History of Central Banking

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Overview of the program

1. Origins
2. The dual banking system and the lender of last resort
3. The Classical Gold Standard (approx. 1880-1914)
4. Genesis of modern monetary policy (1918 - 1939)
5. The Bretton Woods System (1944-1973)
6. Floating exchange rates and monetary-policy autonomy (since 1973)
7. The aftermath of the global financial crisis...

Origins

- Why bother about the origins and history of central banks?
- ↷ One reason is that in the past, monetary policy, international monetary arrangements, and central banking were very different from what we know today. It can be misleading to ignore this.
- ↷ Some of today's monetary arrangements can be traced back to specific historical events. Hence, contemplating the past can help us to understand contemporaneous central banking.
- The first central banks such as the Swedish Riksbank (est. 1668), the Bank of England (1694), or the Banque de France (1800) were set up as **private companies** to raise funds for the government. Usually, the official privilege to issue banknotes was granted in exchange.
- Due to the lack of alternative means to settle payments or save money, the privilege to issue banknotes was very lucrative!

Figure 1.1: An early banknote

One pound banknote issued by the Bank of England in 1803. The „promise to pay on demand the sum of one pound“ is confirmed by the handwritten signature of the cashier.

Currency versus banking school. Some early modern issues.

Around 1800—and in particular in Britain—the introduction of banknotes gave rise to lively debates anticipating some fundamental issues in central banking.

For the **currency school...**

(e.g. David Ricardo), banknotes were just a modern form of money. To limit their supply and preserve their purchasing power, they should be fully backed by gold, as there is a close connection between the money supply and inflation (so-called **bullionists** emphasised the last point).

The **banking school...**

(e.g. Thomas Tooke, John Fullarton) argued that banknotes were rather a form of credit. Hence, banks should be allowed to supply them as freely as possible from government intervention to satisfy the financial needs of the economy.

The dual banking system and the lender of last resort

- In Britain, the currency school prevailed. The Resumption Act of 1817 and Peel's Act of 1844 created a note-issuing monopoly. Yet, the Bank of England had to cover banknotes almost completely by gold.
- Having a central note-issuing bank had far-reaching consequences.
  1. Deprived of right to issue banknotes, commercial banks turned to the collection of savings via providing current account and credit facilities to the public. This is the origin of today's **dual banking system** where a central bank controls the monetary base and commercial banks specialise in the savings and the credit business.
  2. Due to its size and official backing, the Bank of England adopted a key position within the financial system. Above all, the Bank was best positioned to provide liquidity assistance in times of financial distress. Indeed, central banks gradually learned to adopt the role of **lender of last resort** amid a series of banking crises during the 19th century. The key principles were developed during that time by economists such as Henry Thornton and Walter Bagehot (who, by the way, also coined the word "central bank").

Figure 2.1: Pioneers of the lender-of-last-resort policy

Henry Thornton (1760-1815)	Walter Bagehot (1826-1877)

<u>In times of crisis the central bank should</u>

1. Lend freely.
2. At a penalty rate (above the market rate before the crisis).
3. Against good collateral priced at conditions before the crisis

- Of course, these developments did not occur everywhere at the same time. Britain and the Bank of England took the lead.
- Conversely, during the 19th century, the majority of countries did not even have a central bank and operated still under a system of **free banking** where several banks could issue banknotes.

Examples: Though having a national currency, until 1914 the United States, and until 1907 Switzerland had no central bank.

- Competition has well-known advantages. However, with respect to issuing money, free banking suffers from serious disadvantages.
  - When the quality of banknotes differs across commercial banks, this might undermine the trust in (fiat) money.
  - By prescribing a fixed convertibility into gold, banknotes can be uniform under free banking. However, the money supply is then inelastic.
  - Lacking a lender of last resort undermines arguably financial stability.
  - Money might be what economists call a natural monopoly. Since it is convenient to have only one form of money, there is anyway a natural tendency to end up with only one (central) note-issuing bank.

Table 1: Central banking institutions before 1900

Bank	Founded	Monopoly note issue	Lender of last resort (decade)
Sveriges Riksbank	1668	1897	1890
Bank of England	1694	1844	1870
Banque de France	1800	1848	1880
Bank of Finland	1800	1886	1890
Nederlandsche Bank	1814	1863	1870
Austrian National Bank	1816	1816	1870
Norges Bank	1816	1818	1890
Danmarks Nationalbank	1818	1818	1890
Banco de Portugal	1846	1888	1870
Belgian National Bank	1850	1850	1850
Banco de Espana	1874	1874	1910
German Reichsbank	1876	1876	1880
Bank of Japan	1882	1883	1880
Banca d'Italia	1893	1926	1880

Source: Capie et al. (1994, p.6).

The Classical Gold Standard (approx. 1880-1914)

- Britain was on the gold standard since the 1820s. Imitating British institutions, other countries adopted the Gold Standard in the 1870s.

Table 2: The transition to the gold standard in 1870s

Year	Country
1821	Britain (resumption of convertibility into gold after suspension in 1797).
1854	Portugal (which traded heavily with Britain) adopts to gold standard.
1871	Germany (mint ceases to purchase silver).
1872	Holland (minting of silver suspended).
1873	Germany, Scandinavian countries formally adopt gold; US demonetises silver.
1876	Spain (silver coinage suspended).
1878	Belgium, Italy, France, Switzerland formally suspend silver coinage.
1879	Austria-Hungary suspends silver coinage; US effectively on gold.
1890s	India, Ceylon, Siam, Argentina, Mexico, Peru, Uruguay link currency to gold.

Source: Capie et al. (1994, p.11), (Eichengreen, 2008, pp.15ff.). Notes: Spain suspended gold convertibility in 1883. Italy, aside from a short period in the 1880s, and Austria Hungary did not institute the gold convertibility until the 1890s.

The gold standard was characterised by...

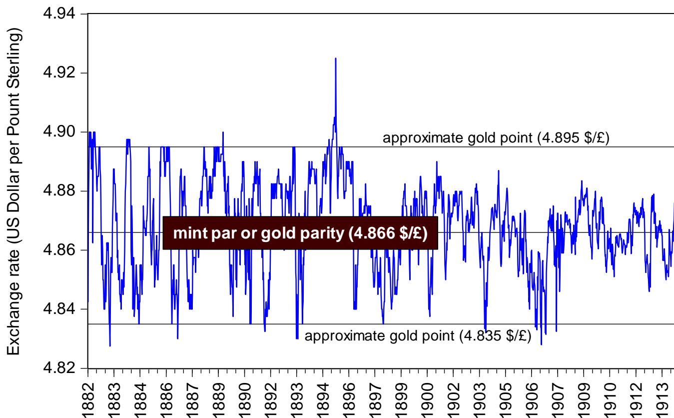
1. ... an official definition of the value of a currency in terms of gold,
2. gold and capital can flow freely across borders, and
3. central banks that are ready to convert banknotes into gold.

- Essentially, an international currency system with officially fixed exchange rates (so-called mint pars) arises from this.

Example: Since one pound sterling was worth 7.32 and one US dollar 1.5046 grammes of gold, the exchange rate at mint-par was

$$\frac{7.32 \text{ gramme per pound}}{1.5046 \text{ gramme per dollar}} \approx 4.866 \text{ dollar per pound.}$$

Figure 3.1: An exchange rate during the gold standard



Data Souce: Neal-Weidenmier Gold Standard Database (Market exchange rate: New York rate on London, demand, offer).

- Via arbitrage, free gold flows automatically enforced the mint par.

Example: Suppose the above-mentioned exchange rate moves to 5 dollars/pound. Then...

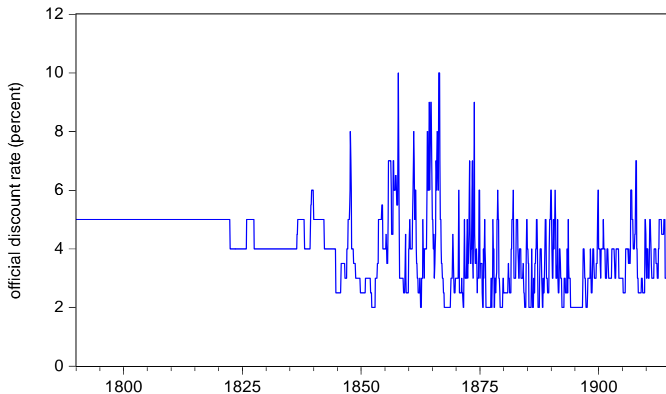
- In practice, the gold standard deviated in many regards from the ideal of a freely convertible monometallic currency backed by gold.
  1. Since gold shipments were costly, market exchange rates fluctuated around the mint-par within the (narrow) limits of the **gold points**.
  2. Only some countries backed their currency substantially by gold (before WWI: Britain, France, Germany). Silver (e.g. India, China) and bimetallic currency systems existed well into the 19th century. Countries that borrowed heavily abroad had had often inconvertible paper money (e.g. Latin America).
  3. In times of crises and war, gold convertibility was usually suspended.
  4. The volume and discoveries of gold were never sufficient to cover the enormous increase in payments during the 19th century. Most actual transactions where settled by means of **bills of exchange**.

Figure 3.2: Gold and gold-exchange standards

Classical Gold Standard (1880s - 1914)			Bretton Woods System (1945 – 1970s)		
	Substantial gold coverage of money (banknotes, gold coin)	Money (banknotes) only partly convertible into gold.		Substantial gold coverage of money.	Money only partly convertible into gold.
Official reserves held mainly in gold.	England, Germany	Belgium, Switzerland	Official reserves held mainly in gold.	X	USA
Official reserves held mainly in foreign currencies.	South Africa, Australia	Austria-Hungary, Latin America	Official reserves held mainly in foreign currencies.	X	Remaining countries of the western hemisphere.

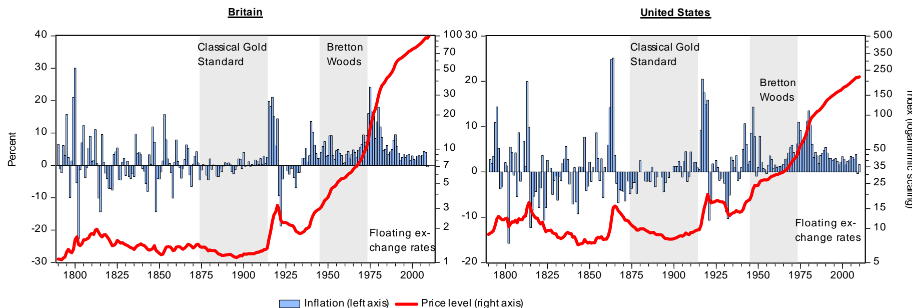
- During the gold standard, the main task of central banks was to preserve the mint-par. For this, they needed an adequate "reserve" of gold.
- It is remarkable, how small the gold shipments were to achieve this. The reason was that during the second half of the 19th century, central banks became aware that they could manipulate the discount rate (interest on accepting bills of exchange) to maintain the mint-par.
- For example, to follow the **"rules of the game"**, central banks had to raise the discount rate when a trade deficit weakened its currency (to stop the outflow of gold/attract capital from abroad). This is an early form of using an interest rate as monetary-policy tool.
- The gold standard can in principle work without central banks. Yet, aside from stabilising the banking system (lender of last resort), central banks have additional advantages as regards centralising the management of a country's gold reserves. Hence, central banks founded around 1900 were sometimes called **reserve banks**.

Figure 3.3: Discount rate of the Bank of England during the 19th century



- A key advantage of the gold standard is that it constrains money growth and limits abuses of monetary policy for fiscal purposes. Indeed, most episodes of very high inflation appear after 1914.
- The Gold Standard is often praised as the ultimate self-correcting and stable currency system. However, this is only partly justified.
    1. The "rules of the game" meant that central banks mostly ignored the domestic economic conditions. Monetary policy was subordinated to the external objective of gold convertibility.
    2. Certain asymmetries reside in the gold standard. It is more painful for international borrowers to stick to the rules (imposing high interest rates). It is not surprising that mainly international lender nations (Britain, France, Germany, US) formed the core of the gold standard.
    3. The track record of the gold standard is mixed. Without a commitment to price stability, prices moved unpredictably. Persistent deflation occurred when the economy outgrew gold production. Conversely, gold discoveries (California, 1848; Australia 1852; South Africa, 1886; Alaska,1896) spurred inflation.

Figure 3.4: 200 years of changing prices

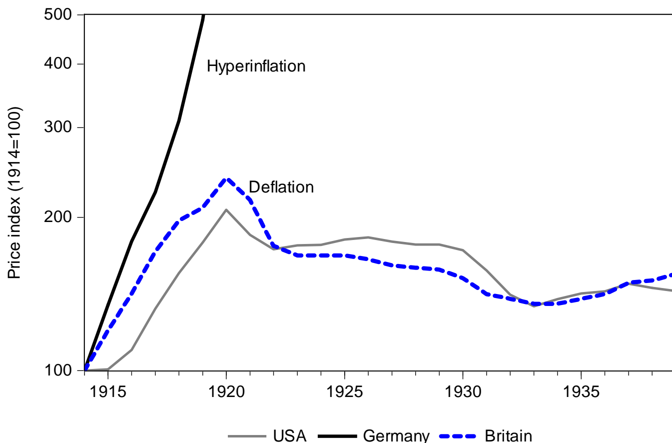


Genesis of modern monetary policy (1918 - 1939)

- To finance the war, the gold convertibility was suspended during WWI.[1] Prices began to rise rapidly.
- After 1918, all belligerent nations (winners and losers) were confronted with the question how to deal with the massive debt overhang (partly in form of inconvertible banknotes). There were two (equally unpalatable) ways to do this.
    1. **Inflate the debt away**. This is essentially the path taken by Germany that lead to monetary chaos culminating in the hyperinflation of 1923.
    2. Conversely, Britain and the United States tried to **restore the gold standard** at the old parities. However, this necessitated a reduction of money supply and lead to **deflation** and aggravated levels of unemployment.

[1] Suspensions of convertibility in times of war and political crises had occurred before. Napoleonic Wars 1793-1815: Suspension in England (1797 - 1821) and France (1805 - 1813); Revolutions of 1848: France (1848-1850) and Austria (1848-1858); American Civil War: US (1862-1866); Franco-Prussian War: France (1870-1874).

Figure 4.1: Two ways to deal with debt



Data: MeasuringWorth (USA, Bratain), Price level for food. Statistisches Jahrbuch für das Deutsche Reich.

- By the middle of the 1920s, the debt problem seemed to be under control. Germany had stabilised prices with the introduction of the Rentenmark in 1923. Sterling returned to the gold convertibility at the pre-war parity in 1925.
- However, this period of stable exchange rates and solid economic growth (**roaring twenties**) came to an end with the New York stock market crash of 1929.
- In the US, the economy collapsed, unemployment increased and many firms and households struggled to repay their debt.
- Since the US started to recall loans it had provided to European nations, the **Great Depression** subsequently turned into a worldwide economic crisis.

Figure 4.2: A black Thursday on Wall Street

Stock market crash in New York (October 1929)

- Numerous reasons exist why the Great Depression was so severe.
- However, from a monetary perspective, the viciousness of the **debt-deflation mechanism** (Irving Fisher) was arguably responsible for the ongoing instability in the banking system.
- As lender of last resort, central banks could have short-circuited this vicious cycle by providing liquidity support to the banks.
- However, this undermined the gold parities (there was not enough gold to back an expanded money supply). The dogma of the gold standard held back desperately needed currency devaluations.
- In 1931, Britain was forced to devalue and many countries followed thereafter. It is remarkable how economies started to recover only after taking this step (and hence expand the money supply).

Figure 4.3: Debt-deflation mechanism

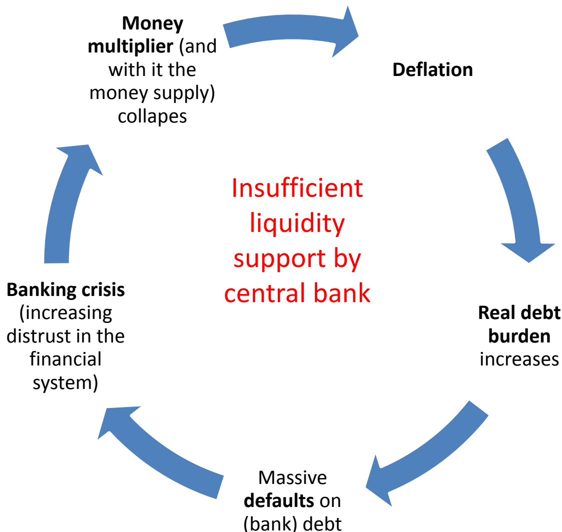
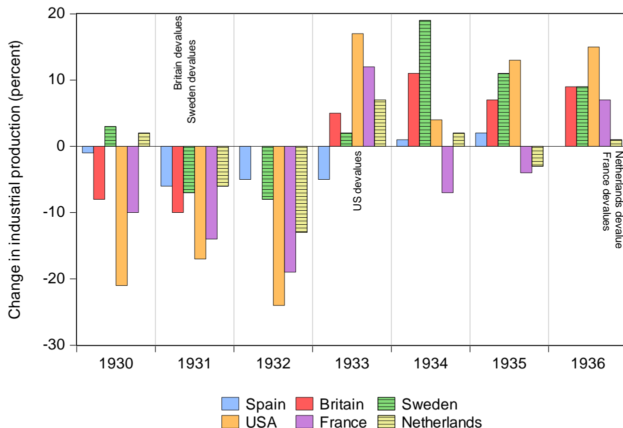


Figure 4.4: Countries that devalued early recovered first



Data: Bernanke, Benjamin, und Harold James, 1990: The Gold Standard, Deflation, and Financial Crisis in the Great Depression: An International Comparison. in: Financial Markets and Financial Crises, Glenn Hubbard (Hrsg.), University of Chicago Press.

! Fundamental changes in the attitude to monetary policy took place after the 1930s. With gold parities (exchange-rate pegs) that can be adapted to address domestic economic problems, the idea that monetary policy can be used as a tool for macroeconomic stabilisation arises!

- With this, also the political influence on central banks increased.

Table 3: The nationalisation of central banks

Year	Nationalised central bank
1936	Danmarks Nationalbank; Reserve Bank of New Zealand
1938	Bank of Canada
1945	Bankque de France
1946	Bank of England
1948	Nederlandsche Bank; Banque Nationale de Belgique
1949	Norges Bank; Reserve Bank of India

Source: Capie et al. (1994, p.23). Notes: Aside from the case of Belgium, nationalisation refers here to state ownership of 100 per cent of the share capital of the central bank.

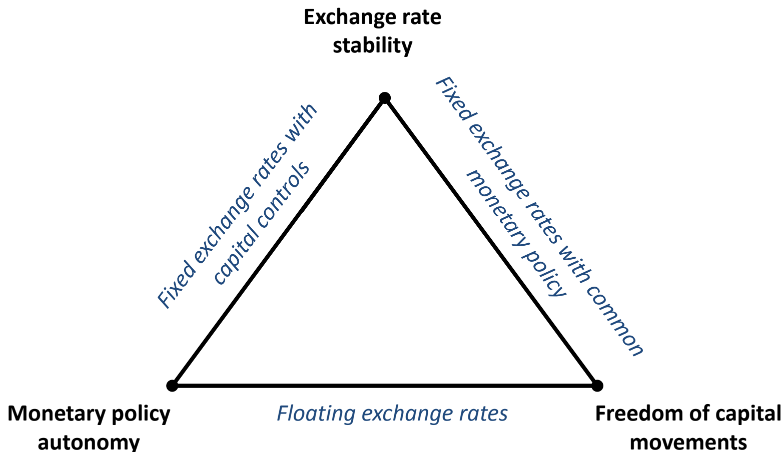
The Bretton Woods System (1944-1973)

- After WWII, the international financial system was organised around a **gold-exchange standard** where the US dollar was convertible into gold at an unvarying parity of 35$/ounce and the remaining currencies were pegged (at adjustable rates) against the US dollar.
- The aim of this international currency system, which resulted from the Bretton Woods conference in 1944, was to prevent that the monetary and economic chaos of the interwar period (1920s, 1930s) would happen again.
- Thereto, the direct and indirect links with gold were kept, but complemented with governments managing the exchange rate, capital flows, and domestic demand.

- Adjustable pegs in case of a "fundamental disequilibrium" in the balance of payments were something new. Aside from providing emergency lending, the **IMF** was initially founded to determine when a country suffered from balance-of-payments crisis that could only be restored through external (exchange-rate parities) and not internal (wages, prices) adjustments.
- Though the Bretton Woods System worked relatively well until the middle of the 1960s, there were well-known flaws.
  1. The dollar had a privileged position as the US was the only country that did not have to sacrifice its monetary-policy autonomy for a fixed exchange rate.
  2. Linking the dollar to gold should have prevented an abuse of this "exorbitant privilege". According to the so-called **Triffin Dilemma**, in the long-term, the pledge to keep the US dollar convertible was, however, not credible. If the money supply increases, as a result of economic growth and/or inflation, central banks would have to increase their dollar reserves. This creates a confidence problem undermining the promise that reserves can be redeemed at a rate of 35$ an ounce.

- During the 1960s, several factors exacerbated these problems.
  1. Loose US fiscal and monetary policies created a dollar overhang.
  2. Keynesian policies of exploiting the alleged trade-offs in the Phillips curve by means of an active mix of fiscal and monetary reached their limits. Seeking short-term political gain from low unemployment lead to long-term pain in terms of high inflation.
  3. Initially, the Bretton Woods countries imposed capital controls against destabilising speculation. However, during the 1960s, it became easier to transfer funds across borders (e.g. Euro markets).
- The 1960s saw more inflation and speculation on the gold market.
- Though adjustments were made (two-tier gold market in 1968; revaluations of the German mark; devaluation of the dollar to 38$/ounce in 1971), the Bretton Woods System eventually collapsed.
- The Bretton Woods System did not succeed in reconciling the internal and external economic goals (the trade-offs appearing in the trilemma of international finance). At the end of the day, mainly Germany was no longer willing to "import" the inflationary US monetary policy.

Figure 5.1: Trilemma of International Finance



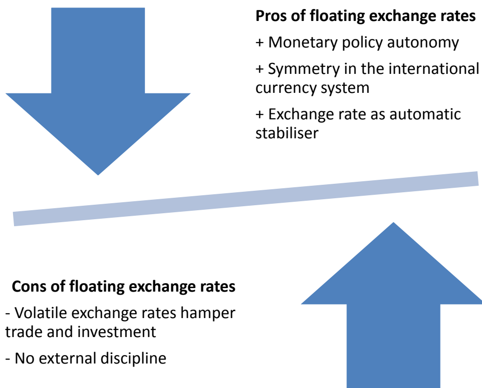
Floating exchange rates and monetary policy autonomy (since 1973)

- For the major currencies (dollar, mark, pound, yen) a new era of floating exchange rates began after 1973.

! Maybe, it is not immediately evident that this was a historically unprecedented change with fundamental consequences. Before the 1970s, virtually all currencies were linked (directly or indirectly) to some commodity (gold, silver etc.). Though suspensions of convertibility had occurred before, they were seen as temporary emergency measure in response to severe financial or political crises.

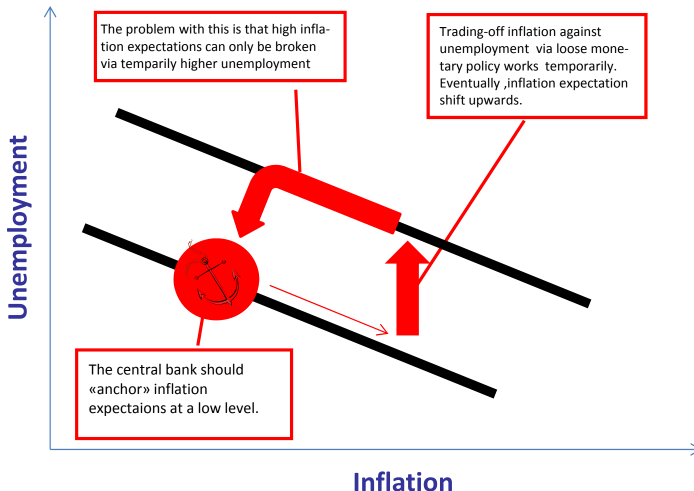
- Of course, floating exchange rates have positive and negative aspects.

Figure 6.1: Pros and cons of floating exchange rates



- At the time, the main reason to install floating exchange rates was that they free-up monetary policy from external constraints. The focus of monetary policy could shift to internal goals (controlling inflation).
- At the end of the 1960s, in many countries, inflation started to be an important issue since double digit price increases had become the norm (the **wage-price spiral** preserved inflation expectations whilst the **oil-price shocks** led to further cost-push inflation).
- The 1970s were an era of **stagflation** (weak economic growth, high unemployment and high inflation), which underscored the idea that loose monetary policy can only temporarily boost aggregate demand. In the longer-term, there is no trade-off between unemployment and inflation since inflation expectation adapt to permanent increases in the money supply (**expectations augmented Phillips curve**).

Figure 6.2: Expectations augmented Phillips curve



- In the 1980s and 1990s, central banks were successful in controlling inflation (**Great Moderation** of inflation and unemployment).
- **Central-bank independence** was a key factor to achieve this. Arguably, breaking the link between fiscal and monetary policy allows a central bank to keep an eye on the long-term effects and hence to better anchor the inflation expectations at a low level. Usually, this was done by announcing an **inflation target**.
- We are dealing with big questions here such as.
  1. How to deal with the conflict between short and long-term goal?
  2. How to steer expectations?
  3. Should monetary policy be discretionary or rules-based?
  4. What is an appropriate mandate for central banks?
- Of note, these developments did not happen everywhere or occur simultaneously. Many European countries opted for a closer monetary integration. Other countries had to manage the transition from a planned to a market economy. Fixed exchange rates are still widely applied.

Figure 6.3: Stagflation and the Great Moderation

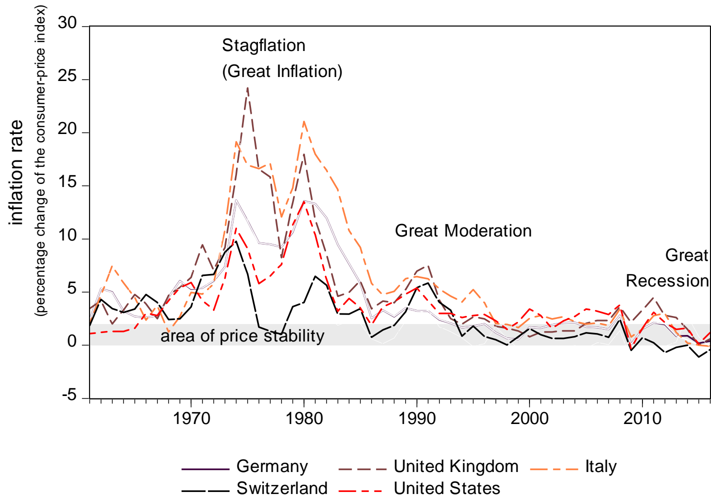
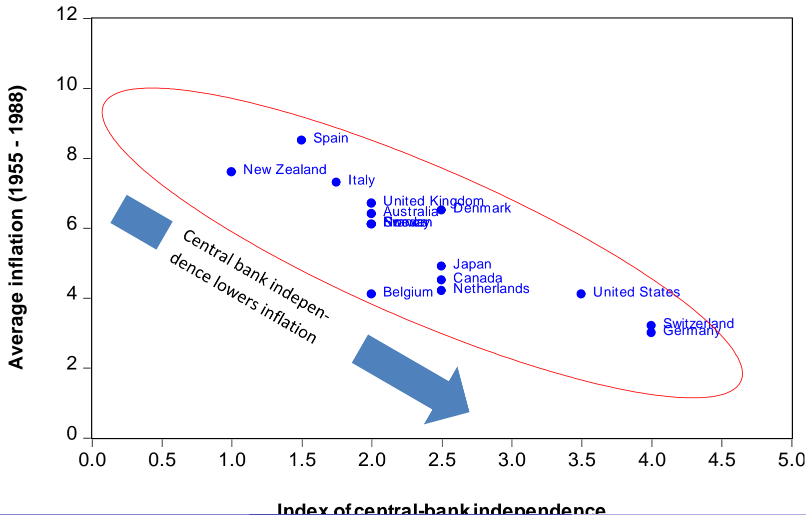


Figure 6.4: Central-bank independence. A success story



The aftermath of the global financial crisis...

- Probably, the global financial crisis will affect the way in which we think about monetary policy and central banking.
- As price stability apparently does not ensure financial stability, questions about rewriting central-bank mandates have already been raised.
- This debate has only begun and is far from offering solid conclusions.
- There is nothing new here. Cornerstones of contemporary central banking can be traced back to past experiences. For example, the idea that monetary policy can be used to manage economic outcomes is by and large a result of the Great Depression. The importance of central-bank independence, policy rules, and central-bank mandates became evident after the stagflation of the 1970s. Maybe ironically, lender-of-last-resort interventions (which were sometimes seen during the global financial crises as "unprecedented") are one of the oldest activities of central banks dating back to the 19th century.

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