

The modern central bank's mandate and the discussion following the financial crisis

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Wars and crises have throughout history acted as catalysts for development. This also applies to the mandate of central banks and the most recent financial crisis of 2007-2009 was no exception. In this article we try to provide an overall view of, first and foremost, the academic discussion on the central bank mandate and also other current issues regarding central bank activities now and in the future. As a basis we review the way the central bank's mandate has developed over time, what can be considered the fundamental tasks of the central bank and which trade-offs are required for the central bank's various tasks and objectives.

We can see that there has been a shift in the mandates that different governments have chosen to bestow on their central banks over time, and also in which tasks the legislature and the central bank have chosen to emphasise. On some occasions, the task of funding the government's war has been the most important one, on other occasions the focus has been on price stability to keep inflation in check. Sometimes society has needed a central bank with a broad mandate that can supply most of the services needed in a payment system, while at other times there has rather been a need to provide stability to a payment system with many private actors.

Since the most recent crisis broke out, there has been lively discussion of central bank mandates with several opposing points of view. This has concerned carefully weighing up the central bank's fundamental tasks, such as the need to lend money to payment system participants during a crisis without increasing the risk of moral hazard. There has also been discussion of extending central bank tasks beyond their fundamental activities, and in particular the responsibility for macroprudential policy and supervision of banks and other financial institutions, what is known as microprudential supervision.

The final section of the article presents a number of issues regarding central bank tasks that will probably require more detailed discussion in the coming years.

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1. The history of the central bank mandate

The development into today's modern central banks is often regarded as an evolutionary process when described in the academic literature. This is because central banks mandates in different countries have shifted over time depending on local circumstances and conditions. Central banks are constantly facing new challenges and problems to resolve, and therefore there is no definitive formula as to how they should be shaped over time. On the other hand, historical experiences can provide some guidance as to what have been the central banks' most important tasks.

PRECURSORS TO THE MODERN CENTRAL BANKS

The underlying driving force behind initiating and encouraging the establishment of central banks was essentially the same for all: a wish to introduce a new, reliable means of payment. Both the general public and governments have long needed institutions that take responsibility for certain functions that are currently regarded as defining a modern central bank.¹ The need to make reliable payments with a common means of payment in a joint system was a driving force behind developments. Governments therefore began to either give state-owned or private institutions the privilege of issuing means of payment in the domestic currency and of mediating payments. In this way, they hoped to reduce the disorder that arises when different participants in one country issue means of payment separately in their own units. These institutions were precursors to today's central banks and their objective was largely to maintain the value of the means of payment. The core of modern central banking activities can be traced back to providing stable means of payment, which was first done by state-owned or private banks, something that Ugolini (2011) also emphasises. This concerned both banks which mediated payments and were funded solely through deposits (giro banks) and privately-owned banks which issued banknotes. When they lacked capital, the giro banks were often owned and backed by the state. The privately-owned banks that issued banknotes obtained funding through a combination of equity capital and deposits.

FACT BOX:

The first bank to issue banknotes, Stockholms Banco and how Sveriges Riksbank was established

The first bank in the world to issue banknotes was Stockholms Banco, which was founded when Johan Palmstruch was awarded the privilege of running a bank by King Karl X in the year 1656. Stockholms Banco originally functioned as a deposit bank, where the general public could deposit their means of payment, which included unwieldy copper plates, for a fee. The depositors received

¹ See, for example, Ugolini (2011), Capie et al. (2012) and Roberds and Velde (2014a and b).

a receipt of their deposit, which gave them the right to redeem their claim at the bank and receive the funds they had deposited in the form of copper coins. When the bank expanded its balance sheet by beginning to grant credit, it also began to issue banknotes. The banknotes were not linked to any specific deposit amount but instead issued against the bank's entire balance sheet. However, the banknotes gave the bearer the right to redeem them against a certain amount of copper coins. The banknotes became very popular as they were much easier to manage than the unwieldy copper plates. When the government reduced the amount of copper in the coins, the general public began to be suspicious of the banknotes. This suspicion led to people wanting to redeem their banknotes quickly to get back the copper plates they had originally deposited there instead of copper coins with a lower copper content. This led to a bank run, which forced the bank to close in 1664. In 1668, the Riksbens ständers bank was established instead (which was later renamed Sveriges Riksbank). This bank was owned by the Riksdag (parliament). However, issuing banknotes had been forbidden in 1664, as this was considered to have caused the fall of Stockholms Banco. The Riksbank did not begin issuing banknotes again until 1745. As the Riksbank was under the control of the Riksdag, it was independent of the king. For instance, the Riksdag opposed the Riksbank taking on loans to finance the state's wars. King Gustav III therefore founded the Swedish National Debt Office in 1789, which was given the task of taking out loans on behalf of the state to finance the national budget, and also to provide loans.²

MODERN CENTRAL BANKS

An established view of central banks used as a base by, for instance, Capie et al. (2012) and Green (2003) is that an institution is defined as a modern central bank if it is

- the state bank,
- holder of the monopoly on issuing means of payment in the domestic currency and
- lender of last resort.

Being the state bank usually means that the central bank takes care of the state's transfers, borrows funds for the state budget and administers the national debt. Being lender of last resort means that the central bank should be prepared to lend money to banks and other agents in the payment system to alleviate or avoid a systemic crisis. The basis for this task is the central bank's ability to create means of payment in the form of physical money and holdings in accounts in the domestic currency. Using these criteria, the Bank of England is regarded as the first modern central bank. It had actually been founded back in 1694 with a monopoly on issuing means of payment in England and Wales and with the task of managing the national debt.³ However, the Bank of England did not take the form of a modern central bank until new legislation in 1844 extended its banknote monopoly to

² See Wetterberg (2009).

³ See Lees and Footman (2014).

cover the whole of Britain and in 1870 the Bank of England took on responsibility for the stability of the British banking system. The world's oldest still existing central bank, Sveriges Riksbank, would not qualify as a modern central bank according to the criteria above, as it is not the state's bank. While it did have the task of acting as the state's internal bank until 1989, this task was taken over by the Swedish National Debt Office, which has had the task of managing the Swedish national debt since it was established in 1789.

Ugolini (2011) concurs with the view that central banks are defined by the functions they maintain, but notes that modern central banks have two main tasks, namely to ensure financial stability and monetary stability. Financial stability means here supplying stable payment systems, being the ultimate guarantor that the payment system has sufficient means of payment for its function (lender of last resort⁴), and exercising supervision over the banks. Monetary stability means, according to Ugolini, conducting monetary policy and supplying means of payment in the domestic currency. There are clearly some differences between Ugolini's definition of a modern central bank and the one used by Capie et al. In practice, central banks are not necessarily the state's bank and do not necessarily conduct supervision of the banking system.⁵ The role of lender of last resort, on the other hand, is essential to the central bank.

But there are also those who say that central banks are not needed, and particularly not in the role as lender of last resort. De Soto (2009) describes the discussion between advocates of central banks and advocates of an entirely free and deregulated banking system that is usually referred to as *free banking*. The free banking advocates say that the actual existence of central banks and their role as ultimate guarantor of the payment system aggravates banking crises and economic downturn. They say that the state has established central banks mainly as a result of pressure from special interests, especially private banks, who have regarded it as necessary for the central bank to go in and guarantee the stability of their operations during crises. According to this point of view, the commercial banks become less responsible and bank customers less inclined to choose stable banks over more risky ones when both the banks and the general public can rely on the central bank intervening and providing support to banks in crisis. The free banking advocates say that private banks can establish their own clearing houses where the banks can oversee one another through a transparent clearing procedure.⁶ Historically, commercial banks in many regions have had the aim of managing this on their own. But experiences have shown that the banks found it difficult to maintain sufficient capacity

4 The definition of the concept of lender of last resort differs slightly in the academic literature; see for instance Bordo (2014), Lacker (2014) and Tucker (2014).

5 One example of this is Sveriges Riksbank, which neither conducts supervision of the banks nor acts as the state's bank.

6 Clearing activities here means formally registering and reporting payments between the banks. De Soto (2009) says that the root of the problem is that the banks conduct lending that is only partly backed by reserves in the form of deposits (fractional banking, see the box on commercial bank money in section 3 below). Although he agrees with the view that central banks are not needed, he considers that credit granting by private banks shall be separated from deposits. Deposit operations should be conducted by special deposit banks that receive the deposits and back them with 100 per cent reserves in the form of generally-accepted goods/metals. Credit granting should be conducted by other banks, which are funded in other ways than through deposits.

and to coordinate lending to competing banks. Instead, there was a development towards refining the allocation of roles between commercial banks and central banks. Capie et al. (2012) claims that the commercial banks preferred that the central banks were responsible for supplying payment systems and acting as central counterparty in clearing the banks' payments between one another in exchange for the central banks ceasing activities that competed with the commercial banks, such as supplying credit. The US central bank, or rather the system of twelve federal central banks—the Federal Reserve System—was established in 1913 after the commercial banks had failed to mediate payments between themselves in a stable and reliable manner and to coordinate financial support to banks in crisis. Instead, the central bank was forced to intervene and bring order into the payment system and function as central counterparty in clearing interbank payments in a joint currency at the terms set by the central bank.

Some countries lacked a developed banking sector for a long time. Instead, informal financial sectors supplied financial services and credit. In Sweden, for instance, the informal financial sector consisted of trading firms and wholesalers, in addition to a few banks, up until the 19th century. Establishing a public bank was then a way for the state to establish a financial infrastructure that enabled credit granting to the general public.⁷

FROM THE GOLD STANDARD TO INFLATION TARGETING

During the second half of the 19th century and the start of the 20th century, the gold standard functioned as an international exchange rate regime in most western countries. It established a single, overall objective for the central banks in these countries, namely to maintain the convertibility of the means of payment into gold and its value in relation to other currencies on the foreign exchange market. The system was based on the Bank of England guaranteeing that the British pound could be redeemed for a certain amount of gold and on other central banks pegging their currencies to the British pound. When the First World War broke out, the gold standard ceased to apply, but it was reintroduced in many countries between 1920 and 1930. The losers of the First World War, that is, Austria, Hungary and Germany, were encumbered with large reparation payments that were funded through the banknote printing presses. This resulted in hyperinflation. The hyperinflation only came to an end when the states established independent central banks with legally-sanctioned resilience to refuse the government's demand for credit without collateral and implemented radical changes in fiscal policy.

When economic activity declined and the US stock market crashed in 1929, protectionism ensued and world trade collapsed. This, combined with the large war debts, led to the banking systems in Germany, Austria and Hungary collapsing. High interest

⁷ In Sweden, the establishment of Sveriges Riksbank in 1668 enabled deposits from and credit granting to the general public, as there was previously no banking sector. This was also the case in Norway, where Norges Bank was established in 1816; see Haldane and Qvigstad (2014). The central banks in the Scandinavian countries supplied financial services in the absence of a fully-fledged banking sector, but also functioned as a foundation for a private banking and financial sector to begin developing.

rates to maintain the currency's convertibility into gold at the same time as unemployment was increasing made it impossible to uphold the fixed exchange rate regime comprised by the gold standard in the long run. The United Kingdom, like Sweden, abandoned the gold standard in September 1931 and let its exchange rate float. The Swedish government instead declared a new monetary policy programme to uphold the value of the Swedish krona. This meant that during the period 1931 to 1937 the Riksbank had the stabilisation of domestic prices as the objective of its monetary policy. In 1937, the Riksbank, in addition to the primary target to preserve a stable price level, was given other goals like aiming for full employment.⁸ The government also emphasised the importance of the Riksbank choosing monetary policy measures in consultation with the government, that is, coordinating its monetary policy with fiscal policy.⁹ Sweden was thus a relative pioneer on the road later followed by most countries after the Second World War, when Keynesianism made an impact. Stabilisation policy and more government regulation of both the real and the financial sectors, including control of international capital flows, meant that the central banks came to be increasingly regarded as public authorities accountable to the governments and having the purpose of attaining the objectives of the general stabilisation policy. In connection with this, many of the central banks that had until then been privately-owned were nationalised.

As a step in restoring confidence in the international financial system, the fixed exchange system known as "Bretton Woods" was established in 1944. At the same time, the International Monetary Fund (IMF) and the World Bank were established. The IMF was given the task of overseeing the new exchange rate cooperation. The Bretton Woods system entailed the member states tying their exchange rates to the US dollar. In return, the United States guaranteed a fixed redemption price for the US dollar in gold. The convertibility of the individual member states' currencies into gold was thus formally maintained until the Bretton Woods system collapsed in 1971. Then, the United States was no longer able to maintain a fixed redemption price for gold. Following this came a period when the currencies of the larger economies floated against one another and the central banks in, for instance, Germany, the United States, Switzerland, Canada and the United Kingdom introduced monetary targeting. Monetary targeting entailed the central banks using targets for growth in the money supply to try to control inflation. However, this policy was abandoned in the mid-1980s after it was proved to be inefficient. Instead, an increasing number of countries returned to stabilising exchange rates. The overall purpose of the exchange rate regime was that the central banks would support the stabilisation policy and at the same time maintain price stability. With mixed experiences from monetary targeting and fixed exchange-rate regimes, some countries with open economies began to introduce inflation targets combined with floating exchange rates. New Zealand was the first to do so in 1990. Canada followed suit in 1991. The United Kingdom and Sweden introduced inflation targets in 1992 and 1993 respectively. Today, the central banks in more than 30 countries use some form of inflation

8 Berg and Jonung (1999) give a detailed description of this monetary policy regime.

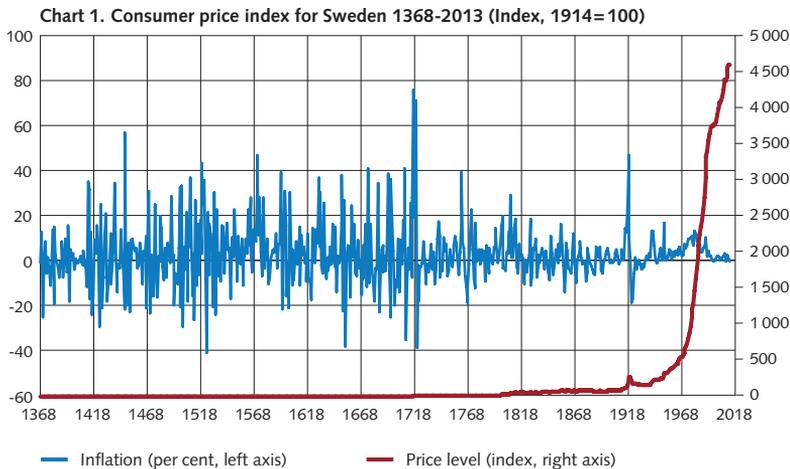
9 See Berg and Jonung (1999).

targeting.¹⁰ The independence of the central banks has been reinforced to increase the credibility of the inflation-targeting policy.

Parallel with several countries introducing inflation targeting, the fixed exchange-rate collaboration within the EU developed further. On New Year's Day 1999, eleven EU member states adopted the euro as their joint currency. Today, 19 member states within the EU have the euro as joint currency. The European Central Bank (ECB) also conducts monetary policy with a numerical anchor for inflation in the euro area as a whole.

To summarise, we can conclude that central banks' tasks have varied over time and from one country to another. The common base for most of the tasks allocated to central banks over time is their capacity to act as lender of last resort in their own currency.

Chart 1 shows the development of consumer prices in Sweden for the years 1368 to 2013, both in terms of price level and as an annual inflation rate. The chart shows that the general public experienced major fluctuations over time in the purchasing power of the means of payment. High inflation in one year could become strong deflation in the next. This went on until 1931, when Sweden introduced a price stability target. After that, inflation stabilised and it was possible to avoid periods of strong deflation. However, one period that stands out is the 1970s, when recurring supply shocks and expansionary economic policy led to prices soaring dramatically. It is also worth noting that the development with periods of strong inflation that rapidly changed into strong deflation did not change when the Riksbank was established in 1668.



Sources: Edvinsson and Söderberg (2010) and Sveriges Riksbank

¹⁰ See Berg (2012) who discusses among other things the development of institutional frameworks for monetary policy and financial crises from a global perspective.

2. The central bank's mandate and tasks

This section moves on from the historical description to discussion of the principles regarding the mandate and tasks that are the most important for a modern central bank, that is, its fundamental tasks. We discuss whether there are any general criteria for what should comprise a central bank task. The purpose is to provide a basic understanding and make it easier to follow the discussion of trade-offs between different tasks in section 3 and the discussion of an extended mandate in section 4.

THE MANDATE AND TASKS OF CENTRAL BANKS ARE DETERMINED BY THE NEEDS OF SOCIETY

One means of approaching the question of what mandate the central bank should have is to begin with society's need for a generally-accepted means of payment, that this means of payment maintains a stable value over time and that there is a stable and efficient infrastructure for payments, that is, the need for a functioning payment system. A system is also needed to transform savings into loans and investment.

The next question is to what extent the state should be responsible for these tasks. Green (2003) suggests that the first question to ask is whether there is a *market failure* that needs to be remedied with regard to payments and loans, that is, a reason why the state should regulate in this area at all. Economists often use a simplified conceptual model, where first and foremost private markets should meet the needs of society. The state should only intervene when the market has failed or is expected to fail in meeting these needs in a satisfactory manner. Such a market failure could be, for instance, that individual market participants do not take into account the risks that their actions cause for the financial market as a whole. In these cases it may be justified to have some form of supervision, regulation or other intervention by the state. The state can then give a central bank the task of managing this. At the same time, it is important that the public authorities' regulation does not become a greater problem for society than the market failure the state is trying to remedy. Trade-offs must thus be made between, for instance, a safe and an efficient payment system, or to put it differently, between a high level of financial stability and a high level of economic growth.¹¹ One can attain a completely safe and stable payment system through regulation, but then it will be at the cost of low socio-economic efficiency. Several developed countries—including Sweden—underwent a period of extensive regulation of the credit market from the Second World War until the mid-1980s and many say this entailed over-regulation. On the other hand, unregulated financial markets can lead to rapid economic growth at the cost of major risk of financial instability, which could have very negative effects on growth if they were to materialise.

¹¹ Or as British Chancellor of the Exchequer George Osborne put it: "We don't want the stability of the graveyard", see The Telegraph, 15 November 2011.

As we saw in the previous section on the history of the central bank, the functions of a central bank can differ from one society to another, for instance, because of different stages of development and different political environments.

THE INDEPENDENCE OF THE CENTRAL BANK

Central banks have often been established at the initiative of the state.¹² This means that throughout the entire history of central banks there has been an inherent tension between on the one hand the independence of the central bank and its endeavour to maintain the value of the means of payment, and on the other hand the central bank's function as bank to the state. States have often been tempted to use the central bank's monopoly on creating money to fund their activities, which increases the risk of inflation and undermines the value of money. To ensure that the general public has confidence in the central bank's ability to maintain price stability and a payment system that is safe and efficient in other respects, too, it is important that the central bank is not steered by other and more short-term goals, but that it can manage its tasks with a large degree of independence from the state. However, this does not mean that the central bank must be entirely independent. The level of independence depends on how much benefit society wishes to obtain from the advantages of an independent central bank. This must at the same time be weighed against society's need to control the central bank and for accountability to ensure that it really aims to meet the needs of society.

FACT BOX:

Independence of central banks

In a democratic society, sometimes elected representative's powers are restricted in favor of longer term goals. For instance, courts are often given some independence in exchange for providing legal certainty and universities are given autonomy in exchange for independent research. In both cases there are long-term objectives with a balanced development over time. The independence of the central bank has the same foundation. When a society gives a central bank a high degree of independence, the motive has often been the objective of price stability.¹³ A central bank shall thus have a sufficient degree of independence to be able to make decisions for long-term monetary policy objectives, even when such decisions have short-term negative effects on the economic conditions for households and companies. If the independence is enshrined in the constitution, it is a further guarantee of decisions on long-term objectives compared with the current government being able to change regulations at relatively short notice.¹⁴ Economic studies of central bank independence focus mostly on the institutional framework for a central bank and they usually divide

¹² Capie et al. (2012).

¹³ See, for instance, Blinder (2010), p.6.

¹⁴ Koshie (2013), p. 38.

the regulated independence into four parts: institutional, functional, organisational and financial, see for instance Amtenbrink (1999).

The discussions on the degree of independence often mainly focus on institutional independence and functional independence.¹⁵ **Institutional independence** is often also called goal independence and refers to the central bank's capacity to determine its own objectives without direct influence from the political system. **Functional independence** is often called instrument independence and refers to the central bank's capacity to determine how its tools shall be used to best attain its objectives.

Organisational independence refers both to how the central bank is organised and what conditions exist to appoint and remove the central bank management. This also includes how independent the central bank is of instructions from, primarily, the government. If the central bank governors can be removed on political grounds or because of the work the central bank has done, the central bank cannot be considered to have a high degree of independence. If a central bank is to have a high degree of independence, members of its governing body should only be removed if they are guilty of serious professional misconduct (Amtenbrink, 1999, p. 20) and not due to poor performance. If one could remove the governing body on these grounds, it would open the way for arbitrary political interpretations.¹⁶ The length of the period of office is also important. It should be longer than parliament's period of office and should not expire at the same time as a change in government may occur if the degree of independence is to be regarded as high. In general, the central bank is considered to have a higher degree of independence the longer the term of office for the governing body.

Finally, **financial independence** concerns the role the government or parliament plays with regard to the budget of the central bank. If the government has influence over the central bank's budget, this may make the central bank more vulnerable to influence in its monetary policy decisions. A closely-related question is the central bank's allocation of profits and to what extent and in what way the government or parliament can make demands regarding this. Most central banks regularly pay part of their profits into the state treasury.¹⁷

THE CENTRAL BANK'S FUNDAMENTAL TASKS

Providing means of payment both in physical form and as holdings in accounts in the country's own currency is the task usually considered fundamental for a central bank.¹⁸ Being responsible for the supply of means of payment in the payment system is a basis for the central bank's other tasks, everything from financial stability and oversight of the payment system to monetary policy. Another important task for the central bank is to maintain the value of money stable over time.

¹⁵ Walsh (2005).

¹⁶ The Governor of the Reserve Bank of New Zealand can be removed if the inflation target is not attained, but such rules are very unusual, according to the Bank for International Settlement (2009, p.74).

¹⁷ Stella and Lönnberg (2008).

¹⁸ See, for instance, Goodhart (2010) and Blinder (2010).

Money in its various forms is the most liquid means of payment, that is, the easiest to buy and sell, as it can be used in most transactions.¹⁹

One type of physical means of payment is banknotes and coins. Central banks usually have the monopoly on producing banknotes and coins and these have a special status, through legislation, as the country's legal tender. This need not mean that banknotes and coins issued by the central bank are the only means of payment that can be used in a country. But the main rule is that the status of *legal tender* means that one can make purchases and pay debts with them.²⁰ Purchasing power – the real value of money – is governed by inflation, that is, how the prices of goods and services in terms of the means of payment develop. It is usually only physical money that has the status of legal tender. Money that only exists in digital form does not normally receive this. Such money is known as *book-entry money* and can consist, for instance, of money in deposit accounts with banks and be used for payments through various digital forms of payment.

FACT BOX:

Outside money and inside money

According to the standard description of different measures of the money supply in economic textbooks, a distinction is made between central bank money (outside money) and commercial bank money (inside money).

Outside money consists of banknotes and coins and commercial banks' money that is held in accounts with the central banks. The commercial banks have money in accounts with the central bank when they voluntarily or because of mandatory rules are forced to hold reserves to be able to manage changes in the amount of payments made by the general public via the banks. In times of crisis, the central bank may need to increase the amount of outside money in the system more quickly by lending money to the banks against collateral.

Inside money is money that has been deposited with the commercial banks by the general public. However, the deposits from the general public are only covered to a relatively small extent by reserves in the form of cash and deposits with the central bank (that is, claims on the central bank). Instead, the collateral for deposits from the general public is comprised of the claims the commercial banks create by granting credit to the general public. The phenomenon whereby banks only invest a small fraction of their deposits in the form of reserves such as cash or deposits with the central bank is known as *fractional banking*.²¹ It is this relationship between short-term debts to depositors and other financiers, and long-term lending to the general public that makes the banks sensitive to potential *bank runs*, that is, if many depositors suddenly wanted to withdraw

19 However, this does not mean it is the only form. Government securities with various maturities can also be a form of collateral much in demand in transactions on the financial markets, particularly in times of crisis.

20 See Verständig (2013).

21 Fractional banking means that the banks hold easily-convertible reserves such as cash and other safe assets comprising only a small part—a fraction—of their liquid deposits and able to be withdrawn immediately by depositors.

their money at the same time. Stabilising a banking system comprised of fractional banking requires that the central bank is prepared to provide emergency liquidity assistance on the basis of its task as lender of last resort. Deposit guarantees for bank customers that protect their deposits if the bank should fail, demands regarding the size of the banks' equity capital and liquid assets and monitoring the banks' risk-taking are other essential elements to gain stability.

Providing means of payment is thus something that can be said to define a central bank. If the central bank has such overall responsibility for society's need of means of payment, which specific tasks should it reasonably have responsibility for? The answer to this question could be that the tasks that can show the strongest link to this responsibility comprise the central bank's fundamental tasks. These include both *financial stability* and *monetary policy*.

FINANCIAL STABILITY

A smoothly-functioning economy requires not only that there is a means of payment, but also that there is a stable and efficient infrastructure to make payments, that is a *payment system*. There is also a need for a credit system that converts savings to investment, and a system for risk management, whereby those who want to can waive risk and pass it on to those who have the capacity and willingness to take on risk. A stable and efficient payment and credit system requires, in brief, that the financial system as a whole has the ability to maintain a number of fundamental functions. Maintaining the fundamental financial functions can be expressed as an objective for *financial stability*.²²

One main reason for creating a central bank is to ensure there is an efficient payment system.²³ One can regard it as the central bank's responsibility to create means of payment also assumes that these can be put into the financial system. It is then logical to give the central bank the task of also safeguarding the infrastructure for the payment system.

Giving the central bank special responsibility for overseeing at least the central parts of the payment system thus appears natural. This includes a central payment and settlement system, that is, the final regulations of payments between the banks with funds held in accounts. Such a system is aimed at agents who mediate the payments that arise from the

22 See, for instance, Sveriges Riksbank (2013) for a more detailed discussion of the central bank's responsibility for financial stability. The majority of central banks consider that they have responsibility for financial stability. However, far from all of them have descriptions of objectives in their legislation that mention financial stability and of the 146 central banks studied by the Bank for International Settlements (2009, pp. 25 and 30), fewer than one-fifth have an explicit objective of financial stability. Central banks often have other ways of describing their mandate instead of using the concept of financial stability as such, which could be partly because the concept is relatively new. Another reason could be that there has not been any individual, generally-accepted or generally-used definition of financial stability either in academic research, in the factual debate or among legislators. See Issing (2003), Oosterloo and de Haan (2003), Schinasi (2004) and Allen and Wood (2006). Many central banks nevertheless take financial stability into account to some extent in their monetary policy framework; see Billi and Vredin (2014), p. 2.

23 See, for instance, Santomero, Viotti and Vredin (2000), p. 3.

general public's financial transactions. It is thus the banks and not individual people who are members of the central payment and clearing system.

In the event of shocks or crises in the financial system, the task of the central bank to supply means of payment and to support the payment and credit system becomes particularly important. The central bank may be forced to act as lender of last resort to safeguard the stability of the system. On the basis of this responsibility, it is natural that the central bank should also oversee the system. Depending on the implementation of its responsibility as lender of last resort, ensuring that the payment system has means of payment, the central bank may, for instance, also need to counteract the agents in the system taking too many risks when they know they are guaranteed support from the central bank in the event of a crisis (what is known as moral hazard behaviour).

There are other tasks aimed at safeguarding financial stability, but which it is more difficult to determine whether or not should be regarded as part of the central bank's fundamental tasks. For instance, the responsibility for supervision of individual financial institutions – microprudential supervision – and the responsibility for ensuring the financial system as a whole is robust (what is known as macroprudential policy²⁴) are in some countries given to central banks and in others to separate financial supervisory authorities. Following the most recent crisis, new tools for macroprudential policy have been proposed, which has also led to a discussion of the advantages and disadvantages of giving responsibility for them to the central bank. We will return to this in section 4.

MONETARY POLICY AND PRICE STABILITY

Maintaining the value of the means of payment is at least as important as ensuring that the infrastructure for the payment and credit system functions. It is important for a society that the means of payment, regardless of whether this is physical or virtual currency, has a lasting value over time. Otherwise, the general public's confidence in the means of payment will be undermined. The principles for stabilising the value of the means of payment have varied over time, as described in the historical account in section 1. In a fixed exchange rate regime it is a case of maintaining the value of the domestic currency in relation to foreign currencies. With a floating exchange rate it is now most common for the central bank to steer the value of the domestic currency on the basis of a particular target regarding changes in value of the domestic currency in relation to price developments on domestically-sold goods and services.

In the latter case, the central bank has the preferential right of interpreting price developments on goods and services sold and on the basis of this determining the interest rate the central bank sets on loans to (or deposits from) the banks. As the central bank has the task of issuing money and overseeing the payment system infrastructure—which

24 The difference between microprudential and macroprudential policy is defined according to Finansinspektionen, the Swedish financial supervisory authority, on the basis of what initiates the supervisory activity—whether it is a company-specific circumstance or a general market/macroeconomic circumstance, see Finansinspektionen (2013).

is a necessary condition for steering the access to means of payment and its value—it is reasonable that the central bank should also be responsible for the country's monetary policy.

Most central bank laws that have been instituted in the past hundred years have price stability as the primary objective of monetary policy.²⁵ Although not all countries use the same definitions of monetary policy and price stability, there are more similarities than differences. There is almost unanimity on the importance of the central bank having price stability as the objective for its monetary policy.

The monetary policy tool or instrument familiar to most of society is what is known as the policy rate. This is the rate that forms the basis for the interest rates central banks' monetary policy counterparties either pay to borrow money from the central bank or receive when they deposit money with the central bank. Other means of steering access to money and interest rates in the economy can be quantitative instruments such as open market operations, that is, buying or selling various securities. Reserve requirements, that is, when banks are obliged to deposit money with the central bank at zero or very low interest rates, are also a common monetary policy instrument. The central bank's open market operations allow the banks to exchange their collateral, such as government securities or covered bonds, for means of payment in the form of book-entry money. In the event of shocks and financial crises in the payment and credit system, it becomes clear that such measures are also very important for financial stability.²⁶ This is one of the ways in which monetary policy—or price stability—and financial stability are connected.

CRITERIA FOR THE CENTRAL BANK'S RESPONSIBILITY FOR OTHER TASKS AND INSTRUMENTS

We have now presented what can be regarded as the central banks' fundamental tasks. Now we shall briefly show how this can be used to discuss whether or not further tasks should be given to the central bank. This reasoning, together with the discussion on conflicts of interests and balances between different central bank tasks in the following section, forms the basis for our review of the discussion of an extended central bank mandate in section 4.

One means of determining whether the central bank should have responsibility for other tasks and tools than those included in the fundamental tasks we have already discussed is to analyse what *advantages* it brings to give the central bank responsibility for further tasks. Which arguments indicate that the central bank, rather than any other institution, should be given responsibility for a specific further task? In addition to identifying these advantages, Blinder (2010) suggests that the legislature should assess the possible *conflicts of interest* that might arise between further tasks and the fundamental tasks, and which authority, given such conflicts, would be best suited to taking care of the necessary trade-

²⁵ Bank for International Settlements (2009) p. 7 and Table 2 p. 30.

²⁶ The Federal Reserve made use of several programmes during the most recent crisis in 2007–10 aimed at stabilising the financial markets, for instance the Federal Reserve Systems Term Auction Facility, Term Lending Credit Facility and Primary Dealer Credit Facility. See, for instance, Weinberg (2013).

offs. The larger the number of tasks, the greater the risk of conflict between the tasks.²⁷ On the other hand, competence becomes narrower and the potential for synergies declines if the mandate is limited. The *way a central bank is governed* may also play a role here. The governance of the central bank is determined on the basis of the bank being able to perform its fundamental tasks and it may either be a help or a hindrance in carrying out further tasks in relation to other institutions. For instance, is the central bank better suited to carrying out a particular task as a result of its large degree of independence? Or, on the contrary, is the task or tool for performing the task closer to fiscal policy or another policy area that is primarily the responsibility of the government? In this case there may be problems of balance in relation to the government tasks, which can in turn affect the independence of the central bank and its credibility. A good example of such an issue is the discussion of whether the tools for macroprudential policy should be given to the central bank or to some other authority.

3. Trade-offs between the central bank's objectives, tasks and tools

The broader the mandate a central bank has, the more often it will be forced to find a balance between different objectives, tasks and tools. It is nevertheless common for central banks to have several economic-policy objectives either subordinate to or in addition to the objectives of price stability and financial stability, such as a high level of employment. These objectives can be clearly stated in governing statutes but they are usually kept more general. How the central bank should weigh the different objectives against one another in the event of a conflict between, for instance, the price stability objective and the objective of economic growth and high employment is a question that is constantly being discussed. There is widespread opinion that a central bank is not able to use monetary policy, for instance its policy rate, to influence either growth or employment other than in the short term.

Central banks with inflation targets in practice conduct *flexible* inflation targeting rather than *strict* inflation targeting.²⁸ Flexible inflation targeting is usually interpreted to mean that monetary policy aims to stabilise both inflation and the real economy, while strict inflation targeting aims only to stabilise inflation without taking into account the stability of the real economy. Stabilising the real economy means stabilising resource utilisation in the economy, even if monetary policy cannot affect the long-term level of production and employment. Temporary deviations from the inflation target can thus be permitted to ensure a stable development in growth and employment. But this is not the same as having,

27 A report by the Bank for International Settlements (2009) concludes that there may be an optimal number of functions per organisation.

28 See, for instance, Rogoff (1985), Fischer (1996), Svensson (1998) and Sveriges Riksbank (2010).

for instance, an own goal for employment. The central bank normally takes into account real economic developments without being tied to attaining any specific goal for them.²⁹

Measures to attain financial stability should also be weighed against undesirable effects on other economic-political goals. A more strictly-regulated financial market could, for instance, have fewer opportunities to contribute to national welfare if the regulations limit the banks' opportunities to provide loans to the general public. This is because such regulation limits one of the financial system's most important tasks, namely converting savings into financing consumption and investment in, for instance, housing and production capacity. It may thus be difficult to attain the highest possible level of financial stability and a high level of socioeconomic efficiency at the same time.

There are also risks to the central bank's independence when it has multiple goals. Having several goals increases the risk that some of the goals will be shared with the government and other parts of society, which makes it more difficult to demand accountability from an individual institution. An extended mandate for the central bank with regard to, for instance, macroprudential supervision can open the door to external influence on the central bank when coordinating with other authorities, which can then gain an influence that might come to affect other parts of operations, such as monetary policy. The reason why coordination may be desirable is the strong link between financial stability and monetary policy. Measures to ensure financial stability could have effects on interest rates in general, on economic activity and on inflation, at the same time as the central bank's interest-rate policy affects financial stability.³⁰ But such coordination could also weaken the central bank's independence and confidence in its monetary policy, see Koshie (2013).

Smets (2013) describes three different views of the relationship between monetary policy and financial stability. He calls them

- “the modified Jackson-Hole consensus”,
- “leaning against the wind vindicated” and
- “financial stability is price stability”.

The first view was generally prevalent during “The Great Moderation”, that is, the period from the mid-1980s until the most recent financial crisis. This period was marked by low inflation and stable growth. The general impression at that time was that the policy rate should be used to attain price stability and to support economic developments, not

²⁹ The Federal Reserve has three targets: maximum employment, price stability and stable long-term interest rates. While the price stability target is set at an inflation rate of 2 per cent, the rate of employment is more difficult to measure against a set target. Instead they publish quarterly reports with forecasts of the levels for growth and unemployment further ahead. They use monetary policy to try to alleviate deviations from the long-term levels of inflation and unemployment. These targets are often complementary, they say. Where this is not the case they apply a balanced strategy to promote both. This balance takes into consideration the scope of the deviation and the forecast for when inflation and/or employment can be expected to return to levels compatible with their mandate. See Federal Reserve (2012).

³⁰ See, for instance, Billi and Vredin (2014), Bryant, Henderson and Becker (2012), Eichengreen et al. (2011), the Swedish Centre for Business and Policy Studies' Economic Policy Group (2012) and the Swedish Fiscal Policy Council's report 2011, chapter 5.

to reduce the risk of an impending financial crisis. If a crisis arose, the central bank and the government could relatively painlessly “mop up” afterwards. This view was based, according to Smets (2013), on the idea that the central bank has a relatively narrow monetary policy mandate with the objectives of price stability and stabilising resource utilisation. According to this view, there are no trade-off problems between monetary policy and financial stability. This is because the central bank’s responsibility for financial stability is considered to be limited solely to measures in the event of a crisis, with the possible exception of so-called moral suasion, that is, gentle influence on the financial markets through speeches and documents with no binding requirements. However, “mopping up” after financial crises has proved costly.

Another view of the central bank’s responsibility is that monetary policy should “lean against the wind”. What this means is that the central bank should in various ways try to dampen or subdue the risk factors it perceives, such as credit bubbles. The argument in favour of leaning against the wind can be partly regarded as a reaction to the central banks’ strong focus on the development of inflation prior to the most recent financial crisis. According to the Bank for International Settlements (2009), the central banks were unwilling to use the policy rate when serious market disruptions arose in the build-up to the financial crisis. This unwillingness was due to the central banks’ fear of the effects of monetary policy tightening on inflation and inflation expectations. However, the crisis has made clear the close links between monetary policy and financial stability, for instance. A monetary policy that focuses on price stability affects financial stability through the value of assets, commodities, credits, capital flows and exchange rates (see, for instance, Eichengreen et al., 2011). It also becomes very clear during a financial crisis that a stable financial system is a necessary condition for being able to conduct an effective monetary policy. The financial markets and the way they function affect the impact that monetary policy has through the interest rates that households and companies have to pay. Moreover, the economic consequences of a financial crisis have a direct impact on price stability, growth and employment. Price stability contributes to financial stability. For the monetary policy transmission mechanism, that is, the way a change in the repo rate affects inflation and the rest of the economy,³¹ to function and be upheld, it is necessary to avoid financial instability (see, for instance, Goodhart and Rochet, 2011). According to, for instance, Eichengreen et al. (2011) the central bank must therefore attain a good balance and optimise the use of various tools with consideration to both price stability and financial stability.

31 The transmission mechanism is in fact not one but several different mechanisms that indicate how changes in the policy rate affect inflation and the rest of the economy. These mechanisms are usually divided into the credit channel, the interest rate channel and the exchange rate channel. The credit channel describes how changes in the policy rate affect demand via banks and other financial institutions. If the policy rate rises, banks choose to reduce their lending and instead invest in other assets, such as bonds. Companies and households find it more difficult to borrow money. Companies reduce their investment and households cut back on their consumption. The stability of the financial system is therefore important for the mechanisms to function and for monetary policy to have an impact. The time aspect is also important: Some of these mechanisms act on inflation fairly quickly, while others take longer to have an effect. It is generally held that a change in the policy rate has its greatest impact on inflation after one to two years.

Something that further complicates the picture is that the time lag between the build-up of systemic risks—for instance, “credit bubbles”—and the development of economic problems is probably longer than the time lag between monetary policy decisions and their effect on inflation.³² If they only regard inflation over a time horizon of two to three years, central banks may not try to dampen emerging financial imbalances that follow longer financial cycles. As price stability and financial stability are so mutually dependent, it has been claimed that monetary policy could also take the financial cycle into account and act against a credit bubble, for instance, even if this meant that both inflation and growth undershot their targets for a period of time. The framework for flexible inflation targeting should be adapted to take into account the risk of shocks to the financial system of the type that arose during the crisis in 2007-2009, says Woodford (2012). The central banks should in this case take financial stability into account in their monetary policy deliberations by making forecasts, in addition to those for inflation and real economic growth, for whether a financial crisis can occur and reacting to the likelihood of this. According to Woodford, it is only in times of significant financial imbalances that the central bank needs to take into account the risk of a financial crisis arising. In normal times, the central bank can restrict itself to the balance between inflation and real economic stability in its monetary policy decisions.

One counter-argument is that such a multi-faceted use of the policy rate, for instance, could jeopardise the central bank’s independence and make its mandate less clear and its independence more difficult to justify. It is difficult to know how great the risk of a future financial crisis is. This means it is also easy to question preventive measures. On the other hand, it has also been claimed that if one limits the central bank’s mandate to only defending the independence of the central bank, it may later undermine its legitimacy (see Eichengreen et al., 2011).

Conflicts may arise between price stability targets and resource utilisation in the short term, and the financial stability objective in the longer term. Such trade-offs become particularly difficult if the central bank only has the policy rate at its disposal.³³ However, in addition to the policy rate, there are other tools that may have an impact on both price stability and financial stability. Reserve requirements may limit behaviour in terms of harmful risk-taking, and open market operations can be used to influence interest rates and credit volumes in the economy. Green (2003) says that a central bank’s role on the interbank market can also make it possible for the central bank to both predict crises of confidence in the banking system and contribute to stabilising cyclical fluctuations.

Several central banks have now observed the link between financial stability and price stability; see for instance Shakir and Tong (2014) for a description of the Bank of England’s views on this, with separate decisions on monetary policy, macroprudential policy and microprudential supervision taken by three separate committees. As Smets’ (2013) review

³² See Borio (2014) and Caruana (2014).

³³ See, for instance, Ingves (2013) for a discussion of this.

shows, however, opinion is still divided with regard to whether or not monetary policy should “lean against the wind”.

The third view presented by Smets (2013) is based on financial stability and price stability being so strongly intertwined that it is impossible to differentiate between monetary policy and measures to attain financial stability. According to this view, both standard monetary policy and extraordinary monetary policy measures are primarily aimed at stabilising the financial system. As shown in Smets’ review, however, this view is so far only represented in a small portion of the academic research.³⁴

THE IMPORTANCE OF MEASURABILITY

It becomes easier to achieve a balance between different objectives and tasks if the effects of the policies are relatively easy to measure.³⁵ Measurability also makes it easier to evaluate and to demand accountability, which in turn is important for how far society is prepared to delegate power to such a largely independent institution as a central bank.

When it comes to crisis management tools, it is easy to see a clear link between measure and effect as they are so close to one another in time—a financial institution receives loans from the central bank, can meet its payments and thus continues to be an important part of the payment system. But when it comes to other objectives and means at the disposal of the central bank, where the desired effect lies further ahead in time, it may be difficult to identify afterwards which measures have succeeded or failed. A change in the policy rate, for instance, is considered to have the strongest impact on inflation after one to two years. Long-term macroprudential instruments such as countercyclical capital requirements have similar problems. During good times, when systemic risks normally increase, partly through credit expansion, the banks should build up a capital buffer to be able to withstand potential shocks. The effect is then that they cannot lend as much. The beneficial effect is that the risk of a credit bubble is reduced. Both the policy rate and the capital buffer thus have objectives that lie further ahead in time, namely stable inflation and milder, or no, shocks to the financial system. But there is nevertheless a difference of degree between macroprudential policy tools and the policy rate with regard to the conditions for measurability of the objectives. Monetary policy can have a price stability objective set at a particular inflation rate in the medium term, which is measured as a change in a suitable price index. It is more difficult to construct a similarly quantifiable objective for the macroprudential tools. Part of the problem with regard to the field of financial stability—of which macroprudential policy is a part—is that research on the preventive work is a relatively new phenomenon. Knowledge of how to attain financial stability lags behind the corresponding knowledge of how to attain monetary policy and price stability (see Bank for International Settlements, 2009, p. 27).

34 However, it is close to the views reported in, for instance, Santomero, Viotti and Vredin (2000), chapter 1, and the Swedish Centre for Business and Policy Studies’ Economic Policy Group (2012), chapter 5.

35 See, for instance, Reis (2013).

In the absence of an obvious and measurable objective for financial stability, one means of attaining some form of measurability might be to measure several different variables that can lead to disruptions in financial stability. Examples of such variables could be, according to Reis (2013), credit growth, the increase in financial institutions' debts in relation to equity capital, the ratio between bank deposits and lending and the vulnerability of the banks' funding.³⁶

To summarise, we can observe that the more tasks and objectives a central bank has in its mandate, the more trade-offs need to be made and the more difficult these trade-offs become. We have also seen that the trade-offs are made easier if the objectives are measurable and that measurability is more important the longer the time lag between the means and objective. On the basis of these insights and the ideas from the previous section on the central bank's fundamental tasks, we will in the following section discuss some, current issues about the central bank's mandate.

4. Current issues in the discussion of the central bank's mandate

The crisis on the financial markets that became acute in autumn 2008 forced many central banks to take unusually forceful measures to maintain the credit supply and dampen the fall in economic activity. Policy rates were cut to just above zero per cent, lending to the banks was extended with regard to maturity, collateral and borrowers and the central banks purchased financial assets directly on the private market.³⁷ Since the crisis, measures have been taken in several parts of the world to increase regulation, primarily in the macroprudential area.

Many central banks have received a macroprudential policy task linked to their mandate in the wake of the financial crisis. This does not prevent the question of the central bank's responsibility for macroprudential policy being relatively controversial in the academic and political debate. To understand the discussion on the central bank's responsibility for macroprudential policy and microprudential supervision, one can bear in mind the ideas we presented earlier about the fundamental tasks of the central bank, the conditions for attaining a balance between competing objectives and the question of whether the independence of the central bank helps or constitutes an obstacle vis a vis the new tasks.

RESPONSIBILITY FOR MACROPRUDENTIAL POLICY

On the issue of macroprudential policy, one can respond to Green's (2013) question of whether there is a market failure that needs to be remedied with a clear yes. The ability of the banks—and the financial system in general—to withstand shocks was proved to be far too low during the crisis. For instance, the capital buffers in the banks are considered to have been small.

³⁶ See Adrian and Liang (2014) for a more detailed discussion.

³⁷ See, for instance, King (2013) and Haldane (2014a).

One advantage of giving the central bank responsibility for macroprudential policy is that it already has a macroeconomic focus in its mandate and the mandate often already entails the task of analysing the payment system on an overall level. Furthermore, the central bank is responsible for monetary policy operations and its lender of last resort task means it has a good overview of the financial markets. Given this, Eichengreen et al. (2011) consider that the central bank should be well-suited to attaining a necessary balance between the interest-rate tool and various macroprudential policy tools such as countercyclical capital requirements and measures to deal with a credit boom. The central bank should have the responsibility for macroprudential policy as it is so closely tied with the standard objectives of monetary policy, that is, stabilising resource utilisation and inflation, according to Blinder (2010 p. 11). Moreover, the central banks' work on financial stability has traditionally entailed responsibility for the system's access to means of payment by lending both to the market as a whole and to individual institutions, according to Goodhart (2010).

If the central bank does not have responsibility for macroprudential policy, it is nevertheless necessary that the central bank and the authority with responsibility for macroprudential policy can coordinate their decisions to some extent, as the macroprudential tools affect variables that are central to the tasks of the central bank.³⁸

The independence of the central bank is a feature that some consider a good reason for giving it responsibility for macroprudential policy tools. Preventive impositions and restrictions, such as forcing the banks to hold larger buffers, are unpopular as they entail a cost for the banks which ultimately their customers are forced to pay. It may be useful to give such long-term measures the same protection from more short-term political deliberations as monetary policy has. In this case, the central bank could be given the task of making decisions with a high degree of independence not just on monetary policy, but also on macroprudential policy tools, see Eichengreen et al. (2011). Such an extension of their independence would entail a need to be able to evaluate the central bank's macroprudential policy measures, which would illustrate the need to be able to measure the objectives for financial stability that we discussed in the previous section. The fact that it is so difficult to make the effects of macroprudential policy tools measurable represents a risk that an extended mandate could damage the legitimacy of the central bank and thus also its independence. If the macroprudential policy tools are used to dampen credit growth and hold back asset prices in an economic upturn, it might be difficult for the general public to understand why. Such measures are politically risky as it may be difficult for a central bank to obtain legitimacy among both the general public and elected political representatives for measures that threaten to reduce growth in the short term, unless it can clearly explain at the same time what the gain will be for the economy. There are

38 Jonsson and Moran (2014) analyse the links between monetary policy and macroprudential policy. Their analysis indicates that the way in which monetary policy should react to the introduction of a capital buffer depends on which disturbances are behind the fluctuations in the economy. According to this analysis, a higher welfare gain is achieved if the authorities responsible for monetary policy and macroprudential policy coordinate their decisions.

arguments that the policy rate also has such effects. Raising the repo rate to attain an effect on inflation at, say, two years ahead will initially increase households' costs. This has been one argument why an independent central bank, which is not influenced by criticism from the general public, is suitable for the task. There are also other ways of controlling, for instance, a credit boom than macroprudential policy measures, as pointed out by Goodhart (2014). Fiscal policy instruments such as taxes can also be used. One argument why responsibility for macroprudential policy tools should lie with the government rather than the central bank is that these measures are very similar to fiscal policy measures, which are normally aimed primarily at governing the allocation of resources in society.³⁹

RESPONSIBILITY FOR MICROPRUDENTIAL SUPERVISION

With regard to the question of which institution should have responsibility for microprudential supervision, that is supervision of individual institutions, a review by the European Central Bank (2010) showed that the sector-based supervision divided into banks, insurance and securities under different authorities was in the process of being abandoned, even though the picture prior to the financial crisis was that an overall supervision with all institutions under the same authority prevailed. Several countries were in the process of strengthening the role of the central bank in financial supervision. For the central banks that already had such responsibility, supervision over the banking sector alone was the most common. At the same time, there were different systems within the different EU countries. In several cases, the central bank has received an extended mandate to include microprudential supervision after the crisis.⁴⁰ In some cases, the transfer of supervision to the central bank has been a return to an earlier system which in turn may have applied until the central bank was given the blame for the failure of the supervision.⁴¹

Rosengren (2009) says that a central bank with responsibility for giving support to the banks needs to be able to evaluate the counterpart's—that is, the borrowing bank's—solvency and collateral and that this need is best met by having practised supervisory expertise within the central bank. If a systemically-important institution were to fail, this could in itself be sufficient to start a systemic crisis, which according to Blinder (2010, p. 11) indicates that the authority with responsibility for macroprudential policy should also have responsibility for supervision of at least the systemically-important institutions. It is often the changes in these institutions' balance sheets that can jeopardise financial stability. However, Blinder assumes that the central bank has the responsibility for macroprudential policy. In the cases where this applies, it further increases the central bank's advantages of also being responsible for microprudential supervision.

39 These or similar arguments have been put forward by, for instance, King (2013), Goodhart (2014) and Eichengreen et al. (2011).

40 For example: Hungary, the United Kingdom, Belgium and Ireland. See further the European Central Bank (2010).

41 Koetter, Roszbach and Spagnolo (2014) and Cobham (2012).

Experts have pointed to several possible trade-offs that need consideration if the central bank is to have responsibility for the supervision of banks. According to Green (2003), the question is whether one can fear that a central bank with supervisory responsibility will treat the banks more favourably when it supplies emergency liquidity assistance. Blinder (2010) mentions a potential conflict between supervisory responsibility and monetary policy. In a situation where economic development is weak, the supervision might need to limit the credit institutions' lending to reduce the risk of financial instability, at the same time as the economy needs more loans for macro-economic reasons. However, Blinder points out that the trade-off will exist regardless of whether two authorities or one and the same have responsibility for monetary policy and financial supervision. It is then better that one and the same authority takes care of this balance. Blinder also questions whether any other authority can deal with this balance better than the central bank.

The independent position of the central bank is also used as an argument in favour of it having responsibility for at least systemically-important institutions. The fact that these institutions are large and thus have potentially substantial political influence indicates, according to Blinder (2010 p. 12), that the authority responsible for their regulation should be politically independent. Koetter, Roszbach and Spagnolo (2014) and Ingves and Lind (2007) are on the same wavelength here.

Blinder (2010) does not distinguish between banks and other financial institutions: If they are systemically important, they should be under the supervision of the central bank. His analysis focuses on the financial system in the United States. On the other hand, in international terms it is unusual that the overall financial supervision lies with the central bank.⁴² In Europe, for instance, the picture is fragmented and subject to change, particularly since the recent financial crisis.

One example of institutions that have long been considered to be of minor interest to the stability of the payment system is insurance companies. However, Carney (2014) says that insurance companies also play an important role in the resilience of the financial system in that they manage and spread risk and have an important role in the effective allocation of capital. These are tasks that they share with the banks. Unlike the banks, the insurance companies have a long-term horizon, which contributes to the resilience of the financial system. Insurance companies may therefore be systemically important. For this reason it is important to understand the insurance companies' activities in fields that entail a link to other parts of the financial system. According to Carney, this justifies the Bank of England having supervisory responsibility over them. It remains to be seen whether these insights will lead to more central banks having responsibility for the supervision of at least systemically-important insurance companies.

⁴² Bank for International Settlements (2009, p. 10).

Following the most recent financial crisis, and as an effect of the increased regulation of the banking system that ensued, a phenomenon known as shadow banking has attracted increasing attention.⁴³ The concept refers to institutions with activities similar to those of the traditional banks (for instance, maturity conversions through short-term deposits converted into long-term investments) and which can give rise to systemic risks by, for instance, being on the same markets as traditional banks or supplying products that the banks use, say, to reduce their credit risk. Although shadow banking thus affects the banks in several different ways, these institutions are not regulated in the same way as the banks. Nor are they subject to the same supervision as the banks. This is what makes them increasingly interesting to investors, but at the same time also entails risks to financial stability. The shadow banking sector has grown as a result of increased demands for yield, as well as the flight from an increasingly strictly-regulated and less risky market. An area of shadow banking that is common in the United States, for instance, is money market funds. They contribute to the banks' funding by investing in the banks' bonds and certificates. Additionally, they are active to some extent on the same markets and appeal to the same investors and customers as the banks. The US money market funds also invest in institutions outside the United States and in this way affect banks all over the world. Through the influence on the banks, the shadow banking activities have significance for systemic stability and consequently for the central bank.

At the same time, shadow banking can be a useful complement to traditional banking by giving increased access to loans and supporting the market's need to buy and sell assets (often referred to as liquidity) as well as risk allocation. The challenge is therefore to maximise the advantages of shadow banking at the same time as minimising the risks.⁴⁴ Haldane (2014a) says that as activities in the shadow banking sector increase, the central bank will need to grant loans to this sector, too. This is what happened with the money market funds in the United States in autumn 2008. This task will mean that the central bank will see new types of collateral in its operations.

The arguments in favour of the central bank having responsibility for other systemically-important financial institutions than the banks essentially have the same basis as the arguments in favour of the central bank having responsibility for banking supervision.

LENDER OF LAST RESORT AND THE EFFECTS ON FINANCIAL STABILITY

During the financial crisis it became clear to many central banks that what has been their reason for existence for a hundred and fifty years—the ability to create means of payment in their own currency—was no longer sufficient to maintain the functions of the financial system in a crisis situation. Commercial banks that have taken on responsibility for the risk that ensues from cross-border financial operations need foreign currency and in a global

⁴³ The phrase is said to have been coined in a speech by economist Paul McCulley in 2007 at a Kansas City Federal Reserve Bank symposium in Jackson Hole.

⁴⁴ Read more about shadow banking in IMF (2014) and from a Swedish perspective in Hansson, Oscarius and Söderberg (2014).

financial crisis in a global financial system good access to the large world currencies is required. Building up a foreign currency reserve in the central bank to deal with such a crisis is costly. Central banks therefore need to establish and rely on mutual agreements. This of course involves an element of uncertainty and risk in relation to being responsible for access to one's own currency. The jurisdictions that were systemically important for the United States during the most recent crisis were offered what is known as swap lines. Swap lines in this case are agreements where other central banks are given the opportunity to borrow US dollars from the Federal Reserve. According to Cecchetti (2014), it is likely that such swap lines will also be needed in the future. Most of the swap lines were retained until 2010⁴⁵ and a few of them even longer.⁴⁶ Cecchetti (2014) says that it is in the United States' interests to once again extend the list of countries that can borrow from the Federal Reserve during a crisis, if the US dollar is to continue to have the status of the world's reserve currency.⁴⁷ At the same time, the United States' political preparedness to take on the role as global lender of last resort, and with this possibly some form of supervisory responsibility for other countries' financial systems is most likely uncertain.

At the same time, there are problems in allowing financial institutions around the world to assume good access to large volumes of US dollars. The need to limit the risk of moral hazard – that is the assumption that the risk will be transferred to others – applies of course to all forms of support. To avoid moral hazard, incentives must be created for financial agents to protect themselves against shocks or crises by reducing their risk-taking and investing in assets with lower risk and high liquidity. One possible measure to limit the need for loans from the central bank in foreign currency is to introduce national regulations that limit imbalances between assets and liabilities in foreign currency. Another possible measure is international limitations combined with the Federal Reserve setting a high price on its dollars in the form of a high penalty rate, according to Cecchetti (2014).

The lender of last resort task also entails other moral hazard deliberations. There are those who say that many agents saw the risks in the market prior to the crisis, but despite the risk they speculated and just assumed that they would receive assistance from the government or the central bank. It is a common argument that the conditions for moral hazard behaviour among the banks increase when central banks lend money during crises, which in turn increases the risk of instability in the payment system.⁴⁸ If, moreover, the support is provided against collateral with a high risk and low liquidity, this increases moral hazard.

45 The central banks that had swap arrangements with Fed were the Reserve Bank of Australia, the Central Bank of Brazil, the Bank of Canada, Danmarks Nationalbank, the Bank of England, the ECB, the Bank of Japan, the Bank of Korea, the Bank of Mexico, the Reserve Bank of New Zealand, Norges Bank, the Monetary Authority of Singapore, Sveriges Riksbank and the Swiss National Bank.

46 The Bank of Canada, the Bank of England, the ECB, the Bank of Japan and the Swiss National Bank.

47 A reserve currency is a national currency that is also used for international trade and international transactions. Reserve currencies are often included in a country's foreign currency reserve. There are several currencies with the status of reserve currency for other countries—for instance, the euro and the rouble—but the US dollar has been the largest one since the Second World War.

48 See, for instance, Acharya and Tuckman (2013) and Santomero, Viotti and Vredin (2000, p. 6).

With regard to the first phase of the financial crisis of 2007-2009, researchers have concluded with hindsight that traders and brokers retained lucrative, high-risk assets longer than they would have done if they had been convinced that they would ultimately have to bear the risk themselves.⁴⁹ There may be some benefit in actually allowing such misconduct to punish itself, even if this entails costs to society in the short term. It need not be the case that the most efficient solution to a stability problem in the short term is also the most suitable one for financial stability in a longer-term perspective. Sometimes, for instance, it may be better for long-term stability to refuse emergency liquidity assistance to prevent harmful risk behaviour in the longer run. Each individual bank failure and each individual fluctuation in asset prices need not be regarded as a sign of financial instability. Following a financial shock, this may rather be a sign that the system is stable and is cleansing itself.⁵⁰ If the main rule is instead that the banks' misconduct has tangible effects on the banks and their owners, the owners will be forced to take preventive measures and reduce their risk-taking.

A complementary idea, according to Haltom and Lacker (2013) is to limit the central bank's possibility to provide liquidity assistance. If the central bank can convincingly claim that even systemically-important institutions may be refused assistance, it may create incentives for lower risk-taking on the market. Grung Moe (2012) calls for a resolution that would mean banks could be closed down without consequences for the financial system as a whole. At present, a directive on recovery and resolution of credit institutions is being implemented within the EU.⁵¹ According to this, ownership of an institution that is assessed as being able to partly survive after a reconstruction under certain circumstances will be transferred to its creditors. It remains to be seen whether the threat of such consequences can give the owners sufficient incentive to reduce the risk-taking in their institutions.

Other measures to reduce the expectations of assistance from the central bank during a crisis that Grung Moe mentions include forcing banks to draw up "living wills", that is, reconstruction plans, and separating ("ring-fencing") the banks' trade in securities (investment banking) from their other operations. Grung Moe considers these initiatives to be worthy of praise but that it will take many years before they have been fully implemented and we can see any effect from them.⁵²

However, not everyone feels that the most recent crisis was just a question of calculating moral hazard behaviour. Instead, it is said that the banks quite simply did not realise the risks they were taking and that they were not speculating in the hope that they would be saved by tax-payers, or at least not until towards the end of the crisis. Goodhart (2014) says that the banks followed a common pattern that meant they fastened in a property bubble

49 See Acharya and Tuckman (2013) and Grung Moe (2012). Goodfriend (2011) proposes that the Fed should limit its liquidity assistance to "occasionally, temporary, well-collateralized ordinary last resort lending...".

50 See, for instance, Issing (2003) and Schinasi (2004).

51 Directive 2014/59/EU establishing a framework for the recovery and resolution of credit institutions and investment firms.

52 As perhaps first and foremost a theoretically interesting alternative at present, Grung Moe highlights a proposal by James Tobin in 1987 that entails a payment system guaranteed by the government in addition to that of the banks. The effect would be that the banks could never claim systemic importance in a crisis and banks in distress could be closed without any consequences for the payment system.

with an extreme credit expansion and excessive borrowing in relation to their equity capital. When they realised the situation they were in, it was too late to sell the assets without making huge losses.

A summary of this discussion is that central banks should also think about the effects on institutions' risk behaviour when they design their assistance in case of shocks, not least for the sake of long-term financial stability. One hope is that other regulations will comprise an effective complement to the central bank's task as lender of last resort in the case of disruptions to the payment system.

5. Key issues for the future

In the year 2000 a conference was held at the Riksbank on the future mandate of the central bank.⁵³ The following are some of the questions asked at the conference:⁵⁴

1. Should the central bank conduct a narrow inflation-targeting policy without taking into account the consequences for the macro economy as a whole?
2. Should the central bank be responsible for financial stability, and if so, how should this objective be measured and what should the relationship between financial stability, price stability and macroeconomic stability be in general?
3. How should the regulatory framework be designed; on the one hand sufficiently flexible to follow market developments but on the other hand sufficiently detailed to be useful to the authorities responsible for the stability and efficiency of the financial markets?
4. How should a system that offers systemic loans (so-called lender of last resort) and other forms of guarantees against financial instability be able to withstand the problems of the system agents taking excessive risks in the certainty that they are guaranteed support from the central bank if the risks were to be realised (moral hazard)?

Today, almost fifteen years later and in the wake of a global financial crisis, central banks find themselves in a period marked by increased regulation of the payment system and its participants and extended central bank mandates. There is now a different level of risk awareness than during "The Great Moderation". We now know that risk-taking increased as a result of developments on the financial markets.⁵⁵ As a result, authorities around the world are taking action to make the system sufficiently robust to withstand or at least alleviate future shocks.

53 The conference was arranged by Sveriges Riksbank in collaboration with Professor Anthony Santomero, Wharton School, University of Pennsylvania and Professor Torsten Persson, Institute of International Economic Studies, Stockholm University.

54 See Santomero, Viotti and Vredin (2000).

55 See Rajan (2005), who observed at an early stage the risks that were being built up.

On the basis of the academic literature and discussion we have reviewed, we have identified a number of issues we believe will be discussed by central banks, researchers and politicians in the coming years and which may form the basis for a new conference and continued discussions of the central bank's mandate.

THE DECLINING USE OF PHYSICAL MEANS OF PAYMENT

As book-entry money through various forms of digital payment increase in significance, demand from the general public for physical money created by the central bank may decline.⁵⁶ What this may entail for society's preparedness to manage the various forms of crisis that can affect the payment system is a future issue that requires further investigation. But one should also investigate how this can affect the central bank, which has a large share of its income from issuing banknotes.

The change is partly a consequence of increased use of digital payment methods and seems to be gaining ground in Scandinavia, in particular. If the central bank is forced to cover its costs through allocations from the government budget, its financial independence could be threatened.

If developments continue along the same path, how will it be possible to finance the central bank's costs and ensure its financial independence in the future?⁵⁷

Is the payment system more vulnerable as a consequence of reduced use of physical means of payment, or is it just an unavoidable step towards a digital payment system that gives rise to other questions, for instance concerning technological security?

What responsibility should the central bank have for safeguarding or promoting the security and efficiency of the payment system when new payment technologies are introduced?

LENDER OF LAST RESORT AND MORAL HAZARD

In recent years a number of initiatives have been taken to reduce risk-taking behaviour that is thought to have been one of the causes of the most recent financial crisis. What effect will these crisis prevention rules for macroprudential policy, resolution, living wills, ring fencing, separation of proprietary trading, stricter capital adequacy rules and so on have on the behaviour of the financial institutions and the need for loans from the central bank?

Are there other, more effective ways of reducing risk-taking?

LENDER OF LAST RESORT IN LIGHT OF INCREASING INTERNATIONALISATION

Being able to supply the domestic currency has always been a central task of the central bank with regard to safeguarding the functions of the payment system. Nowadays we have a constantly growing, globalised financial market that is marked by an increasing degree of

⁵⁶ There is a discussion of the cashless society originating from Wicksell's lectures, see Wicksell (1935). This is discussed, for instance, in Jonung (1978).

⁵⁷ See af Jochnick (2015).

cross-border activities. The banks' increased exposure to the large international currencies makes reserve currencies more significant for the stability of the national payment systems. This is particularly true of the US dollar.

How does this development affect the task for other central banks with their own, smaller currencies? Will reserve currencies and swap lines with the larger central banks become even more important in future crises? Could this type of development in practice give the very few large central banks an almost global responsibility for financial stability, and perhaps also for monetary policy?

SUPERVISION OF BANKS AND OTHER FINANCIAL INSTITUTIONS

The supervision of individual, systemically-important financial institutions is important to be able to identify moral hazard and take necessary measures to counteract it. Financial supervision can give central banks access to first-hand information about their presumptive borrowers' creditworthiness. In some countries the central bank already has the responsibility for financial supervision, while other countries have chosen to have separate authorities for this.

What are the advantages and disadvantages of giving the central bank responsibility for microprudential supervision of systemically-important financial institutions?

MACROPRUDENTIAL POLICY

A common argument is that central banks should not be given the responsibility for macroprudential policy tools such as countercyclical capital buffers; as such instruments are similar to fiscal policy tools such as taxes. Decisions on these tools should therefore be made by elected representatives instead of a largely independent authority. Moreover, the effects on households' finances can damage the legitimacy of the central bank. There are also arguments in favour of responsibility for macroprudential policy being with the authority responsible for microprudential supervision. Nevertheless, there are cases where the central bank is given responsibility for these tools, perhaps partly due to the close link to monetary policy with regard to the mechanisms through which the various instruments impact the economy.

What trade-offs need to be made on the question of where the responsibility for macroprudential policy should lie? If the central bank should not have this responsibility, then how can the policies best be coordinated?

STRUCTURAL CHANGES

Bean (2009) is one of many who have pointed out that the most recent financial crisis has led to an interest in Minsky's financial instability hypothesis from 1982.⁵⁸ According to this, good times lead to good access to credit, which in turn leads to a credit boom

⁵⁸ Minsky (1982).

and excessive indebtedness in the private sector. This in turn develops into credit bubbles that trigger a financial crisis when they burst. Falling asset values contribute to the agents with the highest debts defaulting on their payments, which fuels instability in the entire financial system. Companies' and households' access to loans declines significantly, which leads to a downswing in the real economy, which in turn contributes to a continued fall in asset prices. High nominal debts, falling asset prices, lower profits and falling disposable incomes also risk leading to a downward deflation spiral—an argument that has also been put forward by Fisher (1933). Even if successful stability measures lead to a less volatile market, they could force financial agents to take on higher debt in their search for higher yield. The long-term interest rates we have seen for some time now around the world can also contribute to an increase in the search for constantly higher yield, which can result in higher risk-taking. Stricter regulations, more stable markets with less volatility and low interest rates can also lead the financial agents to turn to the shadow banking sector to an increasing extent.

How might such structural changes affect the central bank's objectives and tasks?

THE INTERACTION BETWEEN PRICE STABILITY AND FINANCIAL STABILITY

The most recent crisis has reinforced the impression that financial stability is a necessary condition for price stability, and has also given rise to a discussion on the use of monetary policy tools to attain financial stability. Regardless of whether monetary policy and the instruments for financial stability are managed by one and the same authority or different ones, some form of coordination is needed. All of this raises questions, for instance, on the degree of independence enjoyed by the central bank and on its credibility. Its independence is primarily regarded as intended for monetary policy. But as shown in this article, there are arguments in favour of price stability being only part of the central bank's task in promoting a safe and efficient payment system.

What are the advantages and disadvantages in linking together the tasks regarding price stability and financial stability?

CHALLENGES FOR CENTRAL BANKS' GOVERNANCE AND STRUCTURE

Governance, transparency and accountability are all important building stones behind the legitimacy of the central bank. The discussions on new, broader mandates will include trade-offs that society will have to make if it wants an independent and credible central bank that is at the same time transparent and subject to effective follow-ups to the extent required by a democratic society. On the basis of the inherent ambivalence in these requirements, the following questions arise:

1. What information should the central bank give to the general public to enable it to demand accountability?

2. How should parliament effectively oversee the central bank's strategy to attain its objectives at the same time as maintaining the independence of the central bank?
3. How should the structure for the central bank's areas of responsibility be designed? Should, for instance, the responsibility for monetary policy and financial stability be managed by special committees, as is the case in the Bank of England?
4. How should the committees in such a case be designed with regard to size, composition (for instance, internal and external members respectively), appointment procedure and the length of the period of office?⁵⁹

CENTRAL BANK INDEPENDENCE IN LIGHT OF A BROADER MANDATE

There is an ongoing discussion on how a central bank's independence is affected by an extended mandate. This question can be divided into three parts:

1. An extended mandate, such as macroprudential policy, often entails further operational tasks within the framework of the responsibility shared with one or more authorities. One effect is thus an increased need for coordination between these authorities.
2. The mandate can also be extended to include further general political objectives for the economy other than the price stability and financial stability objectives, such as one for employment.
3. Historical experience and economic theory shows that there are multiple and strong connections between central banking and fiscal policies. The broader the mandate of the central bank, the stronger the connection. This also means that a broad mandate can be difficult to reconcile with a high degree of central bank independence.

What risks are connected with a broader mandate, partly for central bank independence and partly with regard to delegating tasks that are closely related to fiscal policy to an independent authority?

THE QUESTION OF THE BEST CRITERIA FOR THE CENTRAL BANK MANDATE AND TASKS

Before a decision is to be made to introduce a task or regulation, the question should be asked of what market failure one is trying to remedy. At the same time, public interest should not intervene in a way that makes the actual intervention a greater problem than the market failure. There are examples of a trade-off between a safe and efficient payment system, as between financial stability and economic growth. If the conclusion is that there is justification for an intervention by the authorities, the legislature may proceed to the question of which authority should have responsibility for this intervention.

⁵⁹ See Haldane (2014b) on the importance of observing the risk of, for instance, consensus thinking in a group that is too homogeneous.

The legislature should make the decision on the basis of three criteria

1. A new task should be a complement to one of the authority's fundamental tasks.
2. There should be benefits from giving the authority the new task with regard to its governance, structure and organisation.
3. The authority should have the best conditions for managing the trade-offs that may arise as a result of conflicts between the objective of the new task and the authority's other tasks.

If the new responsibility is to be assigned to the central bank, what are the central bank's fundamental tasks, and what benefits will arise from giving it further tasks? Which objectives of the central bank's activities are the most important? Are the above criteria of practical use in a discussion on which tasks a central bank or other authority should have?

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