

Banking, Centrally.

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1 Introduction

Recurring financial crises have become a hallmark of the modern financial system. It would seem that, every five years or so, a 100-year event destabilizes the system. Moreover, each crisis appears more violent than the previous one.

–Philipp M. Hildebrand, *Is Basel II Enough? The Benefits of a Leverage Ratio*

This lecture is about central banks, their history, and their current prominence in modern economies, especially through the difficult times of an economic downturn. There are several truly great books written about central banks and how they are supposed to operate, how they actually operate, and everything in between¹. The chairman of the Federal Reserve, Ben Bernanke, is ranked the fourth most powerful man on Earth this year.

It almost goes without saying that banks play a crucial role in the international monetary and financial system. Central banks regulate the supply of money denominated in their currency, and monetary policy is effected by central banks through private banks and from there into the real economy, much in the manner the IS-LM model might characterise² the process.

In this lecture, we will briefly discuss the history of central banks, and then move onto descriptions of what they do, how they go about their activities as lender of last resort, etc, and we will close with some new and interesting predictive models of central bank behaviour.

2 History

The first international bank was started by the Knights Templar in the 12th and 13th Centuries. The debuting of the concept was not a success. On Tuesday, May 12, 1310, 54 of the knights were burnt alive by King Philip IV of France, in an effort to take control of the Templar's vast wealth after Philip had debased the French currency (Weatherford, 1997, pp. 64-67). During the 13th Century, the knights had used their power and prestige to amass vast wealth. A series of papal bulls allowed the knights to keep the spoils of their conquests, creating a reserve of capital.

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¹Representative examples are Minsky (1986), Davies (1994), Zeltzer (1994).

²Or, caricature...

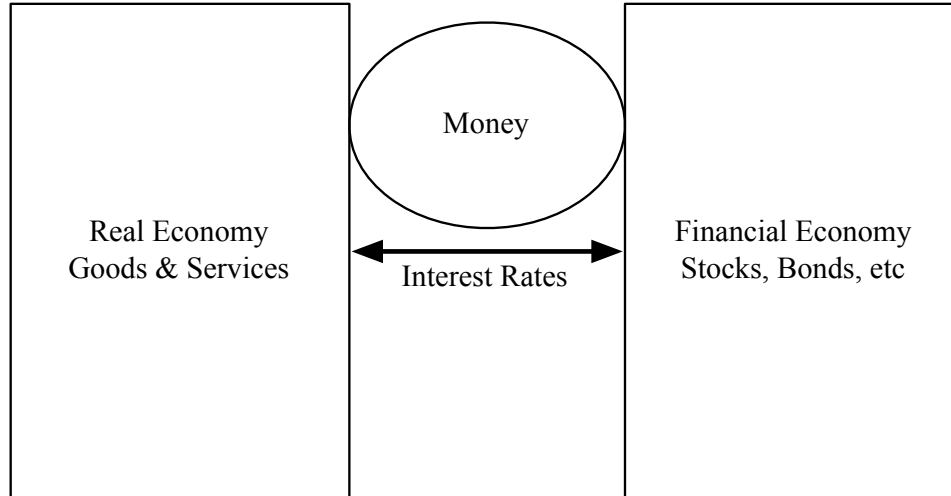


Figure 1: A macroeconomic schema.

Combined with a network of well guarded castles throughout Europe and the East that could be used as store houses for valuables.

A traveller could leave their money in one of the Templars' castles in France, receive a credit note, or get a mortgage, from the Templars, and receive gold coins when required somewhere else at the redemption of the note. The Templars charged a fee for the transactions. They amassed great wealth. At their peak, the Templars employed an estimated 7,000 people amongst 870 castles throughout Europe.

Though they were, essentially, a private bank, the Templar's destruction was the first use of a bank's accumulated wealth to bail out the excesses of a State. Their wealth was transferred to the French State. The destruction of the Templars allowed the rise of the Italian banking families, many of whom went on to sponsor the Renaissance³.

England in 1844. The Bank Charter Act gives the Bank of England a monopoly on the issuance of currency in the UK. The Bank must guarantee the convertibility of all its paper notes into gold on demand, thus making the a paper pound just as valuable as a gold one. The Bank of England is, at this time, just *private* bank operating on a government charter. It evolves gradually into its current form over centuries. The great economist J. K. Galbraith (1975, pg. 30) observed of the Bank:

Of all institutions concerned with economics none has for so long enjoyed such prestige. It is, in all respects, to money as St. Peters is to the Faith. And the reputation

³A pseudo-profound footnote: Academics can't help but notice that the revolution in commerce inspired the renaissance, which coincided with the greatest leap forward in science and mathematics in human history. The new, objective philosophy based on Descartes' formulation of mathematics allowed the solution of a number of outstanding problems in science. Cartesian philosophy, in addressing the problems of human knowing, created the mind-body problem, amongst other things, but it did usher in the modern age. Simmel (1978, pp. 277-278) thought the rise of money created a new system of thinking, where:

... money by its very nature becomes the most perfect representative of a cognitive tendency in modern sciences as a whole: the reduction of qualitative determinations to quantitative ones.

is deserved, for most of the art as well as much of the mystery associated with the management of money originated there.

Once the British Empire assumed its role as hegemonic global power, supported by the Royal Navy, the Bank became the template for central banks around the world. Now let's turn to how central banks make their money.

2.1 Functions of a Central Bank

Any central bank will involve itself in monetary policy in many ways:

1. Clear cheques
2. Issue new currency
3. Withdraw damaged currency from circulation
4. Administer and make discount loans to banks in their regions
5. Evaluate proposed mergers and applications for banks and other financial intermediaries to expand their activities
6. Act as liaisons between the business community and the monetary policy community.
7. Examine bank holding companies and state-chartered member banks
8. Collect data on local business conditions
9. Use their staffs of professional economists to research topics related to the conduct of monetary policy.

All state banks, national banks, private banks, and many other types of financial institution are required to be licensed by the Central Bank or its regulatory apparatus in some shape or form. In Ireland, the Central Bank of Ireland handles the regulation of monetary policy in Ireland under the aegis of the European Central Bank, established in 1999 under the Maastricht Treaty.

All central banks claim some form of independence from political control or regulatory capture. The ECB is fiercely independent, much more so than the Federal Reserve. The idea behind political independence is to stop political influence from unduly corrupting the design and of monetary policy.

The European System of Central Banks (ESCB) is composed of the European Central Bank (ECB) and the national central banks (NCBs) of all EU member states. A different name, the 'Eurosystem' is the term used to refer to the ECB and NCBs of the countries that have adopted the euro. The NCBs of member states that do not participate in the euro area are members of the ESCB with a special status since they do not take part in decision-making with regard to the single monetary policy for the euro area.

The Governing Council is the main decision-making body of the Eurosystem, formulating monetary policies, taking decisions on interest rates, reserve requirements and the amount of liquidity in the system. The Governing Council is composed of the Executive Board and the governors of the NCBs of the euro area member states. The Executive Board has 6 members (a president, vice-president and four other members).

The main tasks of the Eurosystem set out in Article 105 of the EC Treaty are:

1. To maintain price stability. According to the EC Treaty, this is to be the ‘primary objective’. The ECB has adopted two policy guides to carry out this task: a reference value for monetary policy and an inflation target of 2 per cent or less over the medium term.
2. To support the general economic policies in the Community. This is a secondary function, only to be carried out without prejudice to price stability.
3. To define and implement the monetary policy of the Community. The Governing Council of the ECB was to set interest rates but not decide them unilaterally. The ECB would not normally engage in market operations, and the ESCB would be responsible for implementing monetary policy.
4. To conduct foreign exchange operations. Decisions with regard to the exchange rate are to be taken by Ecofin but subject to consultation with the ECB, the European Parliament and the Commission in order to ensure accountability.
5. To hold and manage the official foreign reserves of the member states.
6. To promote the smooth operation of payments systems’ (which included the introduction of a euro-payments mechanism called TARGET).
7. To contribute to ‘the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions, and the stability of the financial systems. However, the ECB is not to be responsible for supervision of banks and financial institutions.

Like the US Fed and the Central Bank of Japan, the Eurosystem rejected explicit inflation targeting. This was probably because it had adopted the money rule strategy of the Bundesbank, though in practice the Bundesbank had effectively abandoned this strategy since the mid 1990s., but also to avoid the impression that the ECB acts mechanically. However, in practice the ECB has become what Burda and Wyplosz (1997) terms a ‘closet’ inflation targeter.

In 2003 the strategy of the Eurosystem was reformed with the order of the two pillars being swapped and their names changed. The Eurosystem also renounced its practice of reviewing its rules for monetary growth each year. The new pillars became: Economic analysis aimed at the short to medium run and including everything (such as growth, employment, prices, exchange rates and foreign conditions) apart from monetary aggregates, and Monetary analysis aimed at the medium to longer term and relying on monetary aggregates, in particular, M3.28.

Like most other modern central banks the ECB implements this strategy essentially by the setting of one policy rate of interest, the ‘Main Refinancing Rate’, using the instruments of open market operations, standing facilities (credit lines) and minimum reserve requirements. If the money supply were fixed, then the determination of money demand by the central bank would depend simply on the choice of interest rate, as figure 2 shows.

The division of responsibility between the ECB, Ecofin, the Eurogroup and national governments is complex. The ECB is to define and implement monetary policy and hold foreign reserves. However, decisions with regard to the exchange rate are to be taken by Ecofin, but subject to consultation with the ECB, the European Parliament and the Commission (despite the fact that the preference seem to have been for a policy of *benign neglect* (Burda and Wyplosz, 1997)). National governments are to conduct fiscal policy, though, as discussed below, subject to the constraints of the Stability and Growth Pact.

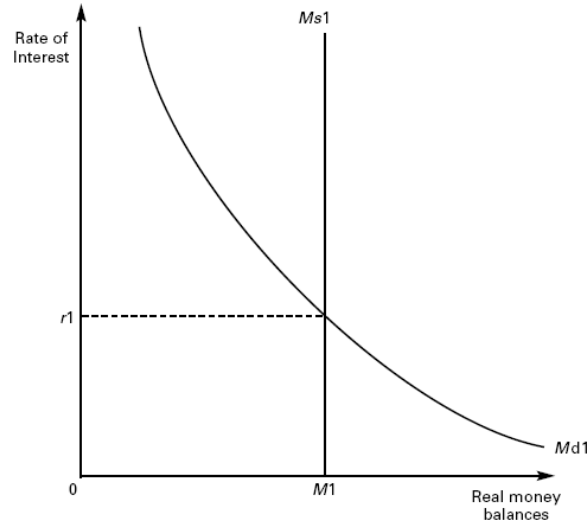


Figure 4.6 The supply and demand for money

Figure 2: Simple domestic demand and supply of money with a fixed money supply.

Exercise 1 (ECB Functions) Obtain the founding documents of the ECB from www.ecb.int, and documents on current economic and monetary affairs from www.europa.eu.int/pol/emu. Describe the main features of EMU as set out in the Maastricht Treaty. What was the aim of that treaty, and, in your opinion, what are the chief functions of the European Central Bank, and what criticisms can be made of its operation during the current crisis?

2.2 How is money supplied by Central Banks?

Figure 3 above contains the structure of the central banking system. The money supply process has four types of actors. The central bank, in idealised form, is the ‘creator’ of money. Banks are here idealised as simply financial intermediaries that accept deposits from individuals and institutions and make loans. Depositors are individuals and institutions that hold deposits in banks. Borrowers are individuals and institutions that borrow from the depository institutions and institutions that issue bonds that are purchased by the depository institutions.

Assets (Uses of Funds)	Liabilities (Sources of Funds)
Govt. Securities	Currency in Circulation
Discount Loans	Reserves

Table 1: Central Bank’s Balance Sheets

Table 2.2 shows the basic balance sheet of any central bank. The central bank issues currency in circulation, and controls the reserves of other banks. The central bank also issues government securities (T-bills, etc), and provides discount loans to banks. The interest rate charged on these loans is the discount rate.

The central controls the level of money in the economy by manipulating the monetary base,

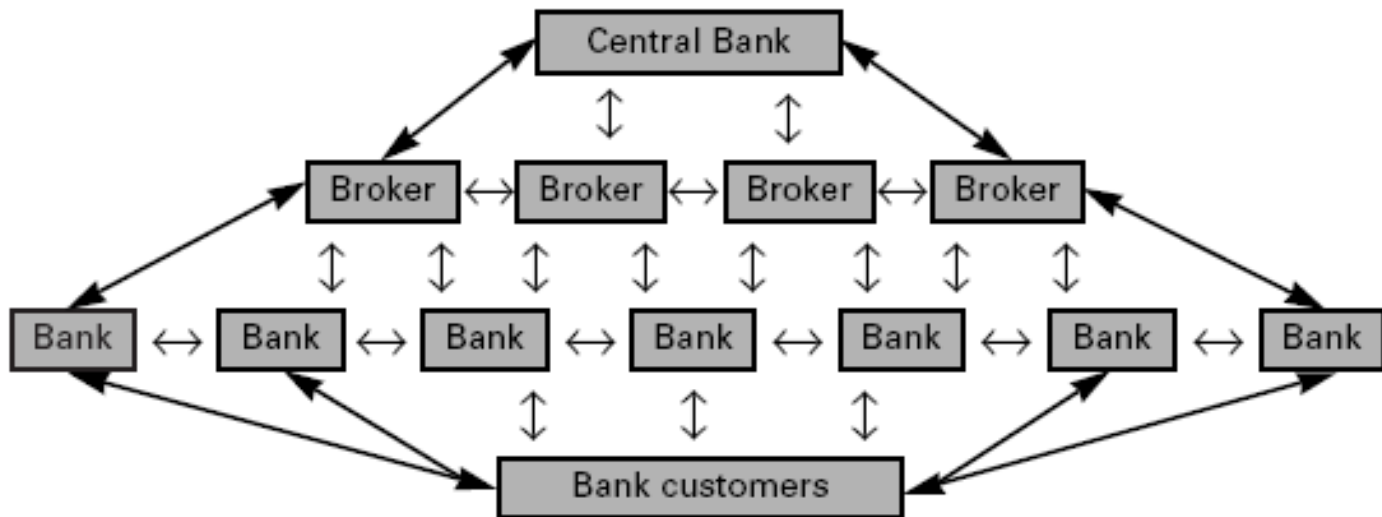


Figure 3: Structure of Central Bank's Operations.

MB which is the level of currency in circulation, C , plus the total reserves in the banking system, R . The Federal reserve, for example, directly manipulates the relationship

$$MB = C + R \tag{1}$$

via open market operations.

3 Open Market Operations

Optimization works in theory but risk management is better in practice. There is no scientific way to compute an optimal path for monetary policy.

–Alan Greenspan, Financial Times, 27-28 August 2005

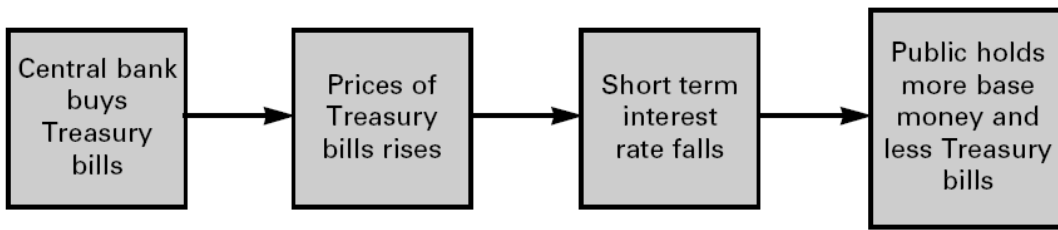
Central banks implement monetary policy via open market operations. The bank can either change the discount rate for loans to banks, or issue/recall bonds from circulation.

The causality is pretty simple, and we'll go through it in lectures.

Figure 5 shows an expansionary open market operation.

Exercise 2 (Contractionary Open Market Operation) *Show graphically the effects on the money supply $M1$ of a large central bank sale of treasury bills.*

An Expansionary OMO



A Contractionary OMO

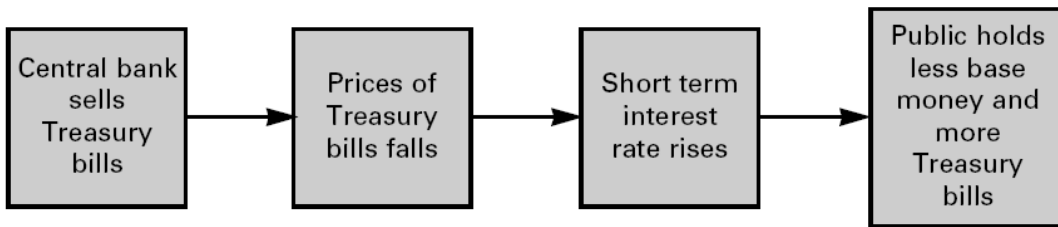


Figure 4: Causal structure of open market operations.

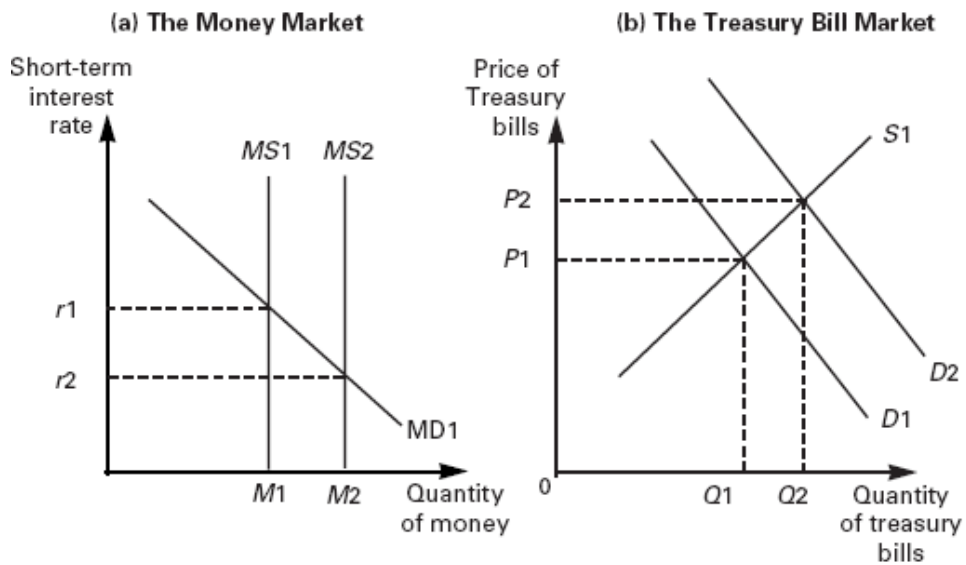


Figure 5: An expansionary open market operation.

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