

International

International

Importance of the International Sector

- The fastest growing sector over time.
- Exports are approximately 14% of GDP.
- Imports are approximately 16% of GDP.
- Has major impact on pattern of employment, and pricing (inflation).

International

Total and Selected Exports and Imports, 2006

	Exports	Imports
China	56	92
Japan	10	39
Malaysia	5	14
Canada	14	8
Mexico	11	16
	141	160

Source: www.bea.gov, International Transactions, Exhibit 16a

International

Major sections

- Trade
- Trade Barriers
- Balance of Payments
- Foreign Exchange Market

Trade

Trade

Introduction

- One of the largest sectors, and with a fast growth rate.
- Included into other sectors as spending for imports.
- Calculated as exports minus imports.
- When imports exceed exports, there is a deficit.

Trade

Exports

- Exports are foreign purchases of domestic output.
- Exports are a function of foreign income and prices.

Trade

Imports

- Imports are purchases of foreign goods.
- Imports are a function of domestic income and price.

Trade

Fundamental Theorem of Exchange

- Voluntary trade is mutually beneficial.
- Proof
 - Buyer only buys when value exceeds its cost.
 - Seller only sells when value exceeds its cost.

Trade

Theories of Trade

- Absolute Advantage
- Comparative Advantage

Trade

Absolute Advantage

- Countries trade what they are the most efficient at producing internationally.
- If they are the most efficient producers of wheat, then they will trade wheat for everything else.
- Not a major determinant of international trade.

Trade

Comparative Advantage

- Trade the good that has lower opportunity cost of production within that economy.
- Explains a majority of international trade.

Trade

Comparative Advantage Classic Example

- The classic example by David Ricardo, 1817 involves England and Portugal.
- Portugal could produce wine and cloth more cheaply than England.
- Within England, cloth could be produced more cheaply than wine, so the English trade cloth for Portuguese wine.
- Portugal focuses more production on wine, both have more wine and cloth.

Trade

Comparative Advantage Another Example

- Comparative advantage applies to areas other than international trade.
- Suppose you are the BEST accountant and secretary in town. Which would you do?
- Since accountants earn more than secretaries, do the accounting and hire a secretary.

Examples

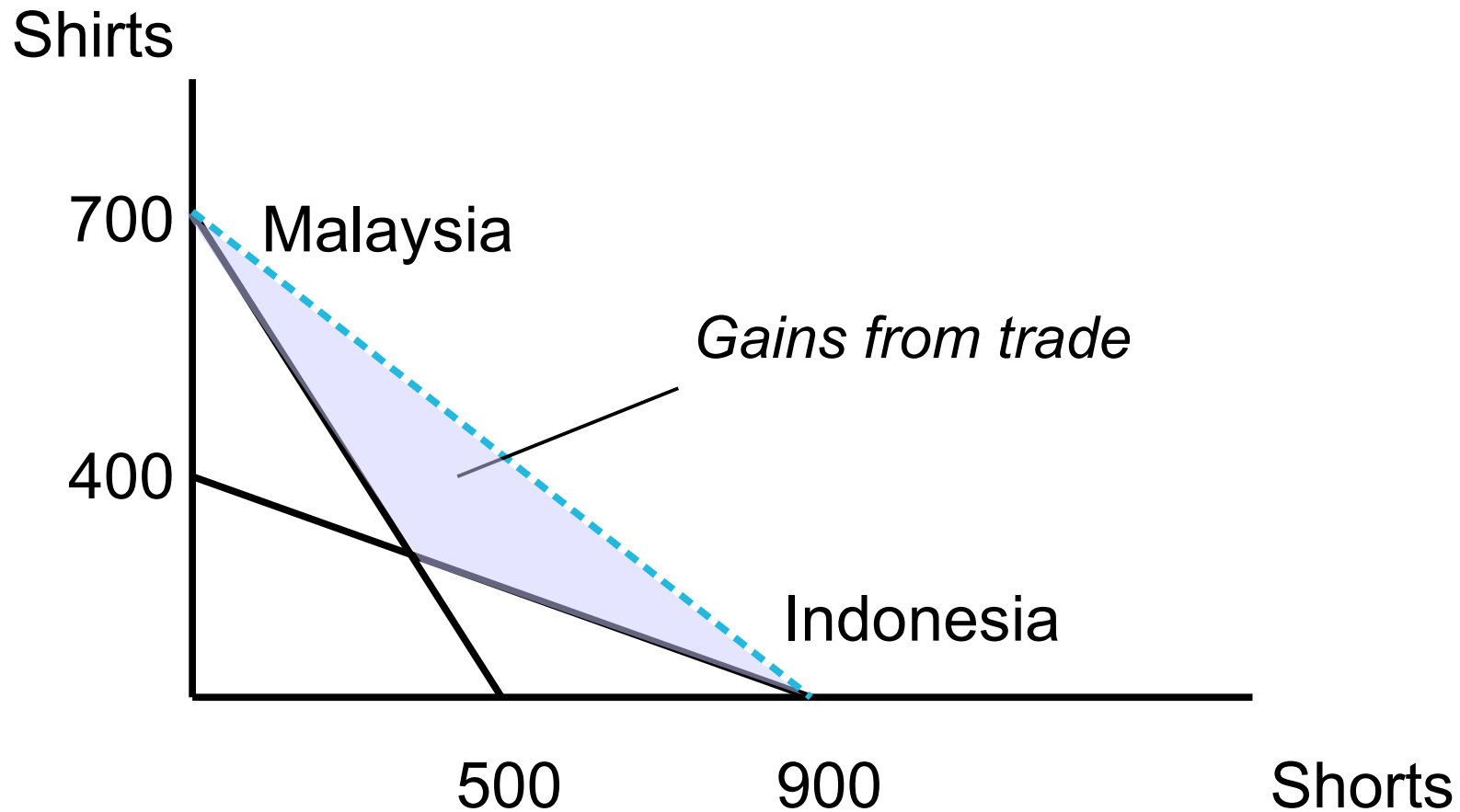
Absolute Advantage

- Determine the pattern of trade. Assume exchange takes place at the rate of one shirt for one short.

	Labor/Unit	Output
Malaysia		
Shirts	5	700
Shorts	7	500
Indonesia		
Shirts	9	400
Shorts	4	900

Example

Using Production Possibility Curves to Illustrate Gains from Trade



Examples

Absolute Advantage

- Since it takes less labor to make shirts in Indonesia compared to Malaysia, then Indonesia will make shirts for export.
- Shorts take less time to make in Malaysia compared to Indonesia so Malaysia will export shorts.
- How many shorts and shirts that will be exchanged cannot be determined from the data.

Examples

Comparative Advantage

- Determine the pattern of trade. Assume exchange takes place at one of beef for one ton of rice.

	Labor/Unit	Output
Brazil		
Beef	8	600
Rice	6	800
Argentina		
Beef	4	500
Rice	5	400

Examples

Comparative Advantage

- Even though Argentina is more efficient than Brazil in both beef and rice production, it will be to the benefit of both that Argentina specialize in beef and Brazil in rice.
- The exact amount of exchange cannot be determined with existing data.

Examples

Comparative Advantage/Gain on Trade

- Calculation assumes exchange takes place at one of beef for one ton of rice.

	Before		After		Exchange	
	Rice	Beef	Rice	Beef	Rice	Beef
Brazil	600	150	800		600	200
Argentina	200	250		500	200	300
	800	400	800	500	800	500

Notes: more beef is produced and exchanged, so both populations gain from trade.

Trade Barriers

Trade Barriers

There can be costs to trade.

- Firms facing imports may find profitability reduced.
- Workers may experience unemployment.

Trade Barriers

Trade Barriers

- Tariffs
- Quotas
- Standards
- Dumping
- Subsidies
- Domestic Content Rules

Trade Barriers

Tariffs

- Tariffs are a tax on imports, and sometimes, exports.
- Used in some countries to finance central government operations.
- More often used as a trade barrier to raise the cost of foreign goods above the cost of domestic goods.

Trade Barriers

Tariffs

- Domestic good producers often raise prices also when tariffs are in effect.
- Used to preserve domestic employment or to protect domestic industries.
- Tariffs can also be used as tool of retaliation. Tax mine and I will tax yours.
- Has triggered trade wars.

Trade Barriers

Quotas

- Quotas are a numerical restriction on imports.
- Has the effect of raising prices as supply is restricted against demand.
- “Nicer” than tariffs but revenue from increased prices does not go to the government.
- Other trading partner may reciprocate.

Trade Barriers

Standards

- Requires imports to meet certain safety, health, and other standards.
- More often than used as a way to restrict imports without appearing to do just that.

Trade Barriers

Dumping

- Selling products in a foreign market below cost.
- Problem is determining “cost”.
- Administered by the Dept. of Justice in the USA.
- Often, politically motivated.
- Firms found guilty face fines and very stiff tariffs.

Trade Barriers

Subsidies

- Governments pay domestic producers to export.
- Uses tax money.
- Done to preserve domestic employment.

Trade Barriers

Domestic Content Rules

- Governments require products to contain a specified percentage of locally produced components to escape regulation.

Balance of Payments

Balance of Payments

Balance of Payments

- Flow of international transactions over one year.
 - Flow of goods and services.
 - Flow of assets

Balance of Payments

Balance of Payments

- Current Account
- Capital Account
- Current = Capital
- Capital account finances current account

Balance of Payments

Balance of Payments/Current Account

- Exports – Imports +/- income +/- unilateral current transfers
- Inflows > outflows = surplus
- Inflows < outflows = deficit

Balance of Payments

Balance of Payments/Current Account/Income

- Inflows are investment income received from American investments overseas and compensation received from Americans working abroad.
- Outflows are investment income paid on foreign investments in America and compensation paid to foreigners working here sent overseas.

Balance of Payments

Balance of Payments/Current Account

- Inflows are receipts from exports.
- Outflows are payments for imports.

Balance of Payments

Balance of Payments/Current Account/Unilateral Transfers

- Receipts of unilateral transfers are inflows
- Payment of unilateral transfers are outflows
- Unilateral transfers can be foreign aid and charitable donations.

Balance of Payments

Balance of Payments/Capital Account

- Domestic purchases of foreign assets – Foreign purchases of domestic assets
- Inflows $>$ outflows = surplus
- Inflows $<$ outflows = shortage

Balance of Payments

Balance of Payments/Capital Account

- Inflows of capital are foreign purchases of domestic assets.
- Outflows of capital are domestic purchases of foreign assets.

Balance of Payments

Balance of Payments/Official Account

- Federal Reserve purchases of foreign assets –
Foreign central banks purchases of domestic
assets

Balance of Payments

Current = Capital

Balance of Payments

US International Transactions, 2006 (Billions)

Exports	\$2,096
Imports	-2,818
Unilateral Transfers	-88
Current Account	(810)
US owned assets abroad	-1,055
Foreign owned US assets	1,860
Derivatives	29
Other	-24
Capital Account	810

Source: US International Transactions, www.bea.gov

Balance of Payments

Exports	2,098
Goods	1,023
Food	66
Industrial Supplies	276
Capital Goods	414
Automotive	107
Consumer	130
Other	30
Services	422
Income	651

Balance of Payments

Imports	2,818
Goods	1,861
Food	75
Industrial Supplies	603
Capital Goods	418
Automotive	257
Consumer	446
Oil	302
Services	343
Income	614

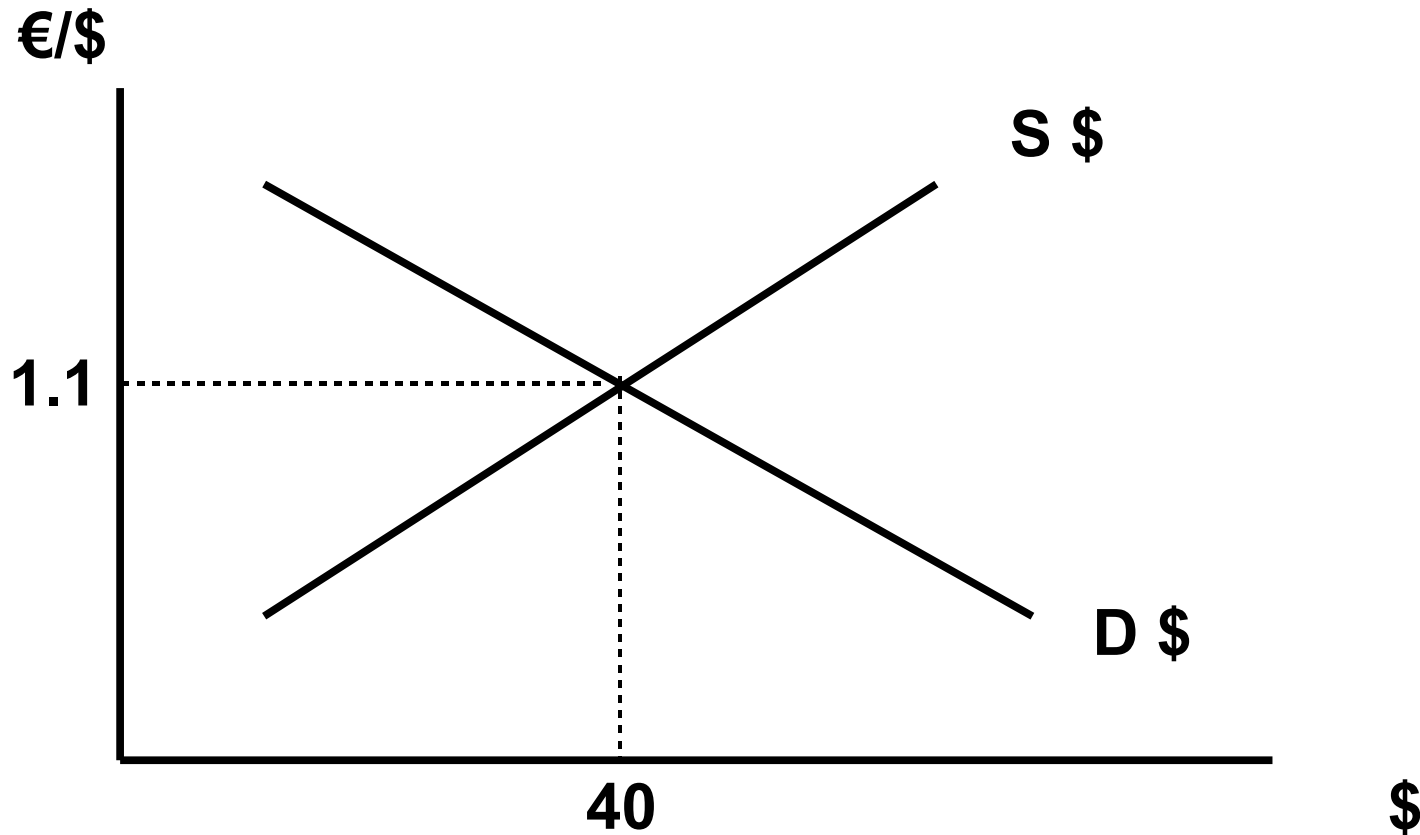
Foreign Exchange Market

Foreign Exchange Market

- Every international trade in goods or assets requires an exchange of currencies.
- Exchange markets determine the exchange rate.
- There is a demand for domestic currency and a supply of domestic currency, usually graphed in reference to a foreign currency.

Foreign Exchange Market

Supply and Demand for Dollars



Foreign Exchange Market

Notes to graph

- The price of one currency in terms of another currency is called the exchange rate.
- When one currency loses value, then the other currency must gain value.
- Currencies losing value are said to be depreciating and currencies increasing in value are said to be appreciating.

Foreign Exchange Market

Notes to graph

- At 1.1 euros to 1 dollar, the volume of dollars traded is 40 billion (just assume they are in billions).
- Know that demand for dollars is equivalent to supply of euros, and that the supply of dollars is equivalent to demand for euros.

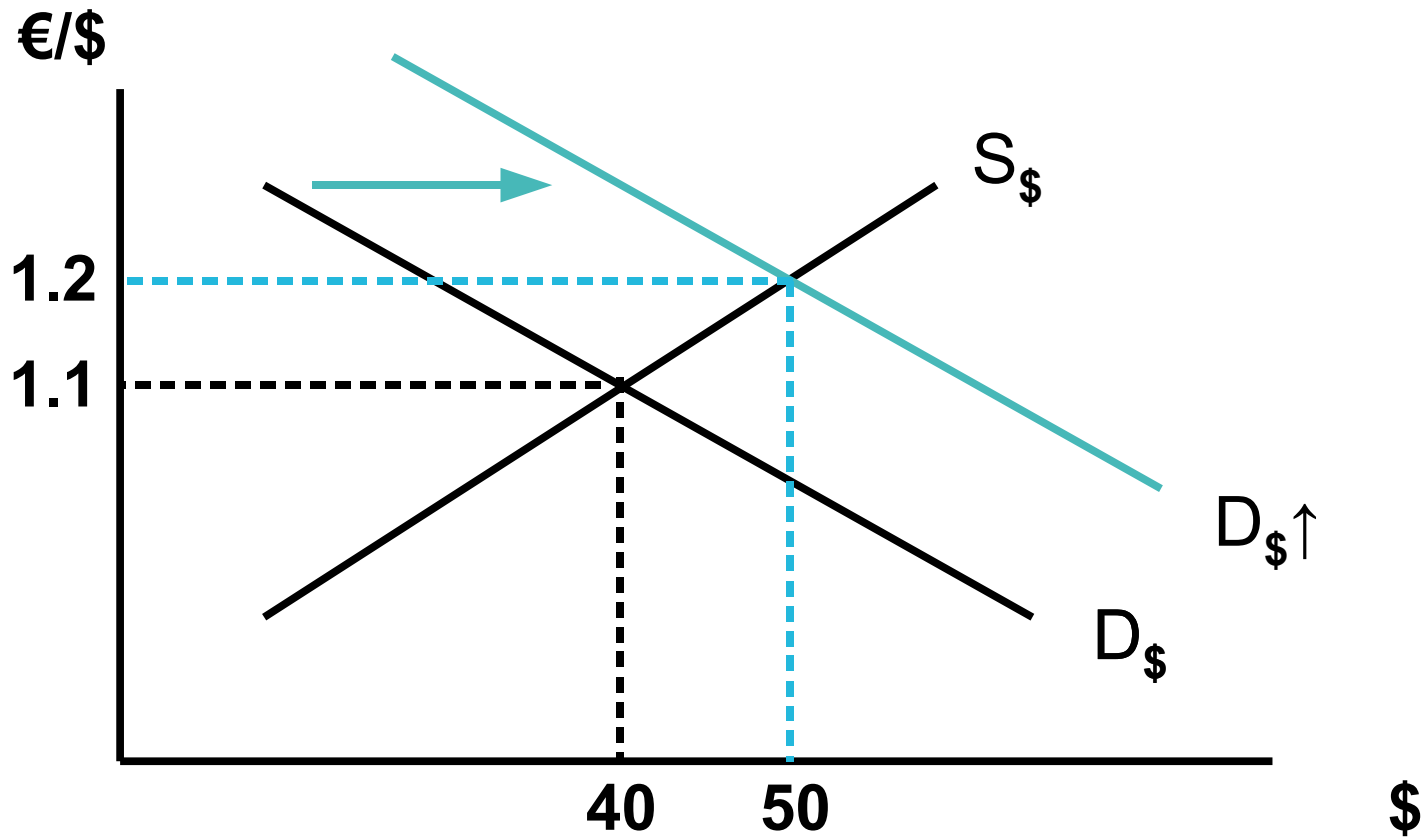
Foreign Exchange Market

Notes to graph

- Demand for a currency is a derived demand.
- Americans demand euros because they are buying European goods, services and assets.
- Sellers of European goods in America must eventually convert dollars to euros.
- Consequently, an increased demand for euros means an increased supply of dollars.

Foreign Exchange Market

Increase in Demand for Dollars



Foreign Exchange Market

Notes to graph

- As demand for dollars increases, the euro depreciates (loses value) and the dollar appreciates (gains value).
- Increases in dollar demand cause the demand curve to shift to the right.

Foreign Exchange Market

Demand for Dollars increases due to increases in

- American Exports
- American Assets
- Foreign Income and Growth
- American Interest Rates
- Foreign Inflation

Foreign Exchange Market

Demand for dollars increase due to an increase in American exports

- Foreigners need to exchange their currency for dollars in order to buy American goods.
- Consequently, the dollar appreciates while the foreign currency depreciates.

Foreign Exchange Market

Demand for dollars increase due to an increase in purchases of American assets by foreigners

- Foreigners need to exchange their currency for dollars in order to buy American assets such as common stock, bonds, or real estate.
- Consequently, the dollar appreciates while the foreign currency depreciates.

Foreign Exchange Market

Demand for dollars increase due to an increase in Foreign income (Growth)

- Since foreigners have more income, they buy more American goods, services and assets. Supply of foreign currency increases. Demand for domestic currency increases as foreigners need to exchange their currency for dollars in order to buy American goods.
- Consequently, the dollar appreciates while the foreign currency depreciates.

Foreign Exchange Market

- Demand for dollars increase due to increase in American interest rates
- Since American assets are more profitable, foreigners seek to buy them. Foreigners need to exchange their currency for dollars in order to buy American assets.
 - Consequently, the dollar appreciates while the foreign currency depreciates.

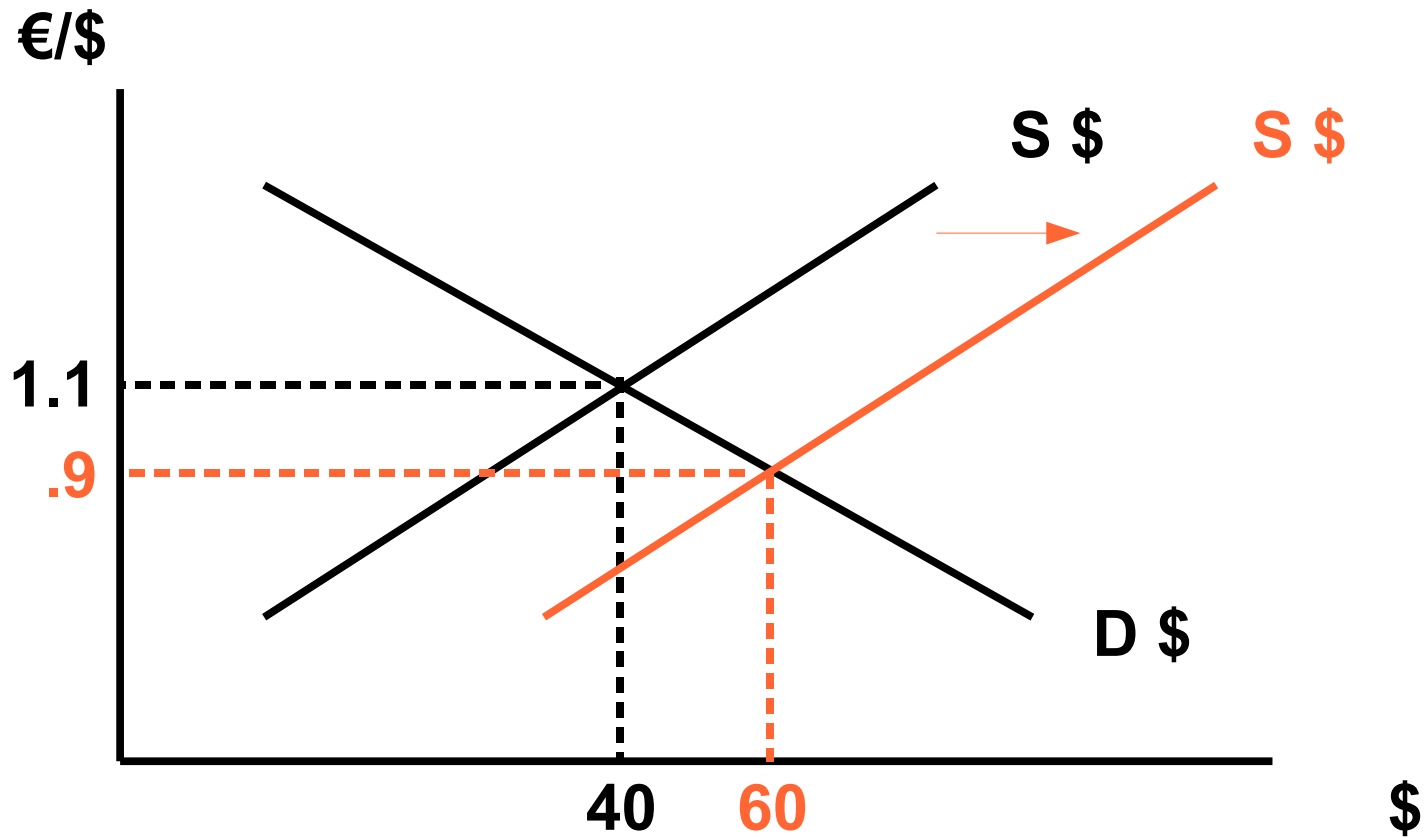
Foreign Exchange Market

Demand for dollars increase due to increase in the Foreign inflation rate

- Foreigners have more currency to buy goods, services, and assets. Foreigners need to exchange their currency for dollars in order to buy American goods.
- Consequently, the dollar appreciates while the foreign currency depreciates.

Foreign Exchange Market

Increase in Supply of Dollars



Foreign Exchange Market

Supply of Dollars increase due to

- American imports
- Foreign Assets
- American Income and Growth
- Foreign Interest Rates
- American Inflation

Foreign Exchange Market

Supply of dollars increases due to American imports

- American buyers supply dollars to the foreign exchange market demanding foreign currency to pay for imported goods.
- Consequently, when demand for imported goods increases, the dollar depreciates and foreign currency appreciates.

Foreign Exchange Market

Supply of dollars increase due to purchase of foreign assets

- Americans buying foreign assets such as euro bonds must supply dollars to acquire euro to buy European bonds.
- Consequently, the dollar depreciates and the euro appreciates.

Foreign Exchange Market

Supply of dollars increase due to increases in American Income (Growth)

- With increased income Americans purchase more goods, services, and assets. Some of these will be foreign. Supply of dollars increases.
- Consequently, the dollar will depreciate and the foreign currency will appreciate.

Foreign Exchange Market

Supply of dollars increase due to increases in foreign interest rates

- As foreign interest rates rise, foreign assets become more profitable to own causing Americans buy them.
- Consequently, the dollar will depreciate and the foreign currency will appreciate.

Foreign Exchange Market

Supply of dollars increase due to increases in American inflation

- As more American dollars are circulated, domestic prices will rise.
- Purchases of foreign goods, services, and assets will rise.
- Consequently, the dollar will depreciate and the foreign currency will appreciate.

Foreign Exchange Market

Summary of Effects on Exchange Rates

- Any effect that increases demand, increases the exchange rate, that is the domestic currency appreciates and foreign currency depreciates.
- Any effect that increases supply, decreases the exchange rate, that is the domestic currency depreciates and foreign currency appreciates.

Problems

Effect of Exchange Rates on Trade

- Let's say it costs \$50 to make a cellphone in the United States. It costs 40 euros to make a similar cell phone in Europe. What will be the pattern of trade given an exchange rate of \$1.67 per euro (€)?

Problems

Effect of Exchange Rates on Trade

- Let's say it costs \$50 to make a cellphone in the United States. It costs 40 euros to make a similar cell phone in Europe. What will be the pattern of trade?
- If the exchange rate prices 1 euro at \$1.67, then American cell phones will be exported to Europe since American cell phones will cost 30 euros ($\$50/1.67$) compared to 40 euros for European cell phones.

Problems

Effect of Exchange Rates on Trade

- Given an exchange rate of \$1.2/€ use the following data to determine the trading pattern.

	American	European
Shirts	\$10	€15
Slacks	\$20	€20
Shoes	\$40	€30

Problems

Effect of Exchange Rates on Trade

- Using the exchange rate of \$1.2/€, American prices in euros are calculated (third column).

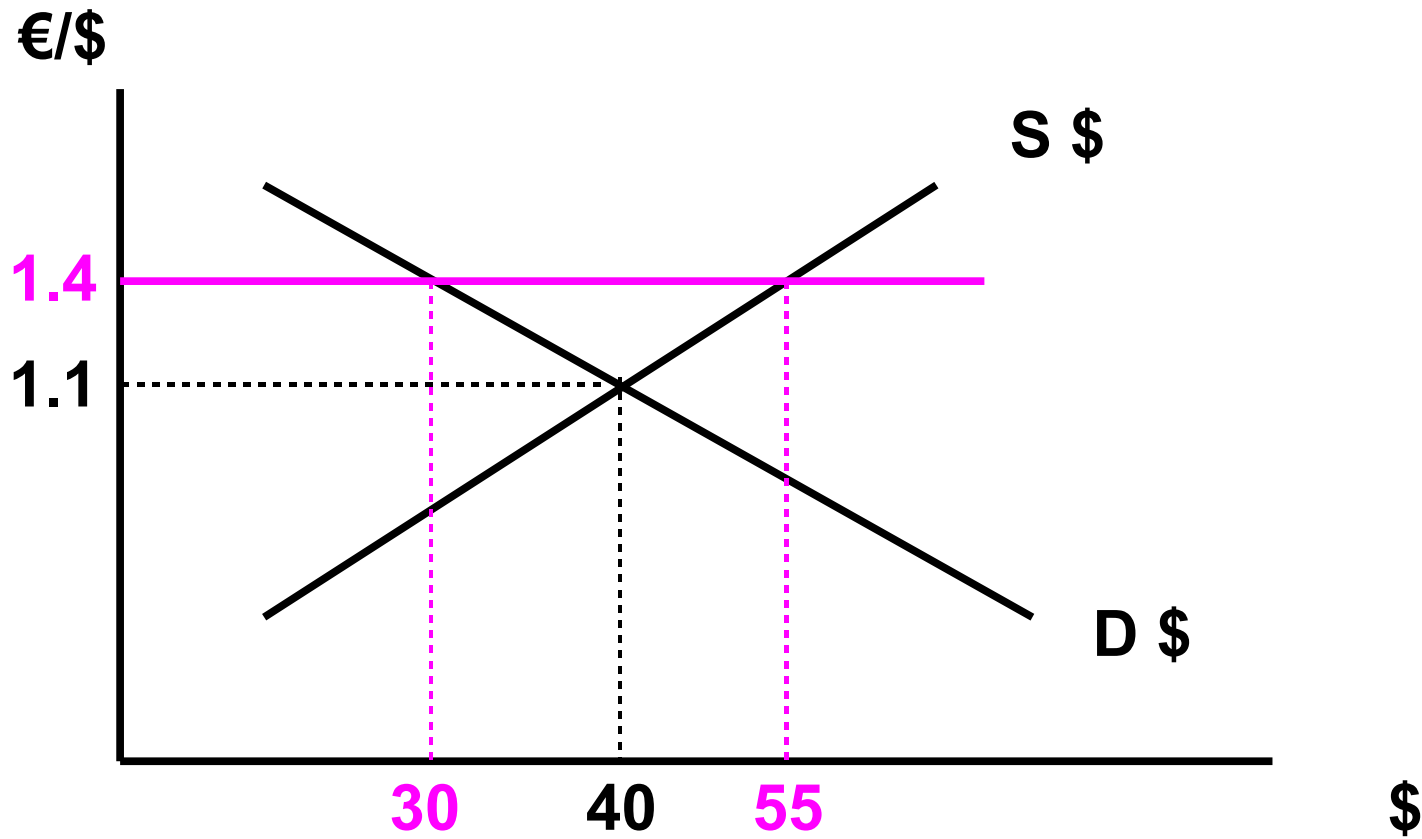
	American	European	
Shirts	\$10	€15	€8.33 (10/1.2)
Slacks	\$20	€20	€16.67 (20/1.2)
Shoes	\$40	€30	€33.33 (40/1.2)

Problems

Effect of Exchange Rates on Trade

- For Europeans, American shirts and slacks are cheaper.
- For Americans, European shoes are cheaper.

Foreign Exchange Market



Foreign Exchange Market

Note 1 to slide

- The market is not in equilibrium, the supply of dollars exceed demand.
- A central bank will be required to maintain this rate by buying up the excess supply of dollars.
- This is an example of a “managed” or “pegged” exchange rate.

Foreign Exchange Market

Note 2 to slide

- The effects will be to increase American imports and decrease American exports to Europe.
- BMW costs €11,000 in Europe

At 1.1 \$10,000

At 1.4 \$7,857

- Chevy Vet costs \$40,000 in the US

At 1.1 €44,000

At 1.4 €56,000

Foreign Exchange Market

Note 3 to slide

- This effect would be desirable from the European point of view in that European exports are increased, imports are decreased, thus causing an increase in European employment.
- European consumers will find prices increasing as imports are more expensive.

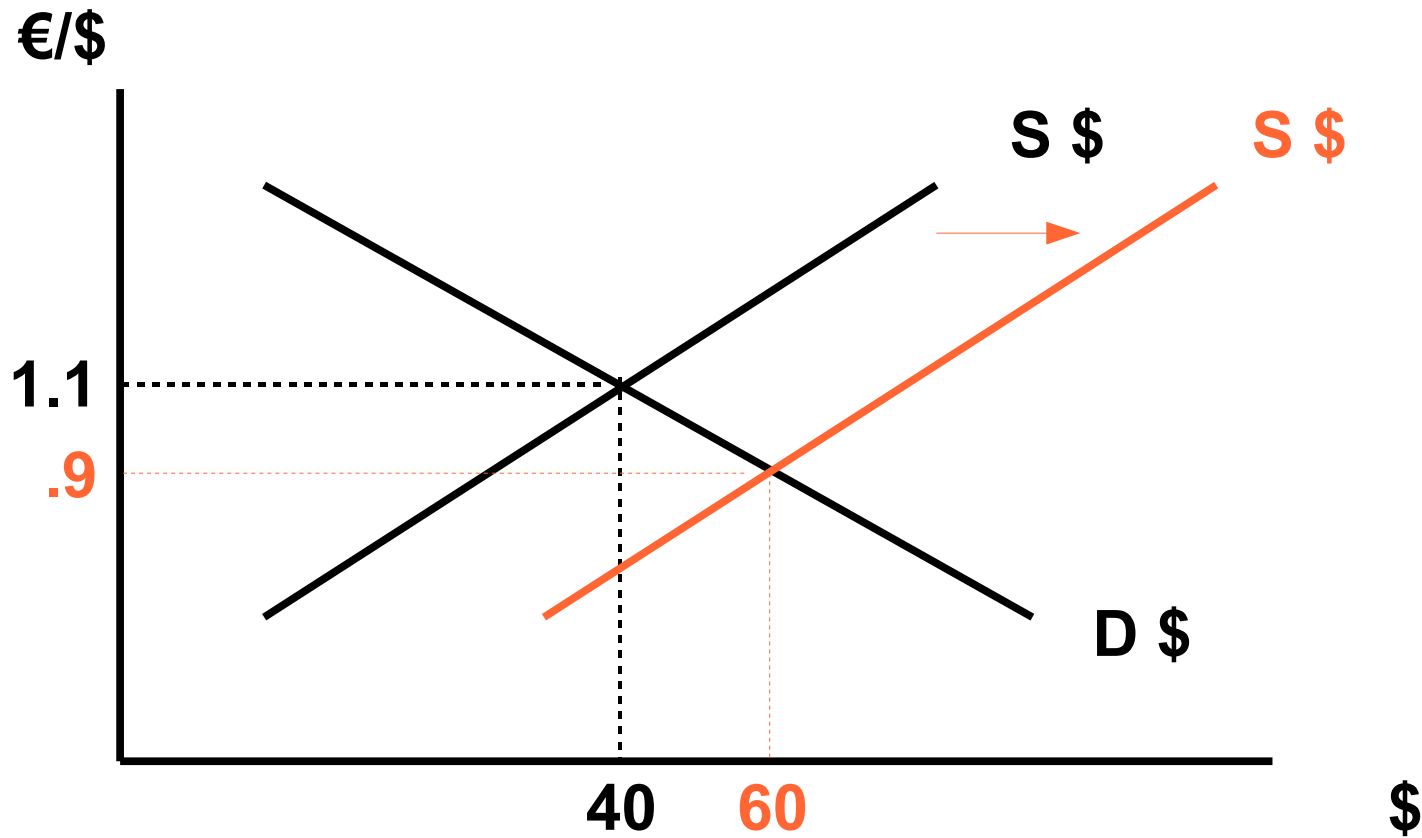
Foreign Exchange Market

Note 4 to slide

- This effect would be less desirable from the American point of view in that American exports are decreased, imports are increased, thus causing a decrease in American employment.
- American consumers will find prices decreasing as imports are less expensive.

Foreign Exchange Market

Process of Adjustment



Foreign Exchange Market

Notes to slide

- 1) Supply increases due a shock such as a large improvement in productivity.
- 2) As supply shifts to right, at the same exchange rate, quantity supplied exceeds quantity demanded.

Foreign Exchange Market

Notes to slide

- 3) As exchange rate drops in response to excess supply, the quantity supplied drops due to a drop in imports due to an increase in price.
- 4) As exchange rate drops in response to excess supply, the quantity demanded increases due to an increase in exports due to a decrease in price.

Foreign Exchange Market

PURCHASING POWER PARITY

- Concept of value for exchange rate
- Nominal exchange rate – current exchange rate
- Real exchange rate – nominal exchange rate adjusted for differences in price levels.

Foreign Exchange Market

PURCHASING POWER PARITY

- Prices of all goods internationally should be the same when adjusted for exchange rates.
- Sometimes referred to as the Law of One Price.
- Example: “The price of a Big Mac should be the same the world over.”

Foreign Exchange Market

PURCHASING POWER PARITY

Arbitrage

- Buying a good or asset in the market with the lower price and reselling it in the market with the higher price.
- Riskless way to make a profit.
- Eventually, the market with the lower price will have price increasing from the arbitrageur's activities and the market with the higher price will find its prices dropping until they are equal.

Problems

Concept of Arbitrage

- If gold sells for £200 /oz in London and \$250/oz in New York, how can an arbitrage profit be earned given an exchange rate of \$1.80/£?

Problems

Concept of Arbitrage

- If gold sells for £200 /oz in London and \$250/oz in New York, how can an arbitrage profit be earned given an exchange rate of \$1.80/£?
- The London price in dollars is $£200 * \$1.80/£ = \360 . Gold is expensive in London, cheap in New York. Therefore, buy gold at \$250 in New York to sell at \$360 in London, thereby earning a riskless \$110/oz profit.

Foreign Exchange Market

PURCHASING POWER PARITY

Absolute Purchasing Power Parity

- Prices of goods and services will be same in all countries after adjusting for the exchange rate.
- Assumes:
 - All goods and services are tradeable.
 - No transactions costs.
 - No trade barriers.
 - No tax differentials.

Foreign Exchange Market

PURCHASING POWER PARITY

Relative Purchasing Power Parity

- Changes in exchange rates are proportional to changes in price levels.
- This also has some hidden assumptions:
 - Structure of economies are similar.
 - Inflation and price levels are measured similarly.

Problems

Relative PPP

- Suppose the European inflation rate is 10% while the American inflation rate is 6%. Given a current exchange rate of \$1.20:€1, what would be the expected exchange rate one year from now?

Problems

Relative PPP

- Suppose the European inflation rate is 10% while the American inflation rate is 6%. Given a current exchange rate of \$1.20:E1, what would be the expected exchange rate one year from now?
- As the euro will depreciate 4% (10%-6%), $\$1.20 * .96 = \1.152 will be the new exchange rate.

Foreign Exchange Market

PURCHASING POWER PARITY

Is PPP a good predictor of exchange rate value?

- Short run – no
- Long run – yes, but not completely, adjustment seems to come through prices rather than exchange rates.
- Studies seem to have mixed results, possibly due to measurement issues.

Foreign Exchange Market

Foreign Exchange Market Regimes

- Floating
- Fixed
- Managed

Foreign Exchange Market

Floating

- Exchange rates are set by supply and demand in an open market.
- For international companies, the increased volatility causes problems with profits.
- A foreign exchange derivatives market exists to help cope with increased risk.

Foreign Exchange Market

Fixed

- Exchange rates are agreed on by trading countries (all central banks).
- Remain fixed until officially changed.
- Does not allow easy accommodation to changes in economic conditions.
- Changes are called devaluation and revaluation.

Foreign Exchange Market

Managed

- A country may try keep their exchange rate within a range of values in order to boost their exports and reduce imports to increase domestic employment.
- Requires intervention by central bank to maintain value.
- Often called pegging, where one countries ties its currency value to that of another.

Foreign Exchange Market

Effects of Exchange Rates on Economic Activity, A Summary

- Depreciating rates cause exports to rise, employment to rise, domestic prices will rise, and foreign purchases of domestic assets may rise but may be offset by capital losses investors suffer on existing investments.

The End