

International Trade (cont)



Voluntary Export Restraints

- When you protect your industries, you hurt yourself and the rest of the world
- Consider the voluntary export restraints imposed on Japanese cars in 1981
 - 1981-84 1.68 million cars
 - 1984-85 1.85 million cars
 - 1985-94 2.3 million cars
- Japanese market share fell
 - 22.6% in 1982
 - 18.3% in 1984

Voluntary Export Restraints

- US auto industry employment rose
 - 699,000 in 1980
 - 876,000 in 1985
- Detroit profits rose
 - -\$4 billion in 1980
 - +\$9 billion in 1984-85
- \$13 billion turn around, \$5 billion due to the growth in the economy, and \$8 billion due to the VERs

Voluntary Export Restraints

- “There is no such thing as a free lunch”
- Japanese car prices rose by \$2,500, and American consumers paid \$5 billion more for Japanese cars
- American car prices rose by \$1000, and American consumers paid \$8 billion more for American cars
- So American consumers paid \$13 billion more to boost Detroit profits by \$8 billion

Voluntary Export Restraints

- Did we save jobs in Detroit?
 - We saved thousands of jobs in Detroit, but it cost Americans \$160,000 per job per year to save a job which paid \$40,000 a year
- Did we save jobs in the US?
 - Protection in one industry backfires on others
 - When you protect steel, textiles, and ball bearings (all used in auto production) you raise costs to the auto industry and make them less competitive
 - Saving jobs in steel causes less jobs in autos

Voluntary Export Restraints

- Countries are likely to retaliate
 - In 1983 US restricted textile imports from China
 - China responded by reducing imports of chemicals and farm products from the US
 - Save jobs in North Carolina, but lose them in Kansas
- Protection causes the exchange rate to appreciate
 - Hurts exports in unprotected markets
 - Swap jobs in one industry for jobs in another

Voluntary Export Restraints

- Ball bearings -1993
- Metal flatware 1962-1994
- Pottery and chinaware 1962-1994
- Textiles and clothing 1974-1992
- Passenger cars 1981-1994
- Steel and steel products 1969-1974, 1984-1992
- Machine tools 1987-1993

Heckscher-Ohlin Theory

- Countries export the products that use their abundant factors intensively (and import the products using their scarce factors intensively)
- Labor abundant – higher ratio of labor to other factors than other countries
- Labor-intensive – labor costs are a greater share of its value than they are for other goods

Heckscher-Ohlin Theory

- US has lots of land, so land is relatively cheap. Thus wheat will be cheap to grow, and thus exported.
- US has comparative advantage in agriculture and chemicals
- Japan is resource poor (no oil or raw materials). So they import natural resource intensive products (agriculture, fish, forestry, and minerals)
- After WWII, comparative advantage in labor-intensive manufactures
- Labor productivity in manufacturing is high relative to agriculture

Relative Factor Growth

	Non-Human Capital 1963-1980	R&D Scientists & Engineers 1965-1984	All Skilled Labor 1963-1984
Japan	8.3%	5.0%	2.6%
US	1.4%	0.1%	0.9%

Growth in factor per member of national labor force

Industrial Robots

1990	Units Made	Units Installed
Japan	79,867	274,200
US	2,217	40,000

So now Japan exports technology intensive products

Japanese Trade

- The structure of Japanese trade looks fine from the theory of comparative advantage and Heckscher-Ohlin looking at net flows
 - Net export surplus in manufactures
 - Net export deficit in fuels
- What about gross flows?
 - Gross exports and gross imports
 - There is more *intra-industry* trade in other countries
 - US and Europe import and export the same types of products
 - Differentiated products by brand name and design
 - Lexus, BMW, Jaguar, Lincoln Continental

Intra-Industry Trade

- Measure of intra-industry trade

$$m = \frac{\sum_{i=1}^n [(EX_i + IM_i) - |EX_i - IM_i|]}{\sum_{i=1}^n (EX_i + IM_i)}$$

- If you only export or import good i
 $(EX_i + IM_i) - |EX_i - IM_i| = 0$
- If $EX_i = IM_i$ for all i, $m = 1$
- $0 < m < 1$

Intra-Industry Trade

- Measure of intra-industry trade

– Australia	0.22
– Japan	0.25
– US	0.60
– Germany	0.66

- Imported manufactures

– Japan	5.8%
– US	9.3%

Intra-Industry Trade

- Australia and Japan have unusually low imports of manufactures
- Possible conclusions, explanations
 - Japanese markets are closed
 - Distance from other markets and transportation costs may determine extent of intra-industry trade
 - Consumer preferences
 - Lager (Kirin), Malt (Suntory), Dry (Asahi), Draft (Sapporo)
 - Unique factor endowments – capital, education, labor, oil, coal, and arable land

New Trade Theory

- Helpman & Krugman
- With increasing returns, imperfect competition, and oligopolistic behavior, strategic trade policy can help an economy grow
- Protect infant industries in industries with increasing returns. Then domestic firms grow, benefit from economies of scale, and become competitive in the world market

Japanese Trade Policy

- 1950s 1960s
- High tariffs and non-tariff barriers (autos, ships)
- Firms grow in domestic markets
- Have economies of scale
- Once competitive, lift import restrictions
- Note: consumer electronics never had such protection

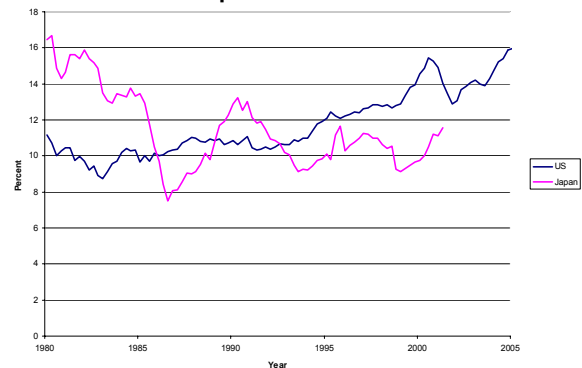
Arguments for protection

- Infant industry
 - Economies of scale, learning by doing
- National defense
 - Preserve way of life
 - Self sufficiency in food
 - Specialization is risky (depend on one industry)
- Raise revenue (LDCs)
- Terms of trade (quantity of exports needed to get a unit of imports)
 - Export price / import price
 - Exercise monopoly power (OPEC)
 - Limit exports, prices rise, give up less oil for imports
 - Exercise monopsony power
 - Raise tariffs, our demand falls, price falls, so foreigners pay some of the tariff
- Protection against dumping?

Japanese Markets: Closed?

- Imports
 - Japan 11.3% GDP (2001)
 - US 13.8% GDP (2001)
- Tariffs are lower than in US or Europe
 - 2.9% (import share weighted average)
- Fewer import quotas on industrial products than US

Imports / GDP



Japanese Markets

- Non-tariff barriers
 - Administrative guidance
 - Discriminatory standards and regulations
 - Selective government procurement
 - Most high tech sector products are not an issue
 - Pharmaceuticals are a major exception
 - Testing requirements and product approval take years
 - Testing must be done on Japanese
 - But Japanese and foreign companies face same standards
 - And time for license is same as US FDA

Japanese Markets

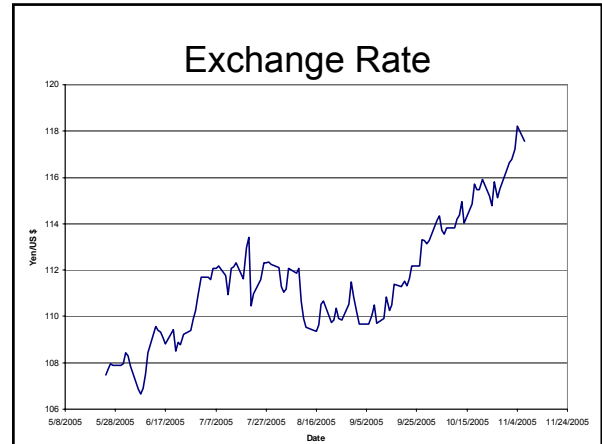
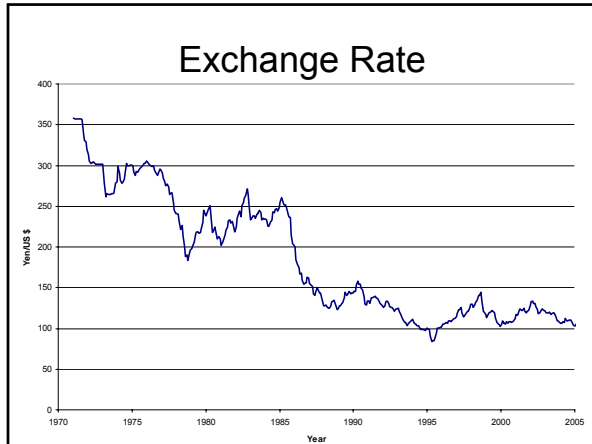
- Some markets are closed, but also in the US
 - Japanese rice market (no imports until 1995)
 - US sugar market
- Measure protection by unit value comparisons
 - Compare import unit values with domestic producer unit values
 - Cost, insurance, and freight (c.i.f) at port with domestic producer price
 - Difference is a measure of protection (formal and informal)
- Japan protects agriculture, and small number of manufactures

Japanese Markets

- Food and beverages 280.7%
 - Most protected
 - Oilseeds, tea and roasted coffee, milled rice, wheat, soybeans, bread, tobacco, confectionary goods, dairy products
- Machinery 140.2%
 - Radios and television sets, communication equipment
- Chemical products 128.3%
 - Caustic soda, methane derivatives, cosmetics, toilet preparations, gasoline
- Textiles 102.5%
 - Clothing
- Metal products 59.5%
 - Clay refractories, copper ore

Price Differentials

- Are prices higher in Japan?
- And if so, why?
- Prices seem higher in Japan
- The current exchange rate is \$1 = ¥117
- What if the exchange rate was different?
 - \$1 = ¥200
 - \$1 = ¥360



Exchange Rate

- Why is the exchange rate where it is?
- The theory of purchasing-power parity says that in the long run exchange rates should move towards rates that would equalize the prices of an identical basket of goods and services in any two countries.
- In the long run, the exchange rate should insure PPP (purchasing-power parity) for tradable goods.

Big Mac

The Big Mac PPP is the exchange rate that would leave a burger in any country costing the same as in America.

Country	Big Mac price in local currency	Big Mac price in US dollars	PPP exchange rate (local/US)
United States	2.96	2.96	1.00
Argentina	1.48	1.50	-0.99
Australia	2.22	2.12	1.05
Brazil	1.30	1.80	-0.72
Canada	3.37	3.43	-0.98
China	2.38	1.40	1.70
France	1.20	1.30	-0.92
Germany	1.14	1.15	-0.99
India	4.48	0.57	7.86
Japan	1.68	1.41	1.20
South Korea	1.28	1.00	1.28
UK	1.22	1.12	1.09
US	2.96	2.96	1.00
Yemen	1.22	0.50	2.44

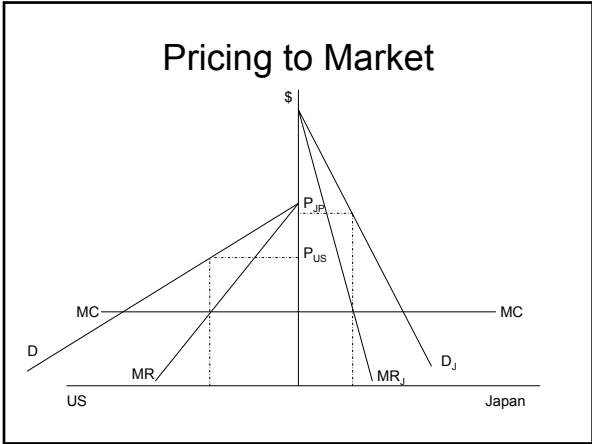
Price Differential

- Compare prices for tradable goods
 - US Japan Joint Retail Price Surveys
 - US Dept of Commerce & MITI
 - Manufactured goods by country of origin
- Price level in Japan compared with US prices = 1.0

Products from:	1991	1989
Japan	0.91	0.88
U.S.	1.42	1.54
Europe	1.40	1.41
Exchange Rate	¥137/\$	¥142/\$

Price Differential

- Both US and Japanese firms charge more abroad
 - Differential on US goods is larger mostly due to two areas
 - US exports manufactured foods and brand name products (cosmetics, golf equipment)
 - Japan's farm protection policy leads to high food prices, and Japan has a low elasticity of demand for brand name products



Price Differential

- PPP exchange rate for tradable goods
 - Around ¥110 - ¥115 per \$US
 - About 1/3 of GDP is tradable
- In Japan, productivity in tradables has grown much more quickly than productivity in nontradables

Productivity Growth 1973-1993	Japan	US
Tradables	5.1%	2.3%
NonTradables	1.5%	0.4%

Price Differentials

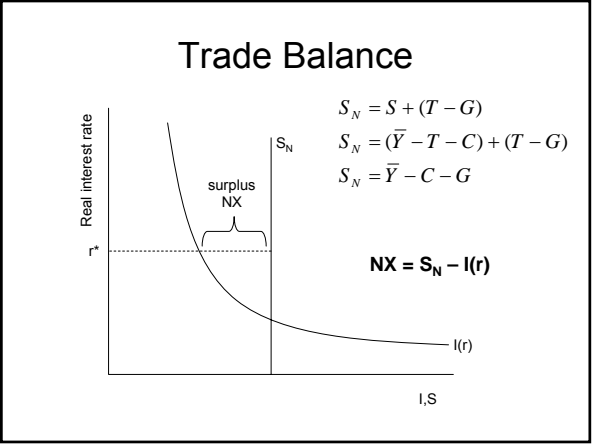
- Relative to the US, nontradables are much less productive
 - Housing will be much more expensive because Japan has less land and is so crowded
- PPP exchange rate for nontradables is around ¥205 = \$1
 - Around 2/3 of GDP is nontradable

Price Differentials

- So PPP exchange rate for all goods (tradable and nontradable) in GDP is around ¥180
- But the market exchange rate reflects only tradable goods
- When you visit Japan as a tourist, you mostly purchase nontradable goods
 - Hotel rooms, restaurant meals, transportation services
- So Japan will be expensive to visit until productivity in nontradables rises dramatically

Trade Balance

- Assume a small economy with perfect capital flows
- Small economy has little impact on world interest rates
- Residents have full access to world financial markets
- World interest rate r^* ($S_{\text{world}} = I_{\text{world}}$)



Trade Balance

- Trade balance depends on S, I, and interest rate
- What policies influence the trade deficit?
 - Increase in G, reduced S_N , increases trade deficit
 - Decrease in T, decreases S_N , increases trade deficit
- Protectionist policies affect the level of trade, but not the trade balance

Balance of Payments

- Systematic record of all payments between residents of one country and the rest of the world
- A credit is when \$ come in, a debit is when \$ go out
- Current account records the exports and imports of goods and services (NX)
- Capital account records all financial flows
- Current account + capital account = 0

Balance of Payments

- In the end, the balance of payments must balance out
 - When you run a trade deficit, you must have a capital inflow
 - When you buy something, you have to pay for it or owe it
 - When you buy a Toyota, those \$ must come back into the US somehow
 - To buy goods, to buy real estate, or to buy gov bonds

Trade Balance

- In the US, $I \approx S$
 - So when government runs a budget deficit, $(T-G)\downarrow$, then we need a capital inflow to finance it, and $NX\downarrow$
- $Y = C + I + G + NX$ or $Y - (C+I+G) = NX$
 - If the US consumes more than we produce (low savings), then we must borrow from abroad and run a trade deficit
 - If Japan insists on saving money, they must run a trade surplus

Trade Balance

- Is it bad to run a trade deficit?
 - Depends on how you spend the borrowed money
 - A trade deficit means a capital inflow (as you borrow from abroad)
 - Productive investment vs conspicuous consumption
- Is a bilateral deficit with Japan bad?
 - A bilateral deficit in a multilateral world is meaningless
 - US runs surplus with Australia, Australia runs a surplus with Japan, and Japan runs a surplus with the US
 - Political problem, not an economic problem

Japanese Markets

- If Japan removed all barriers (formal and informal)
 - Imports would rise by \$50 billion
 - Exports would rise by \$50 billion
- US Japan bilateral deficit falls from \$60 billion to \$51 billion
- If both US and Japan remove all trade barriers, the bilateral deficit might rise a little

International Finance

Bretton Woods

- Meeting in Bretton Woods, NH in July 1944 of Allied nations
- Established fixed but adjustable exchange rates (along with IMF and World Bank)
 - \$1 = ¥360
 - £1 = \$2.80
- Dollar is backed by gold
 - \$35/ounce of gold

End of Bretton Woods

- During the 1960s US runs large trade deficits with Vietnam War
- Too many \$ abroad (more \$ abroad than gold in the US)
- Two Tier gold market established in 1968
 - Only official transactions at \$35/oz
- Nixon suspends convertibility of \$ to gold in August 1971 (Bretton Woods is dead)

End of Bretton Woods

- Nixon puts the world on a dollar standard
- Smithsonian Agreement pegs \$1=¥308 in December 1971
- US moves to flexible exchange rates in Spring 1973
- US removes capital controls in 1974
- Official treasury policy is to defend floating exchange rates after 1975

Capital Controls

- Japan had strict capital controls
- Financial markets closed from the world until 1974
- All \$ earned from exports were exchanged for ¥ and held by BOJ
- Importers applied for licenses to obtain FX
- Limits on FX for foreign travel
- Borrowing and lending from foreign countries by private parties severely limited

Capital Controls

- Japanese can't buy foreign securities or real estate
- Foreigners can't buy Japanese securities or equities
- Would sacrifice the domestic economy to maintain fixed exchange rates
- When foreign reserves were depleted due to trade deficits, imports were cut (even if it slowed down the domestic economy)

Flexible Exchange Rates

- When Bretton Woods ends, the world goes to flexible exchange rates
- With flexible exchange rates, you want liberalization of financial markets
- Importers, exporters, investors want to hedge and speculate against exchange rate fluctuations
- So there is a need to create and deepen the foreign exchange market

Flexible Exchange Rates

- Flexible rates means BOJ need not intervene in the foreign exchange market
- No need to purchase FX brought back into the country
- Companies will want to diversify their foreign asset portfolios
- Thus capital controls are relaxed in the 1970s

Covered Interest Rate Parity

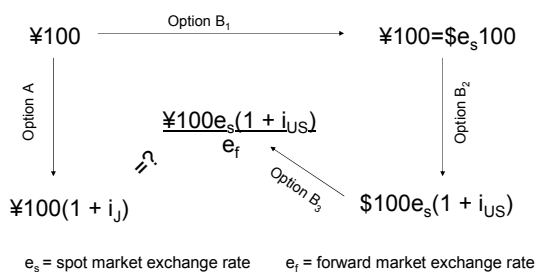
- In a world without capital controls, all arbitrage opportunities are exploited
- Yields on assets of comparable risks must be equalized
- Japanese short term capital market has been integrated into world capital market
- Covered interest rate parity between US and Japan holds since 1980

Forward and Future

- Forward market
 - Consists of contracts to make foreign exchange transactions of specified amounts on specified dates.
 - No margins are required
 - Major function of the forward market is “hedging”
- Futures market
 - Contracts consist of standardized amounts of future transactions to take place on preset dates
 - Speculation is typically done in the futures market
 - Nobody takes “delivery” on their contracts

Covered Interest Rate Parity

$$e = \$/\text{¥}$$



Covered Interest Rate Parity

$$(1 + i_J) = \frac{e_s}{e_f}(1 + i_{US})$$

The forward rate should be an unbiased predictor of the future spot rate

Largest Creditor

- Since 1986, Japan is world's largest creditor
 - US is the largest debtor
- This was made possible by
 - Internationalization of finance which permits large foreign debts and credits
 - Liberalization of finance so financial transactions are not regulated
 - Internationalization of yen so foreigners hold yen
 - US\$ 65%, Euro € 20%, JP¥ 5%