

The Architecture of International Monetary System (Chapter 19)

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History of Monetary Arrangements

Money provides a resolution for the problem of double coincidence of wants

- ▶ without money there would be significant search costs in transactions
- ▶ note: in small primitive communities money is not needed

Commodity money

- ▶ most liquid asset as money: cigarrets in jails, chairs in Habbo hotel, squirrel skins etc
- ▶ can arise without coordination

High powered money

- ▶ currency issued by government
- ▶ official unit of account: Babylonians, Romans, and Greeks denominated money in the weight of grains of wheat or barley
- ▶ taxes paid in the official unit
- ▶ many states converged to using metallic money: banknote is a promise to pay bearer in metal

Gold standard

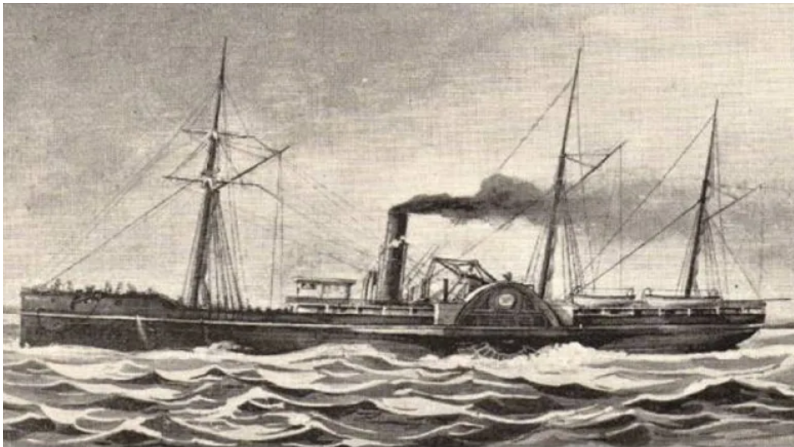
International standard formalized in 1879, lasted until 1914

- ▶ predecessor: bimetallism (fixed parity between gold and silver)
- ▶ monetary authorities established and guaranteed gold content
- ▶ band of fluctuation for exchange rates determined by transportation costs of gold

The Hume mechanism

- ▶ payment imbalances were financed by flows of gold
- ▶ trade deficit lead to shrinking money supply
 1. higher interest rate, capital inflows
 2. slowing economic activity
 3. outflow of gold reduces the domestic price level
 4. improved competitiveness and eventually trade balance

The Hume Mechanism



S.S. Pacific, sunk in 1875 (accident with 273 victims), cargo included gold (in current money about 10 MUSD)

Gold standard

Benefits

- ▶ credibility; monetary policy entirely determined by gold
- ▶ low inflation (gold is rare)
- ▶ no competition of power between countries

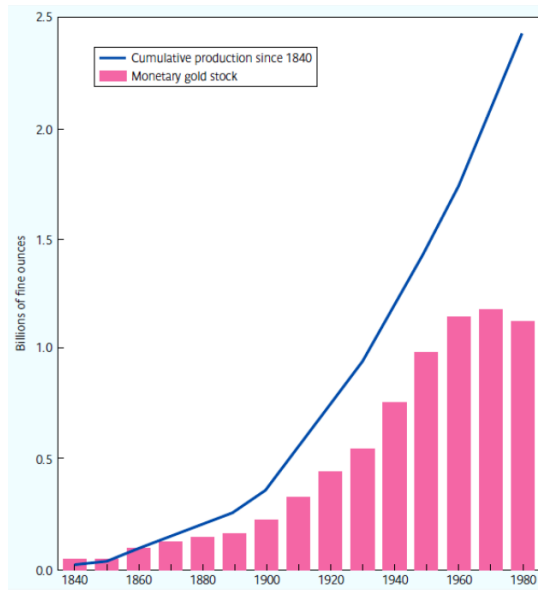
Limits of automatism

- ▶ dominance by UK; Sterling as a reserve currency
- ▶ BoE set the interest rate of the world
- ▶ UK could evade Hume mechanism and fund deficits with sterling-denominated liabilities of BoE
- ▶ link between metal and money became less automated
- ▶ gold reserves smaller than BoE liabilities to other CBs (eventually unbacked debt!)
- ▶ some countries set limits to gold shipments

Problems

- ▶ slow recovery when price adjustment is slow (wages and prices should have adjusted due to shocks)
- ▶ natural discoveries affect money supply

Monetary Gold Stock and Cumulative Production



The Inter-War Period

The free float period 1919–1926

- ▶ dominance of UK and USA
- ▶ hyperinflations in Central Europe

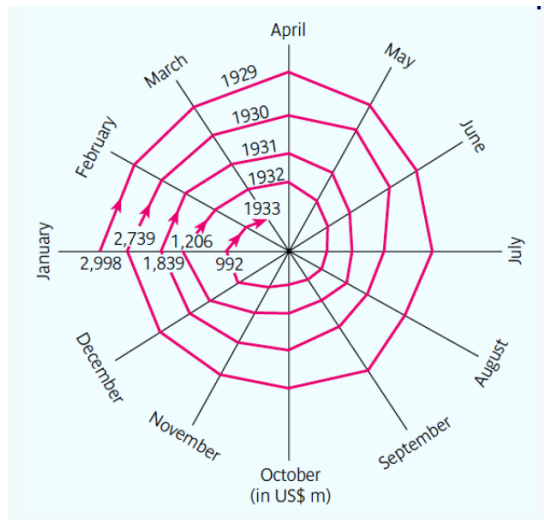
Ephemeral gold standard 1927–1931

- ▶ fixed exchange rates (but misaligned)
- ▶ dollar and pound dominated
- ▶ small gold reserves
- ▶ non-functioning Hume mechanism (e.g. sterilized trades)
- ▶ collapsed when UK gold reserves became insufficient

Managed float 1931–1939

- ▶ the Great Depression
- ▶ some countries remaining in gold standard
- ▶ others trying to devalue (beggar-thy neighbour)
- ▶ tariffs, embargos etc

The Great Depression



Beggar-Thy-Neighbour Depreciations

	1931	1932	1933	1934	1935	1936	1937	1938
Belgium	100.1	100.2	100.1	99.9	78.6	72.0	71.7	71.8
Denmark	93.5	70.3	55.8	50.0	48.5	49.0	48.6	48.1
France	100.1	100.3	100.0	100.0	100.0	92.4	61.0	43.4
Germany	99.2	99.7	99.6	98.6	100.3	100.1	99.7	99.6
Italy	98.9	97.4	99.0	97.0	93.0	82.0	59.0	59.0
Norway	93.5	67.2	62.7	56.3	54.5	55.2	54.7	54.1
Netherlands	100.1	100.3	100.1	100.0	100.0	94.9	80.9	88.8
Switzerland	100.6	100.6	100.2	100.1	100.0	92.6	70.2	70.0
UK	93.2	72.0	68.1	61.8	59.8	60.5	60.0	59.3
USA	100.0	100.0	80.7	59.6	59.4	59.2	59.1	59.1

The Bretton Woods System

Principles

- ▶ fixed exchange rates
- ▶ creation of IMF and the predecessors of the World Bank and WTO
- ▶ dollar centric: fixed parity to dollar
- ▶ only temporary exchange controls and tariffs allowed
- ▶ US dollar in gold standard

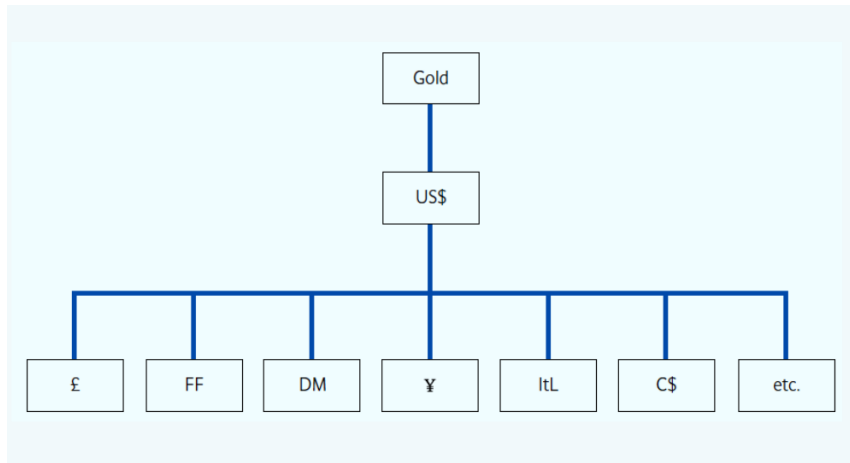
Triffin paradox

- ▶ US balance of payment deficits due to growing need of dollars
- ▶ impossible to sustain the gold value of dollar in the long run

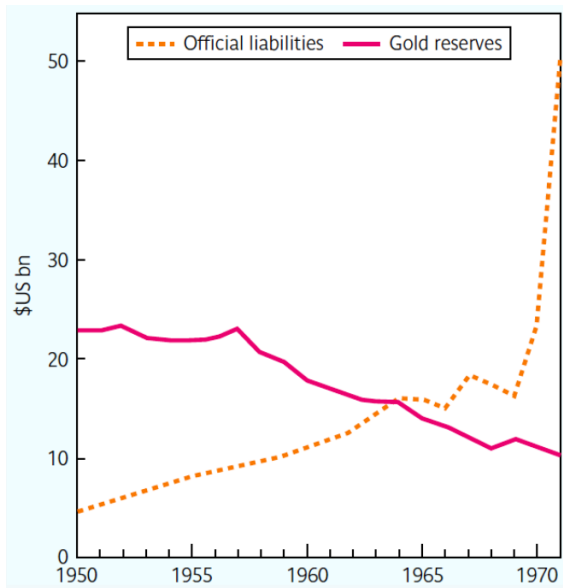
Collapse

- ▶ USA started to use seignorage to finance political activities
- ▶ misaligned exchange rates
- ▶ increasing price of gold, gold parity of US dollar suspended in 1971

Three Layers of Bretton Woods



US Gold Reserves and Liabilities



Provides assistance

- ▶ emergency loans (which are typically conditional on policy actions)

Special drawing right

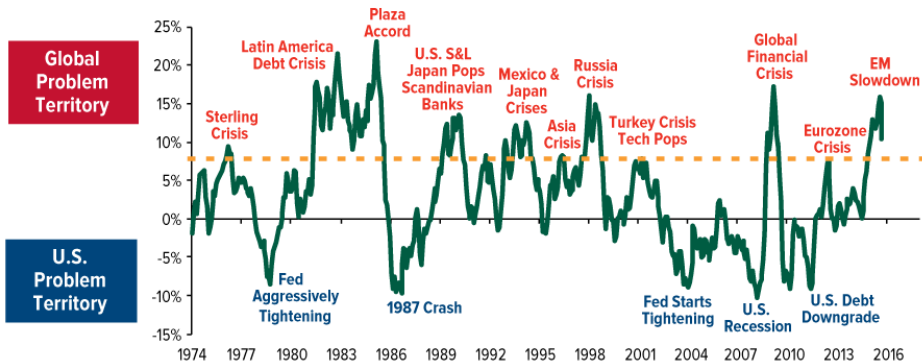
- ▶ credit line allocated by IMF to its members
- ▶ value defined as basket of currencies
- ▶ symbolic unit of account of IMF

Monitoring its member countries

Currency Crises and Dollar

Dollar-Appreciation Spikes Almost Always Lead To International Currency Crises

U.S. Trade Weighted Broad Dollar Index (Year-over-Year Percent Change)



Source: Cornerstone Macro, U.S. Global Investors

Currency Crises

Liberalization starts a boom which subsequently busts

- ▶ monetary expansion when exchange rate reserves grow
- ▶ AD increases faster than AS
- ▶ inflationary pressure
- ▶ sudden shock: investors move out, output falls

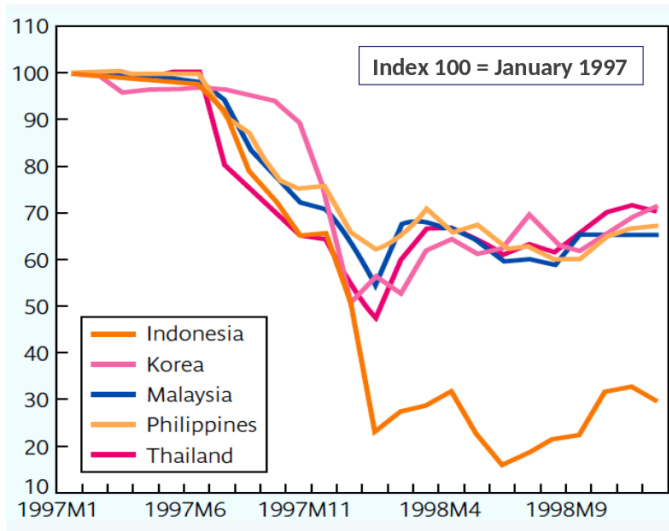
Crises driven by fundamentals

- ▶ wages increasing faster than productivity (Greece)
- ▶ prices of commodities (oil and Russian crises)
- ▶ political unrest (Ukraine, Egypt, Venezuela)

Non-fundamental Crises

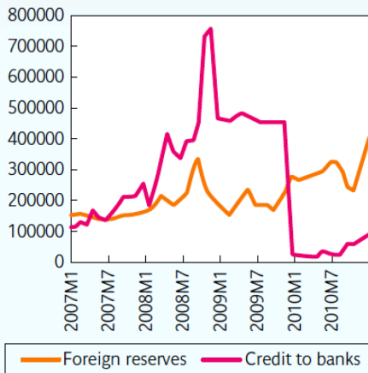
- ▶ speculative attack
- ▶ existing vulnerability: unemployment, fear of asset bubble, balance sheet weakness
- ▶ contagion: the crises spreads

Asian Financial Crisis

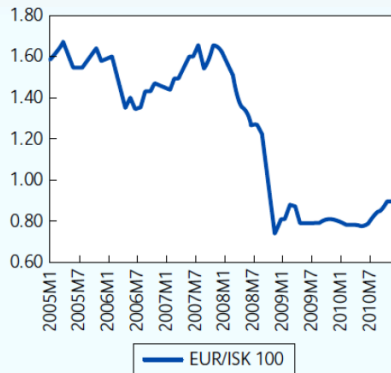


Crisis in Iceland 2008

(a) Foreign exchange reserves and domestic credit



(b) Exchange rate
(euros per Icelandic krona)



The Choice of an Exchange Rate Regime

Fixed exchange rates

- + stability
 - what is the equilibrium value of the rate: fixed rates may lead to misalignment and speculative attacks
 - vulnerable to crises

Flexible exchange rates

- + exchange rates compensate for inflation differentials
- + good for coping with shocks on external competitiveness
 - fluctuations: overshooting and uncertainty

The Choice of an Exchange Rate Regime

Financial integration 1980-

- ▶ dismantling capital controls and floating currencies
- ▶ several currency crises followed

Capital controls

- ▶ prohibitions/limitations of export and import of money
- ▶ dual exchange markets
- ▶ Tobin tax
 - savings and investments suffer, biased interest rates
- + volatility is costly, effective demand management policies and monetary policy, promotes long-term investments

Currency Boards and Dollarization

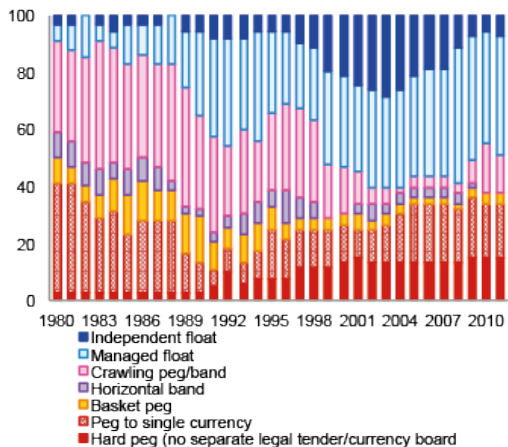
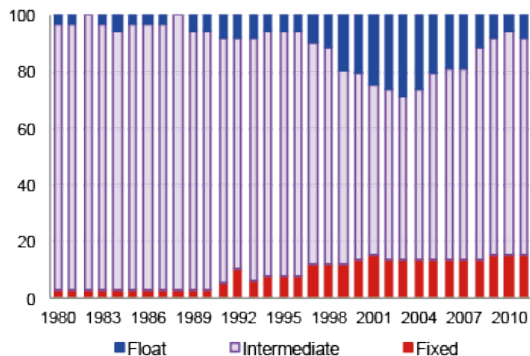
Dollar or Euro standard

- ▶ one-sided monetary union
- ▶ Dollar: Panama, Liberia, Ecuador, El Salvador, Zimbabwe, Argentina etc
- ▶ Euro: Kosovo
- ▶ reasons: foreign central bank is more credible, trade links

Currency boards

- ▶ fixed exchange rate with an anchor currency
- ▶ local currency backed by reserves
- ▶ passive monetary policy

The Choice of an Exchange Rate Regime



Monetary Unions

Common currency

- ▶ irrevocable fixing of exchange rates
- ▶ common central bank
- ▶ national money supply determined by the Hume mechanism
- ▶ surplus: money flows in, interest rate falls

Theory of optimal currency areas

- ▶ common currency does not imply loss of welfare
 1. factor mobility
 2. absence of asymmetric shocks

European monetary union

- ▶ Euro Crisis: non-functioning Hume mechanism (imbalances), vulnerability (inability to make corrective moves)

The $N - 1$ Problem

Assume N currencies

Only $N - 1$ exchange rates can be independent

- ▶ the rest are determined by the triangular arbitrage

Fixed exchange rate regime with $N - 1$ fixed rates

- ▶ $N - 1$ CBs lose their independence
- ▶ Bretton-Woods: N th CB was FED
- ▶ Eurozone: N CBs have lost their independence and $(N + 1)$ th (ECB) is independent

TARGET-2 Controversy

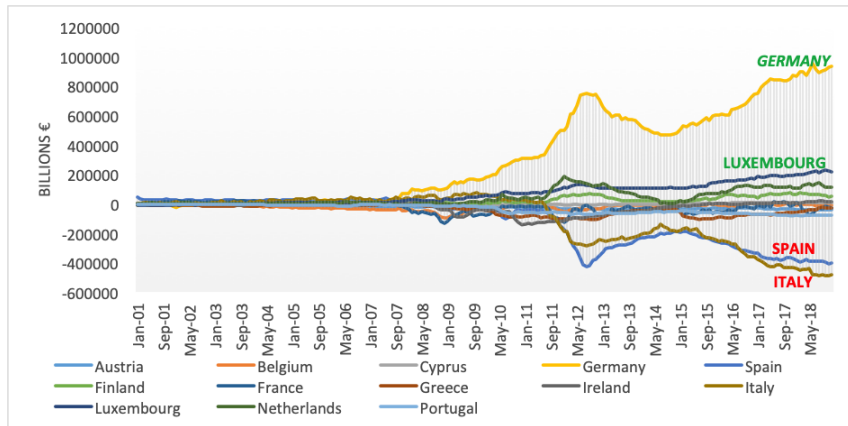
European sovereign debt crisis

- ▶ interbank lending froze
- ▶ Hume mechanism stopped
- ▶ note: normally trade deficit implies currency outflow, higher interest rates, reduction of demand, and return of competitiveness in the long run (wages adjust)

Arrangement

- ▶ paying banks were allowed to borrow from their CBs and payee's received a credit with their own CB
- ▶ balances recorded in TARGET-2 (Trans-European Automated Real-time Gross Settlement Express Transfer System)
- ▶ was this "stealth bailout"?

TARGET-2 Controversy



TARGET-2 Controversy

Interpretation 1

- ▶ balance of payments imbalances are fundamental
- ▶ no fiscal discipline (failed Stability and Growth Pact)
- ▶ long-term real exchange rate misalignments

Interpretation 2

- ▶ vulnerabilities in crisis countries lead to sudden panic
- ▶ support: long standing deficit (vulnerability), but imbalances only after the crisis

What Would Happen in Euro Exit?

Default of exiting country

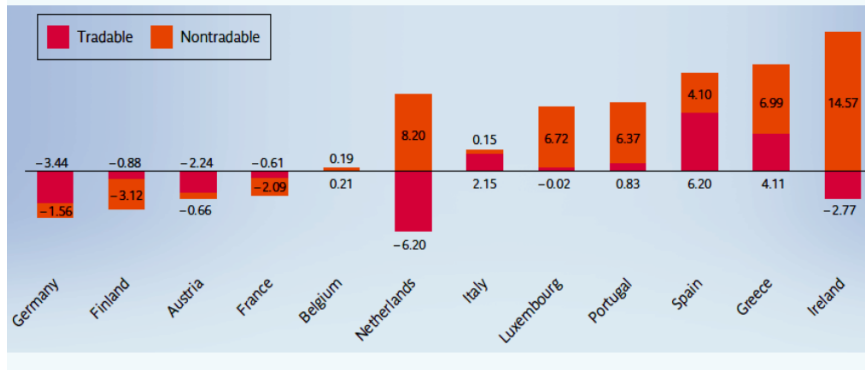
Losses shared by all eurozone CBs

Losses paid by new money creation

- ▶ only a little inflation pressure because new money would replace the old one destroyed in the exit

Cumulative Price Level Changes in Eurozone 1999–2010

(a) Consumer prices



Changes of Unit Labour Costs in Eurozone 1999–2010

(b) Unit labour costs

