel and passenger fares
        - Transportation services
        - Expenditure by US students abroad
        - And foreign students pursuing studies in the US
        - Telecommunication services
        - Financial services.
- The Capital and Financial Accounts:
    - Measure all international economic transactions of financial assets.
    - Made up of the transfers of financial assets and the acquisition and disposal of nonproduced/nonfinancial assets.
- Financial Account Components:
    - 4 components:
        - Direct investment, portfolio investment, net financial derivatives, and other asset investment.
        - Financial account classifies according to the degree of control over assets or operations, as in portfolio investment where investor has no control or direct investment when investor exerts some degree of control over assets.
        - Direct Investment:
            - Net balance of capital dispersed from and into the US for the purpose of exerting control over assets.
            - When the capital flows out of the US, it enters the balance of payments as a negative cash flow.

        - Examples: US building plant in Korea, or purchasing Korean company. Or a Korean company building plant in US.
        - Source of concern over foreign investment in any country, focuses on two topics: control and profit. Some countries put restricts on what foreigners may own.
        - Capital, short or long, flows to where the investor believes it can earn the greatest return for the level of risk.
    - Portfolio Investment:
        - Net balance of capital that flows in and out of the US but does not reach the 10% ownership threshold of direct investment
        - Purchase or sale of debt securities like US treasury bills across borders is also classified as portfolio investment, because debt securities by definition do not provide the buyer with ownership or control.
        - US firm purchases shares in Japanese firm less than 10% classified here.
        - Portfolio investment is capital invested in activities that are purely profit-motivated (return), rather than ones made to control or manage the investment.
        - Debt securities, bonds, interest bearing bank accounts.
        - Worth noting that most US debt purchased by foreigners is US dollar denominated in the currency of the issuing country as well as foreign nations issuing debt in US dollars. → Foreign country must earn dollars to repay its foreign held debt, US does not need to earn any foreign currency to repay its foreign debt.
        - Portfolio investment showed much more volatile behavior than net foreign direct investment has over the past decade.
        - Motivating forces for portfolio investment flows are always the same-return and risk.
    - Other Investment Assets/Liabilities:
        - Various short-term and long-term trade credits, cross-border loans from all types of FIs, currency deposits and bank deposits, and other accounts receivable and payable related to cross-border trade.
- Current and Financial Account Balance Relationships
    - Inverse relation between current and financial accounts.

- Requires this unless the country's exchange rate is being manipulated or controlled by governmental authorities:
  - Twin surpluses of china
- Countries experiencing large current account deficits finance these purchases through equally large surpluses in the financial account and vice versa.
- Net errors and omissions:
  - Necessary as current and financial account entries are collected and recorded separately.
  - Ensures BOP actually balances.
- Official Reserves Account:
  - Total reserves held by official monetary authorities within a country.
  - Composed usually of the major currencies used in international trade and financial transactions → "hard currencies"
  - Significance of these reserves contingent on whether operating under a fixed or floating regime.
  - If fixed, officials declare the domestic currency is convertible into a fixed amount of some other currency.
  - Governments responsibility to maintain this parity rate:
    - If there were excess supply of chinese yuan on the currency market, to prevent the yuan from falling in value, chinese government would support yuan's value by purchasing yuan on the open market (by spending hard currency reserves, its official reserves) until the excess supply was eliminated.
    - Under floating regime, no such responsibility is needed.
    - China has largest foreign exchange reserves now, sufficient to manage the yuan's value for years to come.

- Breaking the Rules: China's Twin Surpluses:
  - Relates to China's surpluses in both current and financial accounts—highly unusual—normally an inverse relationship exists
    - Should be that countries finance their current account deficits through equally large surpluses in the financial account. For countries like Japan, the inverse.
  - Positive prospects of the Chinese economy have drawn such massive capital inflows into China in recent years that the financial account too is in surplus, already with a current account surplus.
  - Rise of the chinese economy has been accompanied by a rise in its current account surplus and subsequently accumulation of foreign exchange reserves.

    - Reserves increased by a factor of 10 from 2001 to 2010, from 200 billion to 2500 billion USD.
    - Allows Chinese government to manage value of the yuan and its impact on Chinese competitiveness in the world economy. → Setting a relatively fixed exchange rate against other currencies like the dollar.
    - Solution to the problem, if it is a problem, would be to reduce current account surplus or allow Yuan to float to a stronger value but not in line with China's political line.
- Balance of Payments in Total:
    - Current account, financial account and capital account combine to form the basic balance.--> frequently used summary measure in the BOP→ describes international economic activity of the nation determined by market forces and not by government decisions (such as currency market intervention)
    - "Overall balance" also used.
    - Under fixed exchange rate regimes:
        - A surplus in the BOP implied that the demand for the country's currency exceeded the supply and that the government should allow the currency value to increase or intervene and accumulate additional foreign currency reserves in the official reserves account.--> this intervention would occur as the government sold its own currency in exchange for others, thus building up stores of hard currency.
        - A deficit in the BOP implied an excess supply of the country's currency on world markets, and the government would then either devalue the currency or expend its official reserves to support its value.

Balance of Payments Interaction with Key Macro Variables:

- Interacts with:
    - GDP
    - Exchange rate
    - Interest rate
    - Inflation rates
- BOP and GDP:
    - GDP= C + I + G + X – M
        - X-m= balance on the current accunt, when including current income and transfers.
    - A positive current account balance (surplus) contributes to increasing measure of GDP, negative one decreases GDP.
    - An increase or decrease in GDP also contributes to the current account as say GDP grows, so does disposable income and capital investment, leading to more consumption, a portion of which comes

through imports and increased consumption usually means more capital investment.

- BOP and Exchange Rates:
  - Depending on country's exchange rate regime
  - Relationship between BOP and exchange rates can be illustrated using a simplified equation that summarized BOP data:
    - Current account balance (X-M) + Capital Account Balance (CI-CO) + Financial Account Balance (FI-FO) + Reserve Balance = BOP
    - X is exports of goods and services, M is imports, CI is capital inflows, CO is outflows, FI is financial inflows, FO is outflows, and FXB is official monetary serves such as foreign exchange and gold.
      - Fixed exchange rate regime:
        - Government bears responsibility to ensure BOP is near zero, if sum of current and capital accounts do not approximate zero, government expected to intervene in foreign exchange market by buying or selling official foreign fx reserves.
        - If greater than 0, a surplus demand for domestic currency exists→ government would then sell domestic currency for foreign currencies or gold to bring BOP near zero.
        - If negative, excess supply of the domestic currency exists in world markets…must buy domestic currency with reserves.
        - If country runs out of fx reserves, it would be unable to buy back its domestic currency and will be forced to devalue.
      - Floating exchange rate countries:
        - No responsibility to peg its foreign exchange rate.
        - The fact that the current and capital account balances do not sum to zero will automatically in theory alter the exchange rate in the direction necessary to obtain a BOP near zero.
        - If excess supply of domestic currency appears on world markets, say from running a sizeable current account deficit, the market will rid itself of the imbalance by lowering the price… i.e. the domestic currency will fall in value and the BOP will move back toward zero.
      - Managed Floats:
        - Find it necessary to take action to maintain their desired exchange rate values.

    - They seek to alter the market's valuation of a specific exchange rate by influencing the motivations of market activity, rather than through direct intervention in FX markets.
    - Primary action is changing relative interest rates, influencing economic fundamentals of exchange rate determination
    - Change in interest rates is an attempt to alter the term (CI-CO), especially the short-term portfolio component of these capital flows in order to restore an imbalance caused by the deficit in the current account.
    - If country wants to defend its currency, may choose to raise domestic interest rates to attract additional capital from abroad. → in effect creating market demand for the domestic currency through market forces.
        - Also raises the cost of local borrowing for businesses, however, so the policy is seldom without domestic critics.
- BOP an interest rates:
    - The overall level of a country's interest rates compared to other countries has an impact on the financial account of the balance of payments
    - Relatively low real interest rates should stimulate outflow of capital seeking higher interest rates in other country currencies.
    - For the US: despite relatively low real interest rates and large BOP deficits on current account, the US BOP financial account ha experienced offsetting financial inflows due to relatively attractive US growth rate prospects, high levels of productive innovation and perceived political safety.
    - Thus: financial account inflows have helped the US maintain its lower interest rates and to finance its exceptionally large fiscal deficit.
- The BOP and Inflation Rates:
    - Imports have the potential to lower a country's inflation rate.
    - i.e. imports on lower priced goods and services place a limit on what domestic ocmpetitors charge for comparable goods and services.

        - Foreign competition substitutes for domestic competition to maintain a lower rate of inflation than might have been the case without imports
            - But GDP will be lower and the balance on current account will be more negative.
    - Trade balances and exchange rates:
        - A country's export and import of goods and services is affected by changes in its exchange rates… transmission mechanism→ changes in exchange rates change relative prices of imports and exports, and changing prices in turn results in changes in quantities demanded through price elasticity of demand.
        - Trade and devaluation:
            - Persistent and sizeable trade deficits may force countries to devalue their own currencies.
            - Devaluing currency to make exports more competitive --> competitive devaluation
    - Skipped J Curve and "Trade Balance Adjustment Path : The Equation"
- Capital Mobility:
    - Current Account VS Financial Account Capital Flows:
        - Capital inflows contributing to economic development→ infrastructure development, productivity improvements, availability of capital for new projects etc. capital outflows can also help citizens or domestic firms earn a great rate of return, diversify their portfolio or extend commercial development of domestic enterprises.
        - But can potentially destabilize economic activity→ reason why under the BWsystem they promoted the free movement of capital for current account transactions—foreign exchange deposits, bank deposits and money market instruments—but not require such free transit for capital account transactions such as equity investments and foreign direct investments.
        - Longer-term capital flows often reflect more fundamental economic expectations, including growth prospects and perceptions of political stability.
        - Many emerging market countries have continued to develop by maintain a near fixed (Soft peg) exchange rate regime, a strictly independent monetary policy while restricting capital movement.

- With growth of current account business activity, i.e. export and import of goods and services, more and more current account related capital flows are deregulated.
- If however the country experiences significant volatility in these short term capital movements, capital flows potentially impacting either exchange rate pegs or monetary policy objectives, authorities are often quick to reinstitute capital controls.
- Asian Financial Crisis→ smaller economies, no matter how successful their growth and development may have been under export-oriented trade strategies found themselves still subject to sudden and destructive capital outflows in times of economic crisis and financial contagion.

- Historical Patterns of Capital Mobility:
  - Gold Standard 1860-1914:
    - era of growing capital openness in which trade and capital began to flow more freely, but dominated by industrialized nation economies that were dependent on gold convertibility to maintain confidence in the system.
  - Interwar Years (1914-1945)
    - Era of retrenchment, in which major economic powers returned to isolationist and protectionist policies, restricting trade and eliminating capital mobility.
    - Results: great depression, rising international political and economic disputes
  - Bretton Woods Era (1945-1971):
    - Dollar based fixed exchange rate system→ long period of economic recovery and growing openness of both international trade and capital flows in and out of more and more countries.
    - Belief of rapid growth in speed and volume of capital flows ultimately led to failure of BW system→ global capital could no longer be held in check.
  - Floating Era (1971-1997)
    - Saw the rise of growing schism (split) between the industrialized and the emerging market nations.
    - Industrialized nations moved to or were driven to floating exchange rates by capital mobility

        - Emerging markets in attempt to promote both economic development but maintain control over currencies and economies, opened trade but maintained restrictions on capital flows. Era ended with onslaught of Asian Financial Crisis 1997.
    - Emerging Era (1997- Present)
        - Emerging economies, led by China and India, attempt to gradually open their markets to global capital→ must give up monetary independence or exchange rate stability.
        - By 2011/2012 more and more emerging market currencies "suffer" appreciation, or fight appreciation, as capital flows grow in magnitude and speed.
        - 2008-20011 → double edged sword of global capital movements:
            - In post credit crisis period, global capital now flowed toward emerging markets.
            - Although funding their rapid economic recovers, it came with luggage i.e. pressure on emerging market currencies to appreciate and thus partially undermine export competiveness.
- Capital controls:
    - "any restriction that limits or alters the rate or direction of capital movement into or out of a country"
        - to who, what, when, where and why of investment control considerations
        - for insulating domestic monetary and financial economy from outside markets or political motivations over ownership and access interests.
        - Impossible trinity requires that capital flows be controlled if a country wishes to maintain a fixed exchange rate and an independent monetary policy.
        - Could be a tax on some transaction, may limit the quantity or magnitudes of specific capital transactions or prohibit them altogether.
        - Capital controls can also be used to stop or thward capital outflows and currency devaluation or deprecation.
            - Ex: Malaysia imposed a series of capital controsl tht were intended to stop short-term capital movements, in or oout, but

not hinder trade and not restrict long-term inward investment when currency came under attack and capital exited Malaysian economy.
    - Capital controls can be implemented in the opposite case as well in which the primary fear is that large capital inflows will cause currency appreciation and harm export competitiveness and complicate monetary policy i.e. capital inflows flooding money markets and bank deposits.
    - Dutch Disease case:
        - Rapid growth of the natural gadsindustry in the Netherlands in the 1970s→ growing fear that massive capital inflows would drive up the demand for the Dutch guilder and cause substantial currency appreciation, a more expensive guilder would reduce international competiveness of other Dutch manufacturing industries, causing their relative decline to that of the natural resource industry.
        - A challenge faced by a number of resource-rich economies of relatively modest size and relatively small export sectors in recent year.
- Capital Flight:
    - Capital controls hope to control capital fight.
    - "International flows of direct and portfolio investments under ordinary circumstances are rarely associated with the capital flight phenomenon. Rather, it is when capital transfers by residents conflict with political objectives that the term flight comes into general usage.
    - Many indebted countries have suffered significant capital fight, which has compounded their problems of debt service.
    - Money laundering is the cross-border purchase of assets that are namaned in a way that hides the movement of money and its ownership
    - False invoicing of international trade transactions occurs when capital is moved through the under invoicing of exports or the over invoicing of imports, where the difference between the invoiced amount and the actual

agreed upon payment is deposited in banking institutions in a country of choice.

- Globalization of Capital Flows:
    - Traditionally, the primary concern over inflow of capital inflows is that they are short term in duration, may flow out with short notice, and are characteristics of the politically and economically unstable emerging markets.
    - But two of the largest capital flow crises in recent years have occurred within the largest, most highly developed, mature capital markets—United States and Western Europe.

Lecture Notes September 9, 2014:

- The measurement of all international economic transactions between residents of a country and foreign residents is called the balance of payments and governments.
- BOP always expressed in domestic currency.
- Intl business transactions occur in many different forms over the course of a year.
- Any imbalances in the account puts undue pressure on the exchange rate.
- Must look at where a country's BOP stands and where it's going.
- Exhibit 4.1 important exhibit.
- What are the 2 most important accounts: current and financial account.
- Foreign direct investment→ investing in a company or business abroad where the transaction gives you some control over business activity.
- Flow of financial capital
- You want financial and current account surplus, normally not the case.
    - Anomaly: China.
    - Exporting more and a lot of capital investment in China.
- Current Account slide important
- US exports more services than goods.
- Focus on the degree of domestic control…
- Pay attention to BOP Interaction with key macro variables also.
- Worries about the real estate of china.

- If you follow an open trade policy, which of course would mean X-A would fluctuate freely, then you cannot pursue free
- Higher interest rates appreciates the currency and exchange rate goes down i.e. financial investment is more attractive in your country.
- Low interest rates is something many countries use to have your currency not appreciate so much and to attract domestic investment in your country. Cant keep it low forever because look at the US, could be asking for trouble if you do the wrong thing with the low interest rates.
- Ignore j curve.
- Look @ set of transactions and see which account of balance of payments it's going to and what impact it's going to have.
- End of chapter problems:
    - 4-10:
        - anything that creates more demand for foreign currency and supply of your currency it's going to be a debit to the current account.
        - These questions definitely on the exam.
    - 4-13 and 4-14 and 4-15 read.

Chapter 6: The Foreign Exchange Market

- A foreign exchange transaction: an agreement between a buyer and seller that a fixed amount of one currency will be delivered for some other currency at a specified rate.
- Geographical extent of the foreign exchange market:
    - Many large international banks operate foreign exchange trading rooms in each major geographic trading center in order to serve important commercial accounts on a 24 hour basis.
    - Some nations still conduct foreign exchange trading on the official trading floor via open bidding.
    - Business firms in countries with exchange controls, for example, China, often must surrender foreign exchange earned from exports to the central bank at the daily fixed price.
    - Highly sophisticated telecommunications networks facilitating exchange of currency quotes almost instantaneously.
    - Automated trading is a growing part of the industry→ corporate buyers and sellers trade currencies through internet-based platforms provided or hosted by major money center banks.
- Functions of the Foreign Exchange Market:
    - Mechanism by which participants transfer purchasing power b/w countries
        - Necessary b/c transactions occurring between parties operating under different currencies. One party must deal with the foreign currency.

- Or provide credit for international trade transactions, and minimize exposure to the risks of exchange rate changes.
    - Trade of goods takes time… so inventory in transit must be financed… foreign exchange market provides a source of credit. (through specialized instruments)
- Provides hedging facilities for transferring foreign exchange risk to someone else more willing to carry risk.

- Market Participants:
    - FX market consisting of two tiers: interbank or wholesale market, and the client or retail market.
    - Five broad categories of participants operate within these two tiers:
        - 1. Bank and Nonbank Foreign Exchange Dealers:
            - Both in interbank and client markets.
            - Profit by buying foreign exchange at a "bid" price and reselling it at a slightly higher "offer" or "ask" price.
            - Competition amongst dealers worldwide narrows the spread + contributes to efficiency of the market.
            - Dealers in the foreign exchange departments of large international banks often function as market makers.
                - The stand willing at all times to buy and sell the currencies specialized in (say what their customers demand) and thus maintain an inventory position in those currencies. But participate in those currency markets less important in filling customer needs.
                - Trade w/ other banks in their own monetary centers and other centers around the world in order to maintain inventories within the trading limits set by bank policy.
                - Limit important for the profit incentive of dealers
                - Small-to-medium size banks are likely to participate but not be market makers in the interbank market. i.e don't maintain significant inventory positions, they buy from and sell to larger banks to offset retail transactions with their own customers
        - 2. Individuals and Firms Conducting Commercial and Investment Transactions:
            - Importers/exporters, international portfolio investors, MNEs, tourists, and others use the FX market to facilitate commercial or investment transactions. Or to hedge foreign exchange risk as well.
        - 3. Speculators and Arbitragers:
            - Seek profit from trading in the market itself.

- Self-interested→ don't work for clients and don't need to ensure continuous market.
    - Seek all profit from changes in the exchange rates (whereas dealers do this + profit from spread between bid and offers as well)
    - i.e. simultaneous exchange rate differences in different markets.
- Banks act as both exchange dealers and as speculators/arbitragers as traders are often employed by and conduct on behalf of major banks.

- 4. Central Banks and Treasuries:
    - Use the market to acquire or spend their country's foreign exchange reserves as well as to influence the price at which their own currency is traded.
    - Non-profit motive but influencing foreign exchange value of their currency in a manner beneficial to the interest of their citizens or political agenda.
    - That being said, they are willing loss takers.—no profit motive
- 5. Foreign Exchange Brokers:
    - Agents who facilitate trading between dealers w/o themselves becoming principals in the transaction.
    - Charge small commission per transaction
    - Connects buyers with sellers of currency.
    - Dealers use broker to expedite the transaction and to remain anonymous (identity of participants may influence short-term quotes)
- 6. Continuous Linked Settlement and Fraud:
    - Introduced 2002.
    - Eliminates losses if either party of a foreign exchange transaction is unable to settle with the other party.
    - Should help counteract fraud in fx market as well.

- Transactions in the Foreign Exchange Market:
    - Can be executed on a spot, forward or swap basis
    - Going broader: foreign currency options, futures, swaps
    - Spot Transactions:
        - Purchase of foreign exchange in interbank market, with delivery and payment between banks to take place usually on 2nd following business day.
        - Date of settlement is termed "value date"
        - Almost immediate delivery of foreign exchange.
    - Outright Forward Transactions:
        - "Forward"

- Requires delivery at a future value date at a specified amount of one currency for a specified amount of another currency
- FX rate established at time of agreement, w/ payment and delivery not required until maturity.
- Usually quoted for value dates of one, two, three, six and twelve months.
- Payment is on the 2nd business day after the even-month universe of the trade.
- "buying euros forward for dollars" is the same as "selling dollars forward for euros"

- Swap Transactions:
  - Simultaneous purchase and sale of a given amount of foreign exchange for two different value dates w/ same counterparty.
  - "Spot against forward"→ dealer buys a currency in the spot market and simultaneously sells the same amount back to the same bank in the forward market.
  - No foreign exchange risk because it's a single transaction w/ same counterparty.
  - Forward-Forward Swaps:
    - Dealer sells 20,000,000 pounds forward for dollars for delivery in say 2 months at 1.8420USD/pound.
    - And simultaneously buys 20,000,000 pounds forward for delivery in 3 months at 1.8400USD/pound.
    - Difference between buying price and selling price is equivalent to the interest rate differential (which is the interest rate parity) between the two currencies.
    - Technique for borrowing another currency on a fully collateralized basis.
  - Nondeliverable Forwards (NDFs)
    - Possess the same characteristics and documentation requirements as traditional forward contracts, except they are settled only in US dollars; the currency being sold or bought forward is not delivered.
    - NDFs are contracted offshore—in NY for a Spanish investor.
      - Beyond the regulatory reach of domestic government.
    - Used primarily for emerging market currencies, currencies that typical do not have open spot

market currency trading, liquid money markets, or quoted Eurocurrency interest rates.
        - NDF markets usually develop for country currencies having large cross-border capital movements, but still subject to convertibility restrictions.
            - Chinese reninbi, Chilean Peso, Taiwanese Dollar, Brazillian reais.
        - Pricing of DNFs reflects basic interest rate differentials, like regular forward contracts, plus an additional premium charged by the bank for dollar settlement.
        - Sometimes there is no accessible or developed money market for interest rate setting and so pricing of NDF takes a more speculative element (Based on what spot rates might be the time of settlement)
        - NDFs are traded and settled outside the country of the subject currency, and therefore are beyond the control of the country's government→ gray market implications of trading that currency.
        - Problems of NDFs typically involve its fixing of spot rate on the fixing date, the spot rate at the end of the contract used to calculate the settlement.
        - NDFs important for many emerging markets.— look into. Best way to manage risk under certain conditions (find out what they are). Similar to a future.
- Size of Foreign Exchange Market:
    - Daily global net turnover in FX market to be $3.2 trillion.
    - Swaps dominate then Spot then Forwards.
    - Geographical Distribution
        - UK (London) continues to be the world's major foreign exchange market.
        - United States follows, then Japan (Tokyo), then Singapore, then Switzerland then Hong Kong.
        - Relative growth of currency trading in Asia vs Europe over past 15 years is pronounced, as the growth of the Asian economies and markets has combined with the introduction of the euro to shift currency exchange activity.
    - Currency Composition:

        - Dollar/euro and dollar/yen continue to dominate global trading.
        - Chinese renminbi will move into greater prominence in the future, not just the big three (dollar, euro, yen)
- Foreign Exchange Rates and Quotations:
    - Foreign exchange rate is the price of one currency expressed in terms of another currency
    - A quote is a statement of willingness to buy or sell at an announced rate.
    - $1.20/orange…. 1.20 is the price, orange is the unit.
    - Exchange Rate Quotes:
        - CUR1/CUR2
            - Cur1 is base currency while the other is called the quote or price currency.
            - Quotations always indicates the number of units of the price currency, CUR2, required in exchange for receiving one unit of the base currency, CUR1
- Market Conventions:
    - European Terms:
        - The quoting of the quantity of a specific currency per one US dollar.
        - Base currency used to quote a currency's value has typically been the US dollar.
        - Quoted in terms of number of units of currency to equal one US dollar.
        - Look to exhibit 6.7
        - Euro and pound sterling are exceptions and are normally quoted in American terms; the US dollar price of one euro and the US dollar price of one-pound sterling.
    - American Terms:
        - Used in quoting rates for most foreign currency options and futures, as well as in retail markets that deal with tourists and personal remittances.
    - Direct and Indirect Quotations:
        - Direct quote:
            - Price of a foreign currency in domestic currency units.
        - Indirect Quote:
            - Price of the domestic currency in foreign currency units
        - In retail exchange, common practice to quote the home currency as the price and the foreign currency as the unit.
    - Bid and Ask Rates:
        - The market for buying and selling currencies whether it be retail or wholesale uses two different rates… one for buying and one for selling.

        - A bid is the price in one currency at which ad ealwer will buy another currency
        - An ask price is the price at which a dealer will sell the other currency.
        - Dealers bid at one price and ask at a slightly higher price, making profit from the spread.
        - Spread maybe larger for currencies traded infrequently, in small volumes or both.
    - Cross Rates:
        - Many currencies are only inactively traded, so their exchange rate is determined through their relationship to a widely traded third currency.
    - **Interbank Arbitrage:**
        - Cross rates can be used to check on opportunities for intermarket arbitrage.
        - If synthetic rate different from quoted rate, opportunity to profit from arbitrage between the three markets exists→ Triangular arbitrage. (Page 174/5)
        - Such triangular arbitrage can continue until exchange rate equilibrium is reestablished-→ calculated cross rate eventually equals the actual quotations, less any tiny margin for transaction costs.
    - Percentage Change in Spot Rates:
        - Say we are in the US and looking @ MXP10.00/USD going to MXP11.00/USD
        - Foreign Currency Terms:
            - When the foreign currency price (quote) of the home currency (base) is used, Mexican pesos per US dollars for example, the formula for the percent change int eh foreign currency becomes
                - (Beginning rate- Ending rate)/ Ending rate *100
        - Home currency terms
            - When the home currency price (quote) for a foreign currency (base) is used, therefore the reciprocals of the numbers used above.
                - (Ending rate- beginning rate)/Beginning rate *100
                    - Important: here we get the reciprocal of what was the case in foreign currency terms→ look at page 175
                    - Remember which currency is designated as home currency matters
    - Forward Quotations:
        - Forward rates are typically quoted in terms of points, or *pips*, the last digits of a currency quotation, depending on currency.

        - Cash rates→ forward rates of one year or less maturity
        - If longer in maturity→ Swap rates.
        - The points represent the difference between the forward rate and the spot rate.—spot rate never given on a point basis.
        - Observe exhibit 6.12
        - Forward bid and ask quotations loner than two years are called swap rates.
        - As mentioned earlier, many forward exchange transactions in the interbank market involve simultaneous purchase for one date and sale (reversing the transaction) for another date. –
        - This swap is a way to borrow one currency for a limited time while giving up the use of another currency for the same time. → it is a short-term borrowing of one currency combined with a short-term loan of an equivalent amount of another currency.
        - Swap rate expresses the net interest differential on a point basis rather than as an interest rate.
    - Forward Quotations in Percentage Terms:
        - The % per annum deviation of the forward from the spot rate is termed the forward premium→ can be positive or negative i.e. premium or discount.
        - This premium or discount depends on which currency is the home or base currency as with the calculation of percentage changes in spot rates.
        - Foreign Currency and Home Currency terms look to page 177.

Chapter 7: International parity Conditions:

- Prices & Exchange Rates:
    - If identical products or services can be sold in 2 different markets and no restrictions exist on the sale or transportation cots of moving the product between markets, the price should be the same in both markets→ law of one price.
    - The product's price may be stated in a different currency but the price of the product should still be the same.
        - P$*S=Peuro
        - S→ spot exchange rate.
        - We can also deduce the exchange rate giving markets are efficient using the two relative prices:
            - S= Peuro/P$
- Purchasing Power Parity and Law of One Price:
    - If law of one price holds, PPP exchange rate could be found from any individual set of prices.
    - That is, by comparing prices of identical products denominated in different currencies, one could determine the real or PPP exchange rate that would exist if markets were efficient. → ABSOLUTE VERSION.

    - Absolute PPP states that the spot exchange rate is determined by the relative prices of similar baskets of goods. → BIG MAC INDEX.
    - Read Page 187.
    - Although a sizeable undervaluation or overvaluation might appear based on the example the theory of purchasing power parity is supposed to indicate where the value of currencies should go over the long-term and not necessarily the value today.
    - Less extreme form of this principle would be that in relatively efficient markets, the price of a basket of good would be the same in each market. Replacing the price of a single product with a price index allows PPP exchange rate between two countreis to be stated as:
        - S=PIYen/PI Dollars.
        - Where PI yen and PI dollars are price indices expressed in local currency for Japan and the United States respectively. Again look @ page 187.
- Relative Purchasing Power Parity:
    - Relative PPP holds that PPP is not particularly helpful in determining what the spot rate is today, but that the relative change in prices between two countries over a period of time determines the change in the exchange rate over the period.---
        - More specifically: if the spot exchange rate between two countries starts in equilibrium, any change in the differential rate of inflation between them tends to be offset over the long run by an equal but opposite change in the spot exchange rate.
        -

- Types of transactions that take place in the interbank market important
- Exhibit 6.3 not so important
- Empirical Tests of Purchasing Power Parity:
    - Tests have for the most part not proved PPP to be accurate in predicting future exchange rates.
    - Goods and services do not in reality move at zero cost between countries and in fact many services are not tradable—like haircuts.
    - Many G&S are also not the same quality across countries, reflecting differences in tastes and resources of the countries of their manufacture and consumption

    - 2 general conclusions:
        - 1. PPP holds up well over the very long run but poorly for shorter time periods
        - 2. The theory holds better for countries with relatively high rates of inflation and undeveloped capital markets.
- Exchange Rate Indices: Real and Nominal
    - To find out whether an exchange rate is overvalued or undervalued in terms of PPP, we can use exchange rate indices. These indices are formed by trade-weighting the bilateral exchange rates between the home country and its trading partners.
    - The nominal effective exchange rate index→ uses actual exchange rates to create an index, on a weighted average basis, of the value of the subject currency over time. → Simply calculates how the currency value relates to some arbitrarily chosen base period, but it is used in the formation of the real effective exchange rate→ indicates nothing about the true value of the currency or anything related to PPP.
    - The real effective exchange rate index indicates how the weighted average purchasing power of the currency has changed relative to some arbitrarily selected base period. → Look @ page 190 for formula.
    - If changes in exchange rates just offset differential inflation rates—if purchasing power parity holds—all the real effective exchange rate indices would stay @ 100.
        - If an exchange rate strengthened more than was justified by differential inflation, its index would rise above 100.
        - If real exchange rate index is over 100, then the currency is overvalued from a competitive perspective.--> undervalued if under 100.
        - Besides measuring deviations from PPP, a country's real effective exchange rate is an important tool for mgmt. when predicting upward or downward pressure on a country's balance of payments and exchange rate, as well as an indicator of the desirability to produce for export from that country.
- Exchange Rate Pass-Through:
    - Incomplete exchange rate pass through is one reason that a country's real effective exchange rate index can deviate for lengthy periods from its PPP-equilibrium level of 100. -→ The degree to which prices of imported and exported goods change as a result of exchange rate changes is termed pass-through.
    - If the euro appreciated 10% versus the US dollar, the new spot exchange rate should result in the price of the BMW in the US rising a proportional 10%.... if the price in dollars increases by the same percentage change as the exchange rate, the pass through of exchange rate changes is complete (100%)
    - If he price in dollars rises by less than the percentage change in exchange rates (as is often the case in international trade, the pass

through is partial. May imply that BMW is absorbing a portion of the adverse exchange rate change. → smaller profit margins, cost reductions or both.--> when euro appreciates, inputs cost less to import into Germany.
    - Also likely that some time may pass before all exchange rate changes are finally reflected in the prices of traded goods.
    - Concept of Price Elasticity of demand is useful in determining the desired level of pass-through.
        - Recall price elasticity of demand for any good is the percentage change in quantity of the good demanded as a result of the percentage change in the good's own price→ Page 193.
        - If the absolute value of ep is less than 1.0, then the good is relatively inelastic. … if greater than 1 it is a relatively elastic good.
        - Inelastic→ unresponsive to price changes, may often demonstrate high degree of pass through as quantity demanded always left not too unchanged. -→ Dollar revenue would rise, but euro revenue would remain the same.
            - Price elastic products respond in the opposite way.
            - i.e. if the 20% euro appreciate resulted in 20% higher dollar prices, US consumers would decrease the number of BMWs purchased—i.e. price elasticity of demand>1, total dollar sales revenue would decline.
- Interest rates and Exchange rates:
    - Considering how interest rates are linked to exchange rates
    - Fisher Effect:
        - States nominal interest rates in each country are equal to the required real rate of return plus compensation for expected inflation. Page 193 formula.
        - Empirical tests have shown that the fisher effect usually exists for short-maturity government securities such as T-bills and notes.
        - Comparisons based on longer maturities suffer from the increased financial risk inherent in fluctuations of the market value of the bonds prior to maturity. And compariisons based on private sector securities are influenced by unequal creditworthiness of the issuers.
- The International Fisher Effect:
    - The relationship between the percentage change in the spot exchange rate over time and the differential between comparable interest rates in different national capital markets is known as the international fisher effect.
    - "Fisher-Open"→ states that the spot exchange rate should change in equal amount but in the opposite direction to the difference in interest rates between two countries.

        - Formula found Pg. 194
    - Justification for international fisher effect:
        - Investors must be rewarded or penalized to offset the expected change in exchange rates.
        - IFE does predict that with unrestricted capital flows, an investor should be indifferent to whether his bond is in dollars or yen because investors worldwide would see the same opportunity and compete it away.
        - But expected change in exchange rates might consistently be more than the different in interest rates.
- The Forward Rate:
    - Forward rate is an exchange rate quoted today for settlement at some future date.
        - It states the rate of exchange at which a foreign currency will be bought forward or sold forward at a specific date in the future (typically after 30, 60, 180, 270, 360 days)
        - The forward rate is calculated for any specific maturity by adjusting the current spot exchange rate by the ratio of euro currency interest rates of the same maturity for the two subject currencies. Page 194-195 look @.
    - Forward Premium or discount is the percentage difference between the spot and forward exchange rate, stated in annual percentage terms.
    - Because the forward rate for any particular maturity utilizes the specific interest rates for that term, the forward premium or discount on a currency is visually obvious→ the currency with the higher interest rate will sell @ a forward discount and the currency with the lower interest rate will sell forward at a premium.
    - Forward rate calculated using—spot rate, foreign currency deposit rate, and the home currency deposit rate→ and is not a forecast of the future spot exchange…although frequently used by managers as a forecast.
- Interest Rate Parity (IRP)
    - Provides the link between the foreign exchange markets and the international money markets
    - States: the difference in the national interest rates for securities of similar risk and maturity should be equal to, but opposite in sign, to the forward rate discount or premium for the foreign currency, except for transaction costs. Look @ example on page 196.

IF quiz 1:

Multiple choice 15 of them, and 3 problems where you show your work 10 points each= 30 points. Time 90 mites, starting at 6:05pm.

we have to make our own formula sheet,1 page front and back I think

Note: end of chapter problems in the book are like 1 multiple choice question in the quiz.

Remains true to what he talks about in class. waste of time to read everything with the same intensity in the textbook. focus more on what we talked about in class

Important topics: → like the gold standard. -→ floating exchange rate system → impossible trinity also important → and emerging market choices → triangular arbitrage for sure there-> understanding those things like China's reserves, balance of payments + required readings → main story from those readings+ know major events in foreign exchange and concerns a given country yes, so know the currency regimes that involve major events → currency crisis in asia in 90s he mentioned regarding this last point. → know how market quotes terms, like American way euorpean way etc. no definitions.

Any formulas related to triangular arbitrage is not allowed on the formula sheet. No triangles no arrows.

Lecture September 30, 2014→ missed last class.

- Carry trade definitely on next exam.
- Starting with slide: "Illustrative case: The Asian crisis"
- Malaysia, Thailand, and Korea probably the hardest hit.
- Currency crisis led to deeper financial crisis, banking crisis and economic crisis, meaning that these countries experienced an economic downturn. Usually economic crisis comes later. Global financial crisis of 2009 started in the mortgage market then spread to other financial markets, then spread to economic markets, in terms of recession. Real economic problems come after some financial troubles.
- Unless your foreign exchange reserve is very rich, assume you're going to run out of them.
- Why did international investors at the time not believe that the currency reflected the true value of the currency?
    - Thailand: export led fast economic growth, start industrialization, there is a relationship between the rate at which money is flowing in the current account surplus and what you're spending and doing with the money in the banking sector.
    - The good side was Thailand was trying to industrialize and manufacture to export more, and so importation of materials and machineries was necessary.
    - A lot of this foreign exchange that came in and the new riches in the banking sector…. A lot of the money in the banking sector started to

loan with tacit collusion with government and politicans to a lot of dubious sectors like real estate—crony capitalism.
    - Disproportionately large amount of money being lent out for real estate purposes. Which are extremely liquid, in the presence of the crisis, if things go bad suddenly, you can't liquidate those assets that fast, for example real estate if you want liquidation, you have to sell at deep discounts.
    - Unproductive investments and loans by the banking sector, banks were giving out terrible loans. They would give a loan much greater than the value of collateral→ political connections and crony capitalism.
    - Strong financial regulation was missing, and credible accounting missing.= financial infrastructure that was missing.
        - Crucial for sustainable growth to any economy
        - This problem exists in china now, not many people believe in the numbers.
- Russian Crisis:
    - After collapse of USSR
    - Debt servicing was a problem in the USSR.
    - Needed a lot of debt to develop their free enterprise system in Russia, has to guide the economy and guiding the economy involved borrowing funds.
    - 1998→ became apparent that the currency value of Russia as not something that it could defend→ had a lot of foreign currency denominated debt, us denominated→ when the debt comes due, they wont be able to service it. The currency market gets hit. Russian stock market also fell.
    - When selling Russian stocks, they get rubles, then sell the rubles to get back to their own currency→ currency weakens→ positive feedback loop. In the end there was a default of Russia's debt.
- Argentine Crisis:
    - Turkey and Argentina both known for inflation problems.
    - They had a currency boad, with a fixed rate to the US. Given the foreign exchange reserves, your domestic money supply has to equal.
    - Close to dollarization
    - The ratio that you have is determined by the parliament and not by the central bank.
    - Argentina always had the deficit problem, and heavily fiscal spending, it always
    - IMF suggestion that Argentina go for a currency board.
- Forecasting in Practice:
    - Technical analysis popular in foreign exchange market and commodities, much more important than its importance in the stock market.
- Forecasting in Practice:

    - Parity conditions that we've discussed provide some discipline. Can always check the sanity of your forecasts, you can use the parity conditions to verify.
    - If you're a trader what would be your proper horizon for forecasting, you wouldn't be interested in long term horizons in forecasting, day to day and maybe weeks at most. Because they pay so much attention to technical analysis.
    - Have to consider policy shocks.
    - The role of the economic theories, like parity conditions, in forecasting. What thing he said: these acts as sanity checks that assumptions that he is making and forecasting he develops do they make sense knowing what we know about the relationship of economic variables like the parity conditions.--> important to understand about forecasting.
    - What will change over my forecasting horizon? Policy shocks in fx markets, interest rate policies.
    - The fundamental thing about technical analysis is this, the belief is the market forces are going to reflect the opinion of the market; in the end it's a question of demand and supply, so if you look at yesterday's price it already reflects people's analysis so if buying future must be good based on whatever analysis they've done, they don't need to do the fundamental analysis, they just observe the market and analyze under these conditions.
- Canada's Dutch disease
    - Important reading.
- Carry Trade:
    - Explaining it.
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