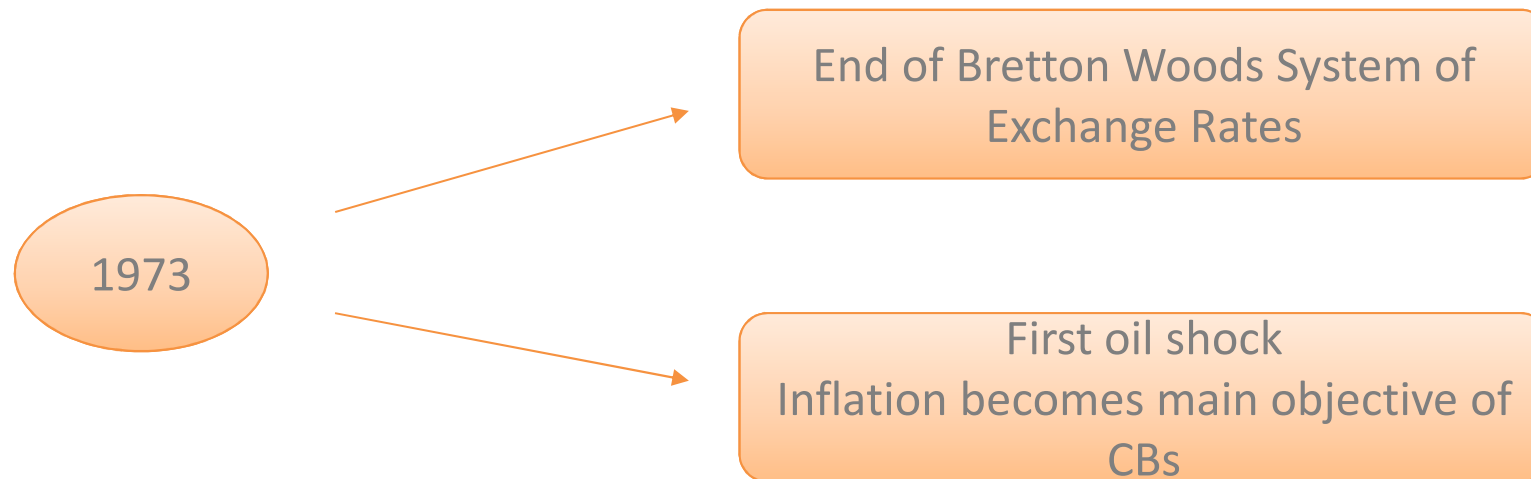


World Economy after 1973

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- No way to re-establish a world wide system of fixed exchange rates.
- The world is set on a "**system**" of "**free**" exchange rates (or a "**non system**")
- Policy-makers concentrate, especially after II oil shock (**1979**), on inflation (**price stability**) more than on exchange rates (**stability**)

In Europe an **area of exchange rate stability** is created after 1971:



* *Levi, 216-218 & 246 (Euro)*

Exchange Rate Arrangements, 2008-2013

(Percent of IMF members as of April 30 each year)*

Exchange Rate Arrangement	2008	2009	2010	2011	2012	2013
Hard pegs	12,2	12,2	13,2	13,2	13,2	13,1
<i>No separate legal tender</i>	5,3	5,3	6,3	6,8	6,8	6,8
<i>Currency board</i>	6,9	6,9	6,9	6,3	6,3	6,3
Soft pegs	39,9	34,6	39,7	43,2	39,5	42,9
<i>Conventional peg</i>	22,3	22,3	23,3	22,6	22,6	23,6
<i>Stabilized arrangement</i>	12,8	6,9	12,7	12,1	8,4	9,9
<i>Crawling peg</i>	2,7	2,7	1,6	1,6	1,6	1,0
<i>Crawl-like arrangement</i>	1,1	0,5	1,1	6,3	6,3	7,9
<i>Pegged exchange rate within horizontal bands</i>	1,1	2,1	1,1	0,5	0,5	0,5
Floating	39,9	42,0	36,0	34,7	34,7	34,0
<i>Floating</i>	20,2	24,5	20,1	18,9	18,4	18,3
<i>Free floating</i>	19,7	17,6	15,9	15,8	16,3	15,7
Residual/Other managed arrangement	8,0	11,2	11,1	8,9	12,6	9,9

*Includes 188 member countries and three territories: Aruba (Netherlands) Curaçao and St. Maarten (Netherlands), and Hong Kong SAR (China)

Monetary policy in a "fiat money" economy

Once in 1973 gold was definitely abandoned, monetary policy has been in search of an "anchor" ever since. While the gold Standard was more likely to be contractionary/deflationary, in a *fiat money economy* the risk is that monetary policy is inflationary.

One easy solution for a monetary anchor is to chose a fixed exchange rate, which however reduces the autonomy of monetary policy as shown in previous classes. After 1973, as we know, several countries adopted a flexible exchange rate.

Under a flexible ex. rate, there are normally two ways to anchor monetary policy.

1 Set a rule for the growth of monetary aggregates

2 Target inflation directly

Set a rule for the growth of monetary aggregates

This is the approach that started essentially in the FED under Paul Volcker at the end of 70s. It concentrates on money (M1, M2, M3) and credit aggregates.

$$MV=PQ$$

The basic logic is that money & credit growth should go hand in hand with real growth. In other words, they should accompany the process of economic activity without being either deflationary or inflationary. There can be several versions of this approach. For instance, Milton Friedman proposed that a constant, small expansion of money supply was the only wise policy. For more than a decade CBs in advanced economies and the IMF have followed this approach to set money supply. However during the 90s it became clear that monetary & credit aggregates had become difficult to control due to financial innovation.

Money Aggregate

M0 and M1: also called narrow money, normally include coins and notes in circulation and other money equivalents that are easily convertible into cash;

M2: includes M1 plus short-term time deposits in banks and 24-hour money market funds.

M3: includes M2 plus longer-term time deposits and money market funds with more than 24-hour maturity.

The exact definitions of the three measures depend on the country.

M4: includes M3 plus other deposits.

The term broad money is used to describe M2, M3 or M4, depending on the local practice.

Target inflation directly

As monetary aggregates became too unstable to control, CBs started to size inflation directly. This means to set their objective/target in terms of consumer price growth or price stability.

For instance, the ECB, is required by statute to contain inflation (in the eurozone) under **2%**. To set an inflation target does not mean that you forget about money supply & interest rates, but only that these become your "tools" to achieve the required objective in terms of price growth.

The FED also states regularly its desired inflation target, that is normally expressed as a range, usually **1,5-2%**.

Target inflation directly - *second part*

The more precise is the inflation target (both in quantitative terms and in terms of the time period required to reach the target) the less autonomy has monetary policy to target other objectives, such as growth & employment.

By contrast, the more discretion you have in setting the inflation target, the more you can be subject to criticism that your policy was inflationary.

The FED, for instance, pursues by statute two objectives:

i) Supporting growth & employment

ii) Fighting inflation

That's probably why the FED is often accused to be too "**accommodative**" and the ECB too "**restrictive**".

Current issues in monetary policy

In the current globalised economy, inflation is much less of a problem than in the past. Not only inflation has gone down dramatically but also oil & raw material price increases are less inflationary than in the past.

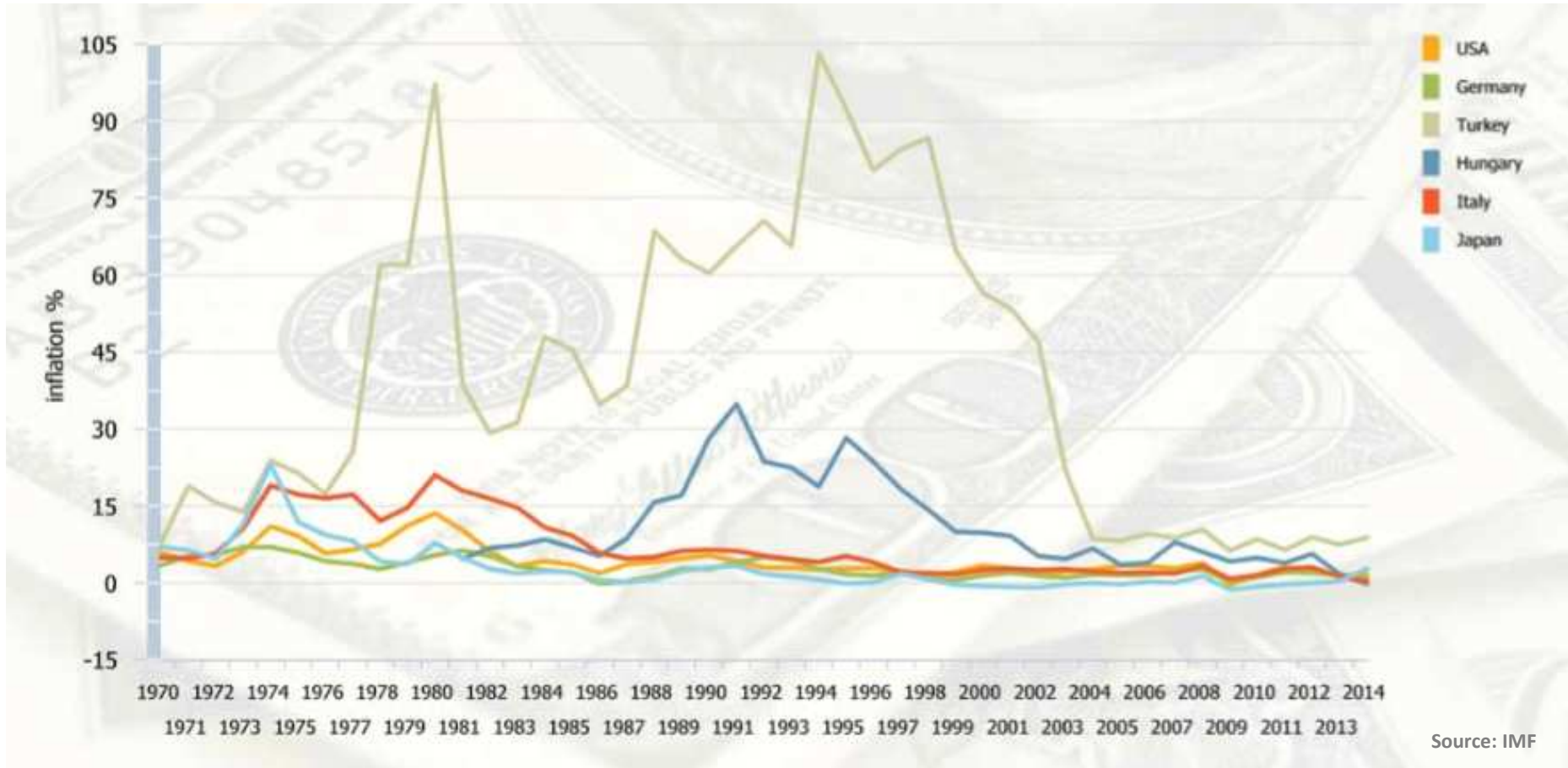
Therefore, during an expansionary phase, inflation shows up in asset prices (real estates & stock exchanges) more than in consumer goods.

Do to this new phenomenon inflation targeting has become problematic. CBs (like the FED) are often accused of being late in tightening money supply since the growth in asset prices is proof of an inflationary process.

CBs reply that their target is price inflation, that they have no mechanisms to size asset prices, and that they do not want to be responsible for a stock market or house market crash.

Average inflation rate (CPI) by decade

Historic inflation by country



The Hyperinflation Table

Location	Start Date	End Date	Highest Monthly Inflation Rate	Equivalent Daily Inflation Rate
Hungary	Aug. 1945	Jul. 1946	4.19 x 10 ¹⁶ %	207%
Zimbabwe	Mar. 2007	Nov. 2008	7.96 x 10 ¹⁰ %	98.0%
Jugoslavia	Apr. 1992	Jan. 1994	313,000,000%	64.6%
Germany	Aug. 1922	Dec. 1923	29,500%	20.9%
Greece	May 1941	Dec. 1945	13,800%	17.9%
China	Oct. 1947	May 1949	5,070%	14.1
Armenia	Oct. 1993	Dec. 1994	438%	5.77%
Turkmenistan	Jan. 1992	Nov. 1993	429	5.71
Perù	Jul. 1990	Aug. 1990	397	5.49
Bosnia and Herzegovina	Apr. 1992	Jun. 1993	322	4.92
France	May 1795	Nov. 1796	304	4.77
Ukraine	Jan. 1992	Nov. 1994	285	4.60
Poland	Jan. 1923	Jan. 1924	275	4.50
Nicaragua	Jan. 1986	Mar. 1921	261	4.37
Russia	Jan. 1992	Jan. 1992	245	4.22
Bulgaria	Feb. 1997	Feb. 1997	242	4.19
Soviet Union	Jan. 1922	Feb. 1924	212	3.86
Georgia	Sep. 1993	Sep. 1994	211	3.86

Source: IMF

16 Years of Inflation in the Eurozone



Source: IMF

Financial crises in the post Bretton Woods era

Several episodes of financial/exchange rate instability/BoPs imbalances (with domino effects):

- **1982 - LA debt crisis**
- **1992 - ERM crisis**
- **1994/95 - Mexican crisis**
- **1997-99 Asian financial crisis**
- **2001 Argentina's exchange rate & banking crisis**
- **2007 Current economic & financial crisis (Great Crisis)**

Financial crises in the post Bretton Woods era

Levi,
240-42

1982 - LA debt crisis

- Large exposure of industrialized countries' banks to developing nations (*similarities with current European financial crisis - Greece*)
- Little awareness that governments can default on their obligations
- Paul Volcker change in monetary policy leading to a substantial rise in (world) interest rates

Financial crises in the post Bretton Woods era

1992 - ERM crisis

- In september 1992 British Pound was pushed to abandon the system. It was followed by the Italian Lira. A year later the ERM was the facto dead.
- High German interest rates to counteract fiscal expansion after re-unification put the ERM under stress and may have triggered the crisis

Financial crises in the post Bretton Woods era

1994-95 - Mexican crisis

- Mexico was under a fixed exchange rate regime with the peso pegged to the US\$
- A lax fiscal policy, insufficient \$ reserves and rising lack of confidence in the banking system led to the abandonment of the peg
- A domino effect onto several emerging market could subside only after an IMF led support financial package was agreed

Financial crises in the post Bretton Woods era

1997-99 Asian financial crisis

- A crisis of vast proportions on which thousands of pages have been written in the economic literature
- Surprising since it touched the "Asian Tigers" which were a "model" of economic growth
- Causes not in sovereign debt but in private debt and badly regulated domestic banking systems

Levi,
243

Financial crises in the post Bretton Woods era

2001 Argentina's exchange rate & banking crisis

- Currency board since 1991 to fight inflation →
- By the end of 2001-early 2002 the currency board broke down
- Causes are debated: fiscal laxity was one of the reasons but an overvalued currency which contributed to low growth also played a role
- The case of Argentina interesting not for the domino effect (which was very limited) but for demonstrating how difficult it is to defend fixed exchange rates.

Fixed exchange
rate (peg to US\$)
 $\Delta M_s = \Delta R$

Financial crises in the post Bretton Woods era

2007 Current economic & financial crisis (Great Crisis)

Causes of financial crises

Although financial crises differ from one another, economists and economic historians study their common features with the aim to learn from past episodes of instability and avoid the same mistakes in the future.

In recent crisis episodes, inflation is less of a problem than in the past since globalization has reduced prices/inflation worldwide.

Financial crises are normally due to a combination of factors involving the exchange rate, especially when it is fixed, the BoP and/or the level of reserves, and the financial/banking system.

In particular, it is recurrent to have a situation in which the banking system is fragile, the BoP has a deficit (initially in the current account) or reserves are limited, the exchange rate is pegged and overvalued, and a devaluation is likely. When this situation persists sooner or later speculation will attack the peg and cause a devaluation, with all its consequences.

Causes of financial crises

Normally, however, the exchange rate, the BoP and financial fragility are symptoms of deeper problems. These may be weaknesses in the productive system (growth & exports are too low), problems in the functioning of some markets (protections and restrictions of transactions are widespread) or "governance" hurdles in the banking system or corporate system.

Bad economic policies are also often the cause of financial crises, as in the case of a prolonged lax fiscal policy.

A note of Exchange Rate Instability

While in the past flexible exchange rate were considered source of instability, nowadays it seems that fixed exchange rates are the real source for concern. When currency is overvalued and a devaluation is largely expected, this may become "self-fulfilling". Speculation in the end succeeds in causing the peg to break-down. Paradoxically, it happens that fixed rates are unstable!

2008-2012 Economic & Financial Crisis

1. Considered the **most severe** worldwide crisis since the Great depression, and in fact it is normally said "**The Great Crisis**".

2. Largely unexpected

Although several international institutions had sent warnings since the growth process was accumulating imbalances (especially in BoPs) they did not foresee the crisis. None could believe that a serious financial crisis would develop in the most advanced system of the world, the US. "If a crisis occurs - most of us thought - then it would come from emerging markets or a fall in the \$".

3. If in the first years the center of the crisis were the US, in the last 3-4 years it has become Europe (sovereign debt crisis).

2008-2012 Economic & Financial Crisis

4. From financial the crisis has rapidly muted in a real crisis, with sharp falls in GDPs (mostly in Europe: in 2009 Ireland -5%, UK -2.8%, Germany -2.3%).

5. Main Features

Although the Great Crisis differs in several respects from past crisis episodes, it seems to replicate the normal/canonic pattern:

Imbalances accumulate and spread out in the system during the expansionary phase.

Prices/asset values rise exaggeratedly as in a classical boom episode.

Monetary policy tightens, prices & asset values start to fall and imbalances come to the fore causing a break of the system.

2008-2012 Economic & Financial Crisis

As far as inflation is concerned, while in the past it was consumer inflation (that is: inflation in the price of goods & services) in more recent episodes inflation appears in the forms of:

Stock price inflation

Real estate prices

**Oil & raw materials
valuation**

How the crisis developed - 1

A complete **TIMELINE** of the Great Crisis can be found in the website of the FED of St.Louis. Here only the main events and factors underlying the crisis.

1st PHASE 2007-2009 The (mostly US) subprime loans crisis

- **A real estate boom, in quantities & prices, had characterized the years 2004-2006;**
- **Subprime loans (mortgages to individual with a very poor credit rating) contribute to the boom;**
- **SL offered at low rates for the first years, but the rates would rapidly rise subsequently;**
- **Fraudulent behaviour on the part of financial "agents" contributed to the spread of subprime loans**

How the crisis developed - 2

Serious defaults in banking systems worldwide:

- *Northern Rock in the UK (nationalized in february 2008)*
- *Bear Stearn defaults in march 2008 (merges with JP Morgan)*
- *Merryl Lynch merges with Bank of America (September 2008)*
- *Lehman Brothers defaults and the panic spreads across the markets*
- *AIG is saved by US financial authorities*
- *Authorities around the world have to intervene in support of major financial institutions (Fortis, UBS, Hypo Real Estate, Royal Bank of Scotland, Dexia....)*
- *Between September & October 2008 the S&P 500 falls by 26%*

How the crisis developed - 3

- *The interbank market (an essential channel for liquidity through the banking system) is literally frozen due to a widespread lack of confidence in the system*
- *In 2009 financial markets stabilize, due to the intervention of the authorities, but GDPs around the world sustain dramatic falls.*

End of 1st part of the Crisis

Things to keep in mind

- **Subprime Loans were assembled in packages called CDO (Collateralized Debt Obligations) and were sold by one bank to the others in order to diversify risk**
- **Rating agencies assigned high ratings to CDOs which were supposed to diversify risk**
- **There is a clear responsibility in US and international supervisory authorities in having overlooked the risk that was spreading throughout the system**
- **In this respect, the case of US investment banks, which were subject to a lax supervision, is worth mentioning. They are now transformed in commercial banks**

II PHASE 2010-2012 The (European) Sovereign debt crisis and Greece

- **First Eurozone crisis since its creation in 1999;**
- **At the end of 2009 Greece enters into serious economic difficulties, after a period of rapid growth (5.6% in 2006);**
 - *The new government (Papandreu) reveals that the public deficit in 2009 would be 12.7%, the triple of what claimed by the previous administration;*
 - *GDP falls by 2% and the economy enters into recession;*
- **Serious repercussions across Europe, especially Spain, Portugal and Italy**
 - *Spreads explode*
 - *Ratings on sovereign debts are cut*

2010-2011



May 2010 - Support Plan by 110 billion euros in support of Greece by EU & IMF

The crisis continues affecting the European banking system. European banks are in fact full of sovereign bonds

The easy and massive financing by ECB is used to buy new sovereign bonds, which aggravates the problem

- Banks are required to raise more capital and this reduces credit to the economy. The recession worsens

The economic & financial crisis in Europe continues throughout 2012 with an increasing risk of Greece and later of Italy leaving the euro.

Critical questions

Is the crisis due to:

- 1 Public finances out of control?
- 2 Structural weaknesses in the regulatory framework?
- 3 Competitiveness gap among european economies (which cannot be adjusted through exchange rates)?

All 3 factors have played a role, but 3 is probably more important than is normally believed, especially for Greece, Spain, Italy & Portugal

Critical questions

What if Greece (or Italy) exits the euro zone?

- Getting back to the dracma could allow an exchange rate adjustment that would support exports & growth;
- However, as Greece debt is denominated in euro, the cost of the debt would rise dramatically



Defaulting on the debt will be
unavoidable

- Domino effects on other countries are possible and are the reason why European authorities will continue support Greece, if they do not want to put at risk the monetary union

What is Quantitative Easing

The European Central Bank has announced action aimed at stimulating the troubled eurozone economy in the face of deflation and recession.

Unlike central banks in the United States and Britain, the ECB has so far resisted implementing a programme of buying government bonds. That is the process known as quantitative easing.

Governments and central banks like "just enough" growth in an economy - not too much that could lead to inflation getting out of control, but not too little that there is stagnation. Their aim is the so-called "Goldilocks economy" - not too hot, but not too cold.

One of the main tools they have to control growth is raising or lowering interest rates. Lower interest rates encourage people or companies to spend money, rather than save.

But when interest rates are almost at zero, central banks need to adopt different tactics - such as pumping money directly into the economy.

This process is known as **Quantitative Easing** or **QE**.

How Quantitative Easing works

The central bank buys assets, usually government bonds, with money it has "printed" or created electronically these days. It then uses this money to buy bonds from investors such as banks or pension funds using this "new" money, which increases the amount of cash in the financial system, encouraging financial institutions to lend more to businesses and individuals. This in turn should allow them to invest and spend more, hopefully increasing growth.

Quantitative easing: the theory

