The International Monetary System

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Questions and Applications

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???What is the financial system???
???What is the difference between financial system and international financial system???

Definition of Financial System (Repetition)

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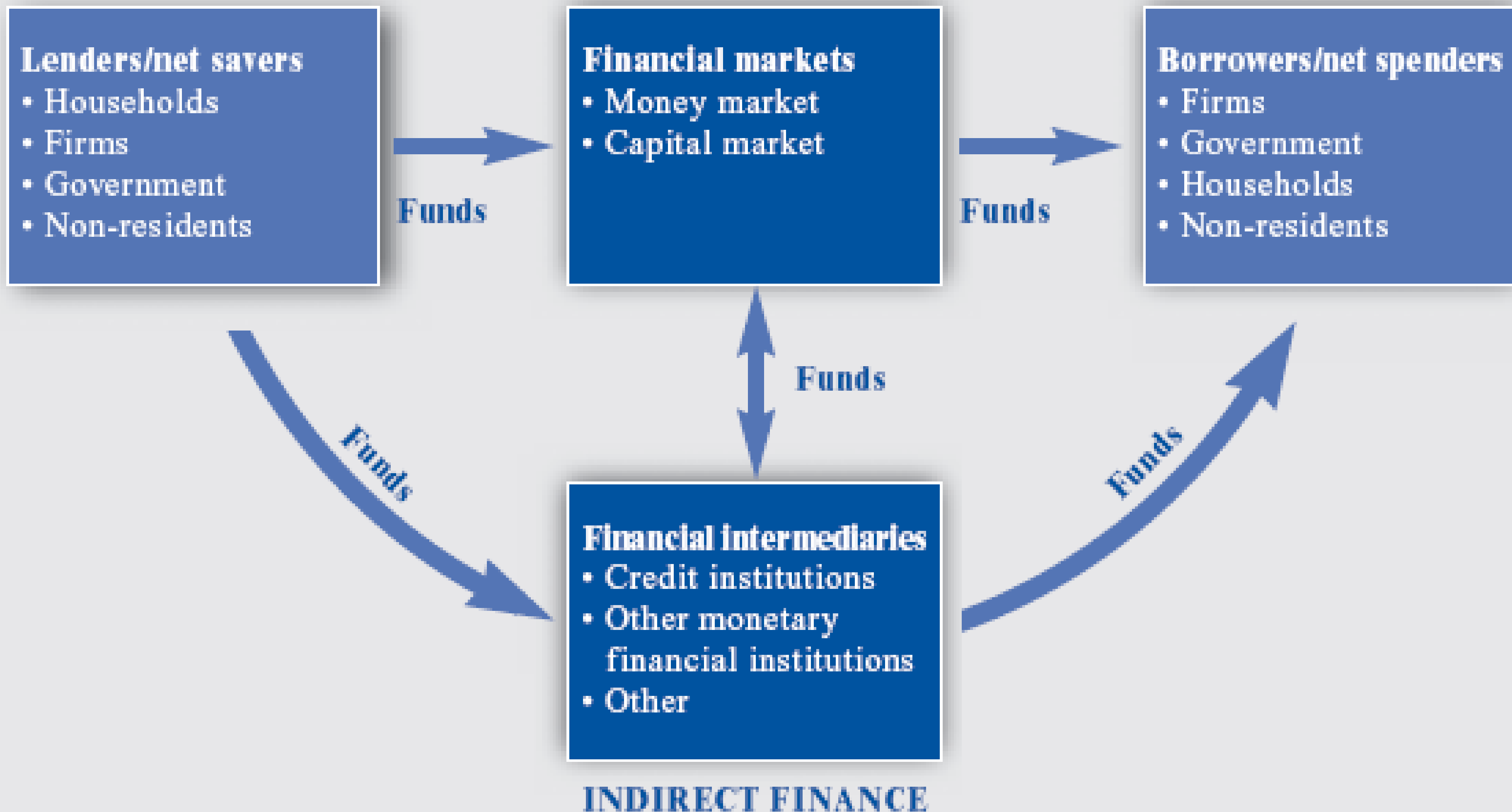
- Financial system is system that allows transfer money between savers and borrowers

- Functions
  - to channel funds from lenders to borrowers
  - to create a payment and clearing mechanism



DIRECT FINANCE
Lenders/net savers
• Households
• Firms
• Government
• Non-residents
Funds
Financial markets
• Money market
• Capital market
Funds
Borrowers/net spenders
• Firms
• Government
• Households
• Non-residents
Funds
Funds
Funds
Financial intermediaries
• Credit institutions
• Other monetary financial institutions
• Other
INDIRECT FINANCE

Questions and Applications

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???

When government of Greece experienced problems in meeting its debt obligation in 2010, some investors became concerned that the crisis would spread to other European countries. Explain why integrated European financial markets might allow a debt crisis in one European country to spread to other countries in Europe.

???

Definition of the International Monetary System

- Complex system of international arrangements, rules, institutions, policies in regard to exchange rates, international payments and capital flows
- Institutional framework within which
  - International payments are made
  - Movements of capital are accommodated
  - Exchange rates are determined
- International monetary system has evolved over time as international trade/business/finance have changed, technology has improved and political systems have changed

Questions and Applications

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???What is the money???

???Why the money came into existence???

Definition of the Money

- Money is any good that is widely accepted for the purposes of the exchange and in the repayments of debts

- Functions
  - medium of exchange
    - money is used to intermediate the exchange of goods and services
    - it solves the problem of the double coincidence of wants
  - unit of account
    - money measures the market value of goods, services, and other transactions
    - it decreases number of prices (in barter: 4 types of goods = 6 prices, 100 types of goods = 495 prices)
  - store of value
    - money is a way to keep some of our wealth in a readily spendable form for future needs

Evolution of the International Monetary System

- Bimetallism (before 1850s – 1870)
- Classic Gold Standard (1870s – 1914)
- Interwar period (1918 – 1939)
- Bretton Woods system (1945 – 1972)
- System of floating exchange rates (1972 – present)

Bimetallism

- A „double standard“ in which both gold and silver were used as money
  - United States, the Netherlands, France
- Period of different arrangements
  - United Kingdom on gold standard since 1821
  - German states, Austro-Hungarian Empire, Scandinavia, Russia, and the Far East operated silver standards
- Exchange rates among currencies determined by either their gold or silver contents
  - Problems when relative price of metals differs from official mint parity

Gold Standard until 1914

- During the 1800s the industrial revolution brought about a vast increase in the production of goods and widened the basis of world trade

- At that time, trading countries believed that a necessary condition to facilitate world trade was a stable exchange rate system
  - Stable exchange rates were seen as necessary for encouraging and settling commercial transactions across borders (both by companies and by governments)
  - So by the second half of the 19th century, most countries had adopted the gold standard exchange rate regime

Way towards Gold Standard

- Replacement of bimetallism with gold standard in Great Britain (1816)
- Unpromising political circumstances in Europe
- Chain reaction in the area of establishing gold standard
  - Strong interest of every country to implement the same international monetary system as their most important economic and financial partners have implemented

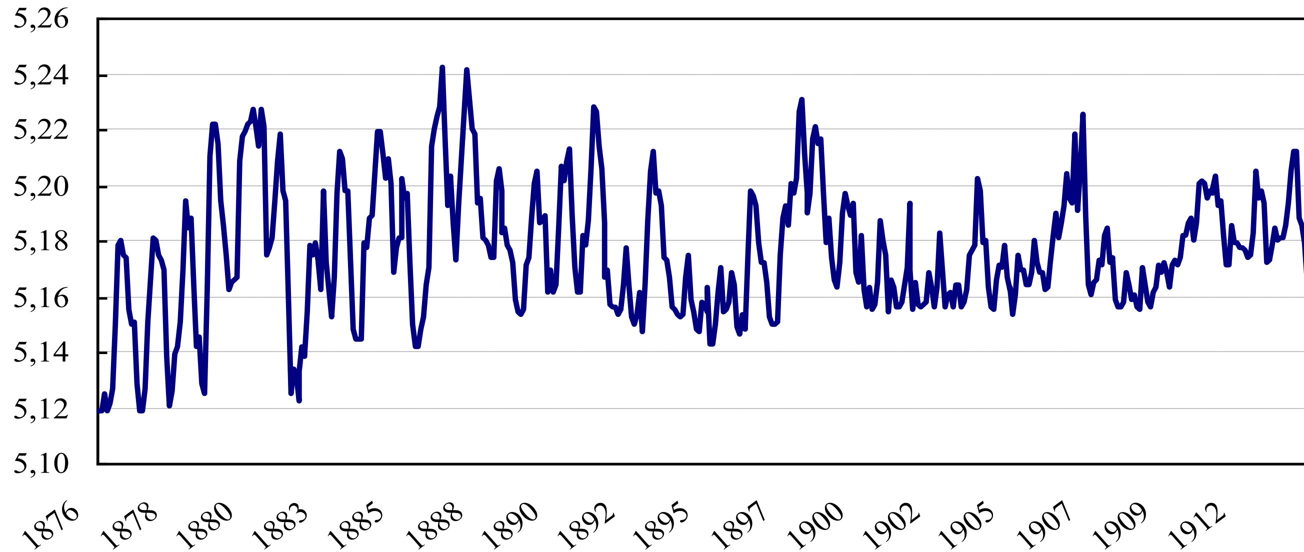
Country	Year
Great Britain	1816
Germany	1871
Sweden, Norway and Denmark	1873
France, Belgium, Switzerland, Italy and Greece	1874
Netherlands	1875
Uruguay	1876
USA	1879
Austria	1892
Chile	1895
Japan	1897
Russia	1898
Dominican Republic	1901
Panama	1904
Mexico	1905

Basics of Gold Standard

- Countries set par value for their currency in terms of gold
- Determination of exchange rates in the gold standard was simple
  - Example: US$ gold rate was $20.67/oz, the British pound was pegged at £4.2474/oz
  - US$/£ rate calculation is $20.67/£4.2472 = $4.8665/£
- Highly stable exchange rates
- During this period in most major countries
  - Gold alone was assured of unrestricted coinage
  - There was two-way convertibility between gold and national currencies at a stable ratio
  - Gold could be freely exported or imported

Example of exchange rate development in Gold Standard

Exchange rate FRF / USD during the period 1876 - 1914



Basics of Gold Standard

- Countries had to maintain adequate gold reserves to back its currency's value in order for regime to function
- Because of dominance of British during this period, pound sterling also a medium of exchange
- Environment that was conducive to international trade and investment
- Misalignment of exchange rates and international imbalances of payment automatically corrected by the price-specie-flow mechanism
- Each country should adjust its domestic money supply in direct relation to the amount of gold it held
  - Increase in gold would increase the domestic money and a reduction in its gold supply would reduce the money supply

Gold production and relative value of gold and silver

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Tonnes
The comparative value of gold and silver

700 | 600 | 500 | 400 | 300 | 200 | 100 | 0
40 | 35 | 30 | 25 | 20 | 15 | 10 | 5

1801-50, 1851-55, 1856-60, 1861-65, 1866-70, 1871-75, 1876-80, 1881-85, 1886-90, 1891-95, 1896-00, 1901-05, 1906-10

Gold production (left-hand axis)
Price of gold in relation to price of silver (right-hand axis)

Questions and Applications

???Imagine 2 countries – United States and France - in the period of Classical Gold Standard and suppose that the United States exported more to France than France exported to the United States. What will be the consequences???

Price-Specie-Flow Mechanism

- Suppose the United States exported more to a foreign country than the foreign country exported to the United States
- This cannot persist under a gold standard
  - Net export of goods from the United States to abroad will be accompanied by a net flow of gold from abroad to the United States
  - This flow of gold will lead to a lower price level in abroad and, at the same time, a higher price level in the United States
- Resultant change in relative price levels will slow exports from the United States and encourage exports from abroad
- Country must guarantee complete back-up of domestic currency with gold
- There has to be price and wage flexibility

Trade

Gold

Rules of the game

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- The „Rules of the Game“ refers to another adjustment process that was theoretically carried out by central banks
  - Selling of domestic assets when gold exits in the country to pay for imports. This decreased the money supply and increased interest rates, attracting financial capital inflows to match a current account deficit, reducing gold outflows
  - Buying of domestic assets when gold enters the country as income from exports. This increased the money supply and decreased interest rates, reducing financial capital inflows to match a current account surplus, reducing gold inflows
- In practice, little incentive for countries with expanding gold reserves to follow the rules
  - Instead, countries often sterilized gold inflows

Results of Gold Standard

- Long-term stability of price level (average annual inflation in USA)
  - 0.1 % (1880 – 1914) vs. 4.2 % (1946 – 1990)
- Short-term instability of price level (ratio of standard error of annual inflation rates and average annual inflation)
  - 17.0 (1880 – 1914) vs. 0.8 (1946 – 1990)
- Higher volatility of real output (variation coefficient of the real output in USA)
  - 3.5 (1879 – 1913) vs. 1.5 (1946 – 1990)
- Higher level of unemployment (average rate of unemployment in USA)
  - 6.8 % (1879 – 1913) vs. 5.6 % (1946 – 1990)

Interwar experience

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- With the outbreak of World War I, the classical gold standard came to an end
- Interwar years marked by severe economic instability
- Reparation payments led to episodes of hyperinflation in Europe
  - German hyperinflation
  - From a level of 262 in January 1919 to 126,160,000,000,000 in December 1923 (factor of 481.5 billion)
  - Economic distress eventually promoted rise of Nazism
- Extremely negative effects of the lack of agreement on the functioning of the international monetary system

Fleeting return to gold

- United States returned to gold in 1919
- Group of countries (Great Britain, France, Italy, Japan) agreed in 1922 on a program calling for:
  - A general return to the gold standard
  - Cooperation among central banks in attaining external and internal objectives
- Great Britain returned to the gold standard at prewar parity in 1925
- „Gold bloc“ countries (e.g. France, Belgium, Switzerland, Czechoslovakia, Poland) stayed with gold until 1936

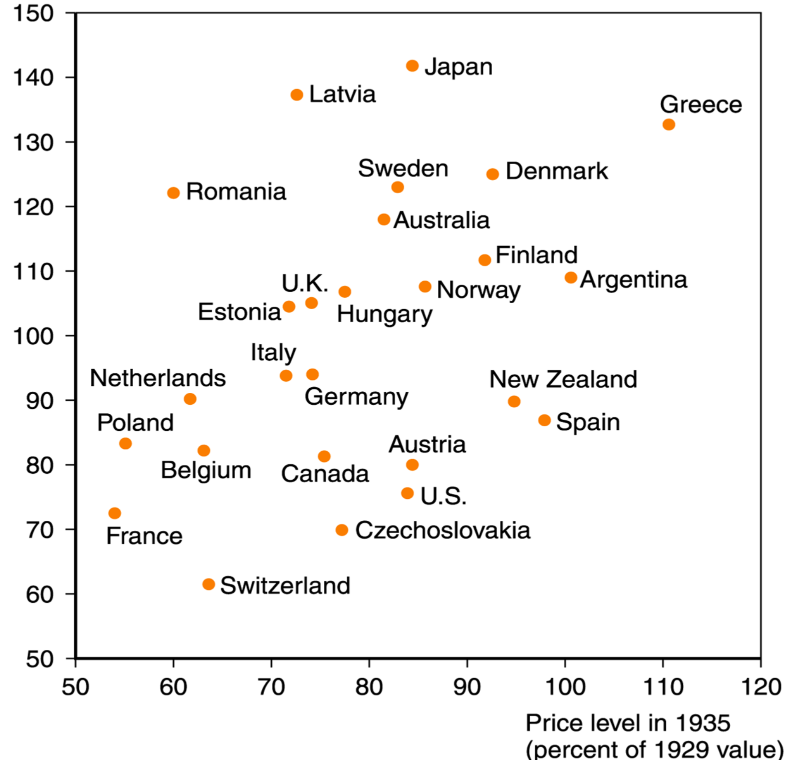
Great depression

- Initial collapse in 1929 (stock market crash) followed by bank failures throughout the world
- Great Britain forced off gold in 1931 when foreign holders of pounds lost confidence in Britain's commitment to maintain its currency value
- United States devalued in 1933
- Major economic harm was done by restrictions on international trade and payments
- Protectionist and beggar-thy-neighbor policies
  - Competitive devaluations of national currencies
  - Foreign retaliation and disintegration of the world economy
  - International cooperation would have bettered off economic situation of all countries

Industrial production and price changes (1929-1935)

Countries such as Australia and the United Kingdom that left the gold standard early and adopted counter-deflationary monetary policies experienced milder declines in output during the Great Depression. Countries such as France and Switzerland that stuck with the gold standard longer had greater declines in price levels and output.

Source: Ben Bernanke and Kevin Carey, "Nominal Wage Stickiness and Aggregate Supply in the Great Depression," *Quarterly Journal of Economics* 111 (August 1996), pp. 853–883.



Conference in Bretton Woods, July 1944

- Position of Great Britain
  - New international currency “bancor”, accepted as equivalent to gold
  - International clearing union would guarantee automatic elimination of balance-of-payments disequilibria
  - Functioning of the system similar to the functioning of the gold standard, but more flexible

- Position of the United States
  - Restoration of the gold exchange standard
  - Establishment of a special fund, into which countries would pay their financial quota and from which they could borrow in times of temporary balance-of-payments difficulties
  - Eradication of trade and payment restrictions

Outcomes of the Bretton Woods conference

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- Bretton Woods international monetary system reflected mostly US interests
- Agreement established a US dollar based monetary system and created the International Monetary Fund and World Bank
- IMF establishment based on a quota and/or drawing rights system of all member countries
- Under original provisions, all countries fixed their currencies in terms of gold but were not required to exchange their currencies
- Only the US dollar remained convertible into gold (at $35/oz with central banks, not individuals)
- Each country established its exchange rate vis-à-vis the US dollar and then calculated the gold par value of their currency

Outcomes of the Bretton Woods conference

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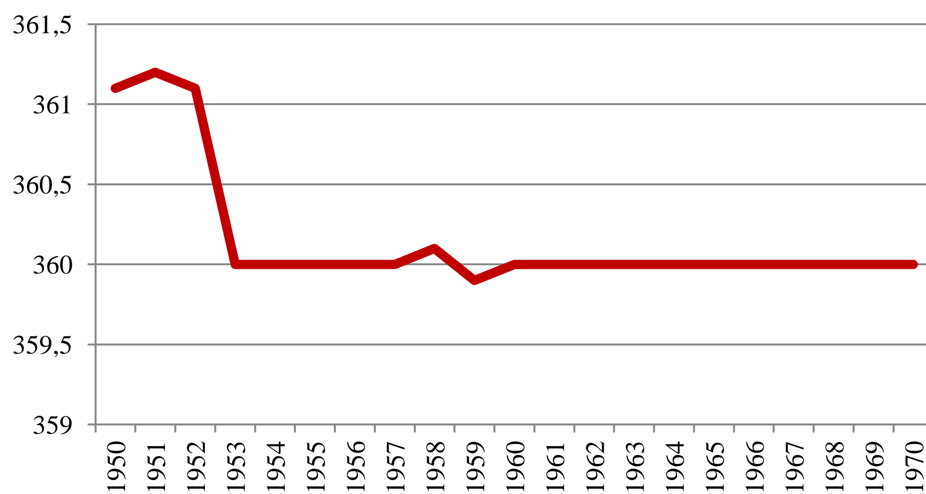
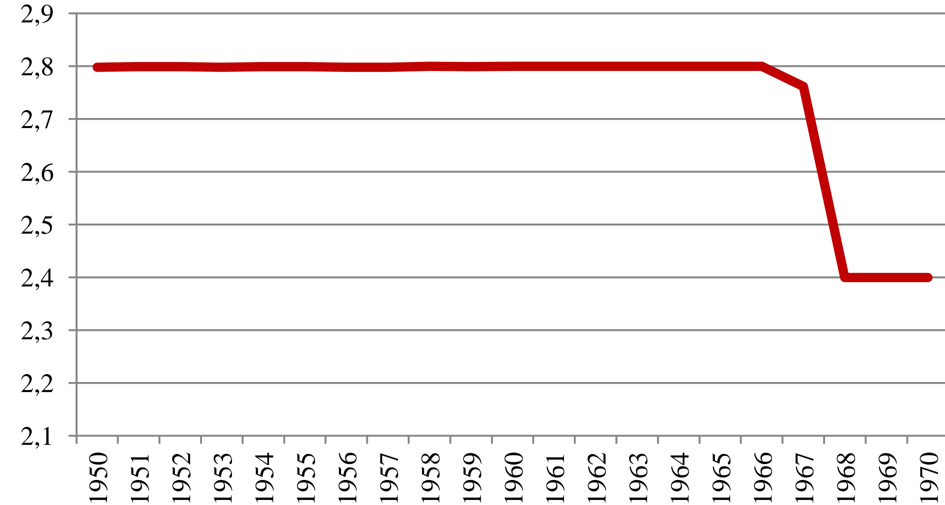
- Participating countries agreed to try to maintain the currency values within 1% of par by buying or selling foreign or gold reserves
- Devaluation was not to be used as a competitive trade policy, but if a currency became too weak to defend, up to a 10% devaluation was allowed without formal approval from the IMF
- Countries let an international organization accept decisions about exchange rates for the first time in history by signing the IMF statute
- Removal of all restrictions on the current account transactions

Exchange rates during Bretton Woods





Functioning of the Bretton Woods system

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- Generally worked well in the 1950s and early 1960s
- Period of „dollar shortage“
  - Enormous world demand for American goods in combination with very limited export possibilities of other countries and their low foreign exchange reserves
- Diverging fiscal and monetary policies and external shocks caused the system's demise
- President Lyndon Johnson financed both his "Great Society" programs at home and the American war in Vietnam
  - Large US Federal budget deficit coupled with easy monetary policy reulted in high inflation in the United States and increase in US spending for cheaper imports
- As a result, the United States balance of payments moves from a surplus into a deficit

Functioning of the Bretton Woods system

- From mid of 1960s period of „dollar glut = dollar overhang“
- US trade balance moved into deficit along with improvement in economic growth and balance-of-payments of Europe and Japan
- Nations with balance-of-payments deficit are under more pressure than countries with balance-of-payments surplus
- Dollar devaluation impossible because of its specific role in the Bretton Woods monetary system
- Problem of facilitating international liquidity and problem of confidence into the system
  - Triffin paradox

Triffin paradox

- Named after Robert Triffin, a Belgian American economist known for his critique of the Bretton Woods system
- System rested on U.S. promise to exchange dollars for gold on demand
- Yet for international trade to grow, foreigners needed increase their holdings of the reserve currency, the US dollar (U.S. current account deficit needed)
- More dollars foreigners held, the less they believed in U.S. promise to exchange dollars for gold
- Second option was to reduce the current account deficit and slow down the international trade and economy

Deficits of the U.S. balance of payments (USD billion)

year	1956	1958	1959	1960	1961	1962	1963	1964	1965	1967	1970	1971
defic	-0,11	-2,82	-2,28	-3,42	-1,35	-2,65	-2,04	-1,55	-1,30	-3,40	-9,84	-29,8

Functioning of the Bretton Woods system

- By 1970, financial markets are reluctant to hold the "overvalued" U.S. dollar and sell USD in increasing volume
  - This puts downward pressure on the exchange rate for dollars
  - And upward pressure on the exchange rate for foreign currencies
  - Central banks engage in massive intervention in an attempt to hold their Bretton Woods par values
- As a result, foreign holdings of dollars increase dramatically and eventually exceed U.S. gold holdings
  - By 1971, gold coverage for U.S. dollars had dropped to 22%
  - In August 1971, President Nixon suspends dollar convertibility into gold
  - In response, more dollars are sold on foreign exchange markets pushing the dollar lower (and foreign currencies higher)

Smithsonian agreements

- In December 1971, ten major counties meet in Washington, D.C. with the aim of restoring stability to the international monetary system
- Main aim was to set up stable exchange rates that would ensure balance-of-payments equilibrium in major countries
- Essential meeting conclusions
  - Key countries agree to revalue their currencies and in essence set new par values against the US dollar (e.g., yen +17%, mark +13.5%, pound and franc +9%)
  - The United States also agree to raise the dollar price of gold from $35 to $38 an ounce (represents a further devaluation of the dollar).
  - It was also agreed that currencies could now fluctuate + or – 2.25% around their new par values
  - The United States discontinue their 10% import tariff

The end of Bretton Woods system

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- 13 months after the Smithsonian Agreements, the dollar comes under renewed attack for being overvalued
- On February 12, 1973 the dollar is devalued further to $42 per ounce
- In response to mounting speculative currency flows, foreign exchange markets are closed on March 1, 1973, and reopen on March 19, 1973
- When foreign exchange markets reopen, major countries (Japan, Canada, Western Europe) announce that they are “floating” their currencies
- The Bretton Woods fixed exchange rate system effectively ends on this date
- Approximately 3 months later, by June 1973, the dollar has “floated” down an average of 10% against the major currencies of the world

Post Bretton Woods summary

- Since March 1973, the major currencies of the world have operated under a floating exchange rate system
  - While central banks of these major countries have occasionally interviewed in support of their currencies, this intervention has become less over the years
- In addition to the major currencies of the world, a growing number of other developing country currencies have also moved to a floating rate system
- The post Bretton Woods' period has resulted exchange rates become much more volatile and, perhaps, less predictable then they were during previous fixed exchange rate eras

Post Bretton Woods system (1)

- OPEC and the oil crisis (1973-1974)
  - OPEC raised oil prices four fold which resulted into exchange rate turmoil
  - Caused OPEC nations to earn large surplus balance of payments
  - Surpluses recycled to debtor nations which set up debt crisis of 1980s
- Jamaica agreement (1976)
  - Floating rates were declared acceptable
  - Gold was abandoned as a reserve asset
- Dollar crisis (1978-1979)
  - U.S. balance of payments difficulties
  - Result of inconsistent monetary policy in the United States
  - Dollar value falls as confidence shrinks

Post Bretton Woods system (2)

- Rising dollar (1980-1985)
  - U.S. inflation subsides as the Fed raises interest rates
  - Rising rates attracts global capital to USA
  - As a result the dollar value raises

- Sinking dollar (1985-1987)
  - Dollar devaluated slowly downward
  - Plaza agreement (1985): G-5 countries agree to depress the dollar further
  - Louvre Agreement (1987): G-7 countries agree to support the falling dollar

Present international monetary system

- Variety of exchange rate regimes
  - Selection depends on a country's preferences and specifics
- Three most important currencies (USD, EUR, JPY)
  - Discussions on the role of GBP and CNY
- Evidences on monetary integration with the eurozone as the most advanced example
- Financial crises as a phenomena of current system
  - Crises in Latin America
  - Crises in South-East Asia
  - Global financial crisis
- Discussions on controls and regulation of international capital flows

THANK YOU FOR YOUR ATTENTION