Rethinking the central bank's mandate
A summary of a conference of international experts

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In recent years, the discussions on what central banks should do have intensified around the world, both among experts at academic institutions as well as in the media, among politicians and among the broader general public. This is due mainly to the crisis in the financial system which adversely affected many countries in 2007-2009 and its lasting repercussions, but also to some extent to more long-term trends in the global economy, including innovations on financial markets and "globalisation". This article summarises the presentations made by international experts at the conference "Rethinking the central bank's mandate", arranged by Sveriges Riksbank on 3-4 June 2016.

1 Central banks from the 17th century to the present day

"When a new nation state seeks to establish itself, the foundation of an independent central bank will be an early item on the agenda, slightly below the design of the flag, but above the establishment of a national airline."[1] This quote is from a conference volume published in connection with the Bank of England's tercentenary symposium in 1994. It is of course half in jest, half in earnest, but it reflects the fact that central banks have been seen through the years as both a prerequisite for an efficient economic system and a key institution in the political system.

Sveriges Riksbank is often considered to be the world's oldest central bank. It dates back to 1668, making it twenty-six years older than the Bank of England. In an historical perspective, however, central banks are still a relatively new phenomenon.[2] Central banks did not become common in Europe until the 19th century, and the decision to create the Federal Reserve in the United States was not taken until 1913. The tasks of central banks, and their connection to the political system, have varied over time and among countries. In slightly simplified terms, however, one can say that the main task of a central bank has been to maintain an efficient system for payments and credit.[3]

During the Second World War, many restrictions were introduced on international trade and capital flows. The financial markets remained strictly regulated right up until the 1980s. During this period, an important task for central banks was to administrate this regulation policy. Direct political influence over central banks was generally strong. During the 1980s and 1990s, deregulation and innovations on financial markets gradually began to develop. Greater mobility for labour, capital, goods and services among countries led to a "globalisation" that also made the differences between central banks in different countries less distinct. Central banks' independence in relation to the political system increased in many countries, while their freedom to act was also affected by ever-greater integration

* We would like to thank Claes Berg and Jessica Radeschnig for their help with editing this conference volume.
1 Capie, Goodhart and Schnadt (1994), p. 91.
2 Se Capie et al. (1994).
3 In her presentation, Loretta Mester points out that the Federal Reserve was established after a series of financial panics to help promote a more stable financial system and avoid costly bank runs.

with the rest of the world. Central bank operations focused afterwards on maintaining price stability, with low and stable inflation, by adjusting interest rates.

This, in combination with deregulation, financial innovation and globalisation, contributed to high and stable economic growth in several countries in the 1990s and in the early 2000s. This took place without any surge in inflation – in contrast to the experience of "stagflation" from the 1970s and 1980s, when growth was low and inflation high, not least in Sweden and other European countries. The period of stable and high growth and low inflation, more or less all over the world, from the mid 1990s to the early 2000s, has been labelled "The Great Moderation". But it was followed by "The Great Financial Crisis". The reforms and innovations that had contributed to the surge in economic growth were also found to have given rise to new risks, both on financial markets and in the economy as a whole.[4]

To limit the harmful effects of the global financial crisis, avoid deflation and maintain an efficient payment and credit system, central banks cut their interest rates sharply. They also took a number of other measures, including lending money to banks and purchasing government bonds and other assets. This caused central bank balance sheets to swell. To begin with, this was seen as a necessity in an emergency situation, but the global economy has recovered slowly after the crisis and these "unconventional" measures have therefore still not been phased out.

The development has raised many questions about the design of the central bank mandate. A lesson from the financial crisis was that keeping prices stable was not enough to create stability in the economy on a more general level. It is insufficient for central banks to try to achieve macroeconomic stability through price stability while the micro level in the financial system, that is individual financial institutions, are overseen using traditional supervisory methods by either central banks or separate finance supervisory authorities. Oversight and governance of the financial system as a whole are also required. This insight has led to the creation of an entirely new policy area; macroprudential policy. Macroprudential policy is partly a question of introducing regulations similar to those that applied in the first few decades following the Second World War – different measures for limiting growth and fluctuations in credit and indebtedness. This in turn raises the question of whether it should be the task of central banks to administrate these measures. On the one hand, they work via some of the same channels as interest rate policy and are linked to a central bank's traditional responsibility for the payment and credit system. Furthermore, arguments for keeping macroprudential policy at arm's length from the political system can be just as strong as they are for interest rate policy. On the other hand, macroprudential policy is also closely linked to microprudential policy and also has some similarities with fiscal policy measures. Giving a large toolbox to a central bank that is very independent can also lead to problems relating to the political legitimacy of central bank independence. On economic grounds, we can indeed question whether it is appropriate to separate interest rate policy from micro- and macroprudential policy, but there are political arguments in favour of spreading the responsibility for financial stability among different authorities.[5] Neither is central bank independence a black and white issue but is instead somewhat of a grey area. The degree of independence varies among countries, and it is reasonable to assume that the tasks allocated to the central bank depends on how independent it is, and vice versa.

In addition to experiences from the financial crisis and the consequences it should have for interest rate policy, regulations and supervision of the financial system and central bank independence, globalisation and different financial innovations raise a number of other issues relating to the central bank's mandate. What does it actually mean when we say that

4 See Borio and Lowe (2002), and Rajan (2005).

5 See Acharya (2015).

the central bank has a statutory monopoly on issuing banknotes and coins that are "legal tender", when both the supply of and demand for other forms of payment are constantly increasing? How should the central bank's task of providing emergency liquidity assistance, that is act as lender of last resort, be formulated when (a) banks are increasingly operating across national borders, and (b) banks' tasks are also being performed to a greater extent by other financial institutions (so-called shadow banks)? What responsibility does the central bank have for financial stability, and how is this linked to monetary policy and the resposibilities of other authorities (for example, regulations and fiscal policy)? How should central bank governance be designed – both politically and internally – depending on which mandates it receives?

It was against this backdrop that Sveriges Riksbank arranged a conference of international experts on 3-4 June 2016.[6] The rest of this article summarises the presentations made at the conference. More than half of these presentations are also published in this issue of the Economic Review in the form of specially written papers. These sometimes contain more ideas and analysis than in the original presentations.

The conference was arranged as a number of sessions with different themes and ended with a panel discussion. We summarise all the presentations per session below, including the contributions published in this special issue. Our summary is intended to be easily accessible for non-specialists in the subject or those who just want a quick overview. If you wish to dig deeper, we recommend you to read the published contributions in this issue. Alternatively, you can find the presentations on the Riksbank's website.[7]

2 Why are central banks necessary?

Alan Blinder is a professor at Princeton University and ex-chair of the Board of Governors of the Federal Reserve System. He began by noting that *somewhat independent central banks* are necessary; his point being that the tasks of central banks could in principle be done by, say, a finance ministry, although this would not be appropriate. Thus, a central bank with a certain degree of independence is needed. What that independence should look like depends on the functions given to the central bank by its commissioner (parliament or government).

Blinder describes four classic functions of a central bank:

1. Monetary policy
2. Lender of last resort
3. Supervisor/regulator of banks/financial institutions
4. Guardian/operator of the payments system

Blinder considers 1) and 2) to be defining properties, that is functions where the central bank has a "natural monopoly". However, the central bank can encounter competition regarding tasks 3) and 4).

As regards monetary policy, Blinder said that the central bank's task is broader than merely maintaining price stability at a "nominal anchor" with the help of interest rate policy. This was the view taken by many prior to the financial crisis. Instead, central banks now use several different instruments and can also consider other goals, such as financial stability and employment. A responsibility for financial stability is actually nothing new as central banks

6 For a more detailed background, see the article by Georgsson, Vredin and Åsberg Sommar (2015), which was circulated to the international experts together with the conference invitation. The conference programme can be found in the appendix to this paper.

7 The conference invitation did not stipulate a requirement to deliver a paper, only a request for the experts to share their knowledge in the form of a presentation at the conference itself. The slides from all the presentations can be found on the Riksbank's website at: www.riksbank.se/sv/Riksbanken/Forskning/Konferenser/2016/Rethinking-the-Central-Banks-mandate--konferens-3-4-juni/.

were originally founded to create it. But Blinder expressed surprise over the fact that not more central banks have been given an explicit mandate to control employment. The Federal Reserve has such a mandate.

As regards being lender of last resort to financial institutions, Blinder noted that this is something that can be easily politicised. But the task must be given to one (and only one) institution that can "print money". It must also be handled carefully as having a lender of last resort can lead the financial institutions to take excessively high risks since they know that they will receive support in a crisis situation. This phenomenon is usually referred to as "moral hazard".

Blinder pointed out that many different solutions have been chosen internationally as regards how to distribute the responsibility for supervising and regulating financial institutions. This is not that strange as there are many ways of combining the responsibilities. One institution can, for example, be responsible for regulation, another for supervision. Different authorities can be responsible for banks and other financial institutions respectively. Micro- and macroprudential policy can be given to a single authority or to several different ones. For example, the Fed "competes" with many other authorities in these areas, but has after the financial crisis been given the main responsibility for all systemically important institutions in the United States, both banks and others. However, the Fed shares the responsibility for macroprudential policy with the Department of Treasury. This means that the Fed is to keep track of weaknesses in the system and blow the whistle, although it has no macroprudential policy weapons of its own.

As regards the fourth task, the payments system, Blinder emphasised that central banks have long since had competition in this field. The monopoly on issuing currency, for example, is becoming increasingly less important. Central banks do, however, need to monitor how the payments system functions and act as "plumber". The payments system must be more reliable than cable TV!

In a financial crisis, the role of the central bank changes in these four classic functions. In a crisis situation, central banks naturally act in accordance with a short-term plan. The main task will then be to maintain financial stability by acting as lender of last resort and ensuring that the payments system works, while normal monetary policy takes a back seat. In such a situation, it can be critical for central banks to have access to the same information as the authorities that supervise financial institutions. The need for coordination with finance ministries will also be greater. These conditions mean that the usual arguments for central bank independence may be less relevant in a crisis. But when the crisis is over, independence should be re-established. So what do we do if the crisis lasts a long time and becomes the norm? This is a challenge currently facing the euro area, Blinder thought.

Alan Blinder concluded by noting that there may be reason for central banks to go outside their formal mandate in a crisis situation and for us to accept that central banks then operate less independently. But under normal circumstances, it is important for central banks to "stick to their knitting", that is keep within their mandates, regardless of whether they are broad or narrow, so that they can continue to operate independently.

Jon Faust is a professor at John Hopkins University and former special advisor to Federal Reserve chairs, Ben Bernanke and Janet Yellen. He pointed out that it is important to look at a longer historical span when formulating the central bank's mandate. The risk is that focus will otherwise be only on the most recent crisis. Faust reminded everyone that it is generally a good idea to keep an eye on the rear-view mirror when moving forward and trying to work out solutions to current problems.

Just now, we have particularly good reason to scrutinise relevant history. It was Faust's opinion that the early 2000s may distinguish itself as a misdirected deviation in the long history of how people have viewed the operations of central banks. There was a period when many experts and decision-makers either forgot the lessons of financial crises or felt that they were no longer relevant. According to the view that prevailed at the time, the central

bank's overall objective was to "provide a nominal anchor". Many other lessons from our monetary history were confined to a more remote location. History has a way of reminding those who forget, Faust pointed out, and in this case it did so with breathtaking speed and ferocity, in the form of a classic financial crisis.

According to Faust, central banks – and other private and public institutions that supervise and regulate the financial system in some way – are needed as modern financial economies tend to be adversely affected by pathologies that are difficult to predict. It can, for example, be a question of payment balance crises, an unsustainable fiscal policy giving rise to crises in public finances, unsustainable borrowing in the private sector leading to financial crises and crises, or an overheated economy with an excessively rapid increase in the general price level.

If we are to re-evaluate the tasks of central banks, a focus on the risks of such pathologies, as Faust calls them, is a good starting point. According to Faust, central banks will always be the first to tackle financial crises when they arise, largely regardless of how their mandate is designed. Whether central banks, in addition to the responsibility for price stability, should have explicit mandates to promote stability of real activity and financial stability is something that needs to be further discussed, Faust said. There are synergies between monetary policy and the regulation and supervision of banks and the payments system, which suggest that gathering these tasks at one institution is beneficial. On the other hand, a central bank may find it difficult to manage all this, and politicians may have difficulty delegating such a large responsibility to a central bank with a high degree of independence, Faust noted. As regards to balance of payment crises, central banks have shifted from a strategy of focusing on avoiding them, which meant that the price stability objective became subordinate, to a converse strategy focusing on price stability and leaving the external balance in the hands of the market. According to Faust, neither of these strategies have been entirely successful.

Faust concluded by noting that the economic depression of the 1930s was followed by a long period of economic stability. This may have been due to the lessons learned from that crisis, which, if true, gives us cause for optimism about macroeconomic performance following the latest crisis. But Faust pointed out that economic crises have also tended to lead to political blunders and that it is therefore unclear in the current situation which of these hopeful or ominous tendencies will dominate.

3 What role has a central bank in liquidity provision?

Franklin Allen is a professor at Imperial College, London and the University of Pennsylvania. He pointed out that inadequate access to liquidity was an important component of the financial crisis of 2007-2009 – that is both financial corporations and other companies had insufficient short-term debt-servicing ability although their long-term earning capacity was good. In the development of Basel III, a new international regulatory framework for banks, work has therefore focused on setting out different types of liquidity standards (the LCR and NSFR ratios). Allen stressed the importance of asking why insufficient liquidity can arise, what market failures can cause it and whether the regulations are the best way of correcting the problems. So far, the research literature has focused more on which capital requirements should be imposed on banks than on liquidity standards.

In economic theory, a central bank acting as lender of last resort can be justified in order to mitigate the effects of a single bank, or the entire banking system, being hit by a bank run. But it is not obvious, Allen said, that liquidity standards are also required because of this. Examples of market failures that could prompt such standards have, however, been presented by Rochet (2004 and 2008) and by Perotti and Suarez (2011).

When going from theory to practice, we also have to consider the fact that liquidity standards and other regulations incentivise banks and other companies to develop new financial instruments, mainly created in order to comply with the new standards. This causes a problem both because it can lead to the purpose of the standards not being fulfilled, and because the resources spent on circumventing the standards could be used to better effect. Another difficulty caused by this development is that central banks need access to funding in foreign currency in order to be able to supply the emergency liquidity assistance that banks need. The use of swap agreements between central banks could be extended to increase their access to foreign currency.

Allen's conclusions were that the research into liquidity problems and liquidity standards is still at a relatively early stage compared with the capital requirement complex, and that it is, for example, far from clear which of a bank's assets should be counted as liquidity.

Linda Goldberg is Senior Vice President at the Federal Reserve Bank of New York. She pointed out that central banks are devoting themselves to facilitating provision with means of payment and credit – that is liquidity provision in a broad sense – in several different forms, which has to do with both monetary policy and financial stability.[8] In normal monetary policy, the central banks limit the effects on interest rates caused by normal fluctuations in the demand for liquidity. Central banks also provide emergency liquidity assistance under special circumstances. Goldberg described the Fed's different forms of deposits and borrowing ("discount window basics") and their various conditions, such as interest rate, who is allowed to borrow and collateral requirements. These facilities are associated with various risks because banks may want to borrow too little (stigma) or too much (moral hazard). Goldberg raised the issue of whether it would be possible to design the various tools so that they will be more clearly adapted for certain specific purposes.

Goldberg also highlighted the fact that non-banks do not have access to the Fed's liquidity provision and that there is a general problem with a lack of clarity as to who has the responsibility for liquidity provision to global banks. The increased significance of financial intermediaries other than banks (such as "shadow banks") raises issues, as does the fact that banks are now complex constructions with a set-up of different companies that constitute "the bank", which has parts that are not covered by the liquidity regulations. This requires authorities to increase their supervision.

Goldberg described how supervision is implemented in New York. She pointed out that stress tests of risk management practices are important. It is a question of monitoring what "organisational liquidity" looks like, that is how the bank is organised in order to prevent and be able to cope with liquidity problems, and not just how the assets in bank portfolios are distributed. The hope is that more supervision and tests will reduce banks' need for emergency liquidity assistance, regardless of whether it is due to problems that primarily affect banks themselves or a more general market shock.

4 When and how should central banks take on the role of lender of last resort?

A distinguishing feature of the financial crisis 2007-2009 was that certain banks were forced to suspend payments because they lacked liquidity. In these situations, the central bank plays an important role as lender of last resort. When the bank in distress is unable to obtain funding in any other way, it can turn to the central bank for emergency liquidity assistance.

Charles Calomiris is a professor at the Columbia Business School in New York. He argued that a central bank must make some difficult trade-offs in its role as lender of last resort. On

8 See also Bertsch and Molin (2016).

the one hand, we want to avoid a total collapse of the financial system when a major bank encounters payment difficulties. On the other hand, neither do we want to give banks in distress unconditional support as that might lead them to take greater risks. This could entail major costs for public finances in the longer term. Calomiris claimed that financial crises have become more common due in part to the fact that central banks and other authorities have been too generous in their support to banks and other financial companies facing a crisis. The precautionary principles for how the government should act, as proposed by Walter Bagehot as early as 1873, are still very relevant, said Calomiris, even though the exact regulations have to be adapted to today's more complicated financial systems.

Calomiris also said that clear laws and regulations are required for central banks to be able to act as lender of last resort in the best possible way. He considered it necessary to conclude political agreements on the regulatory framework to provide legitimacy to central banks. An explicit regulatory framework also provides more scope for politicians to demand accountability from the central bank for its actions. Further, Calomiris was of the opinion that central banks should not bear sole responsibility for being lender of last resort. Instead, certain measures should be adopted by a central bank in consultation with authorities that are more under the direct control of parliament and the government, in order to give it legitimacy. He mentioned Canada as an example of a country where regulations already exist as to what type of incident will be met with which type of measure.

Charles Goodhart is a Senior Professor at the London School of Economics and an ex-member of the Bank of England's monetary policy committee. He proposed that when a central bank considers taking on the role of lender of last resort, it shall estimate the size of the expected loss that the credit can lead to. If it exceeds a certain amount, the central bank shall require permission from the government before acting as lender of last resort. Goodhart's incentive for this is that it is not possible in advance to specify all feasible events or the nature of the crisis.

Goodhart also rejected a commonly mooted idea that central banks should lend to the market in general rather than to individual institutions in a crisis. In this way, banks on the market are expected to lend money to the bank that needs it. The problem is, however, that banks on the market will not want to lend money to a weak bank. This may even lead to a downward spiral. First, the weakest bank fails, then the next weakest and so on.

According to Goodhart, the moral hazard problem, that is, that the banks take excessive risks because they assume they will be saved by the central bank, is best counteracted by dealing most harshly with the first bank to ask for help, as this bank has probably taken the most risks. After that, the central bank must be prepared to save other banks. Another means of counteracting moral hazard is to involve other banks in the rescue action. This means that if other banks want to avoid a systemic risk, they must contribute to the costs.

Finally, Goodhart argued in favour of changing the incentives for individuals working at banks and other financial companies, in order to reduce the risk of financial crises. It should be more difficult than it is today for decision-makers who can influence the risks taken by a bank to be discharged from liability and it should be easier to demand damages from them.

5 What responsibility for price stability and economic fluctuations should a central bank have?

Ricardo Reis is a professor at the London School of Economics and Columbia University in New York. According to him, central banks have a unique role in providing a country with its means of payment and a stable and efficient payments system. It is therefore natural that they are also responsible for price stability. The responsibility for price stability in turn means that central banks also have a responsibility for stabilising the business cycle.

The other presenter in this session, Michael Woodford, is also a professor at Columbia University. He had a slightly different starting point. Woodford noted that, since the early 1990s, there has been considerable consensus on the success of central banks' starting to practice flexible inflation targeting. The Riksbank was one of the first to follow such a strategy, which involves the central bank expressing an explicit target for inflation while consciously tolerating some temporary deviations from it in order to be able to take developments in output and employment into consideration. But developments since the financial crisis have caused this strategy to be questioned. Over several years, many central banks have not managed to achieve their inflation targets. It has been discussed whether the inflation target should be supplemented by other explicit targets, above all for employment. Targets linked to economic growth (GDP) have also been proposed and analysed. It has also been discussed whether central banks should be given a clearer responsibility for financial stability.

Reis pointed out that central banks have utilised a number of new tools to achieve the flexible inflation target, including more forward guidance and quantitative easing, for example in the form of purchases of bonds on the open market. He believed that a great deal more could still be done, however. Reis also thought that the inflation target could be replaced by a price level target, to a greater extent than today and that central banks should put more focus on resource utilization (unemployment for example).

Woodford also noted that even if central banks had not managed to achieve their inflation targets, the targets had served both the central banks and the economy well on the whole. The flexible inflation target has considerable advantages as it is easy to understand and firmly anchored in many countries. It is also relevant to private individuals and makes their decision-making easier.

Woodford argued that the flexible inflation target had played a major role as an anchor for future inflation expectations. It has thereby been of considerable importance in reducing macroeconomic instability, both in connection with the crisis of 2007-2009, and later on. Unlike the 1930s depression, inflation expectations did not fall during the most recent financial crisis. But in the 1930s, expectations of low price increases and even deflation caused major problems. Nor did the sharp fluctuations in the oil price in recent years have the same negative effects as in the 1970s, when the oil price increases triggered a destructive, inflationary wage-price spiral.

Although other sub-targets, such as employment and financial stability, are important and relevant, today's flexible inflation target has advantages suggesting that its special status should be preserved, according to Michael Woodford. However, he thought that central banks should consider complementing the flexible inflation target with a target for nominal GDP growth to strengthen the link between the inflation target and general economic development.

6 How should a central bank manage links between macro stability and financial stability?

Loretta Mester is Head of the Federal Reserve Bank of Cleveland and a member of the Federal Open Market Committee (FOMC). She emphasised five points that indicate a link between the degree of financial stability in the economy and macroeconomic developments.

The first point is that the goals of monetary policy and financial stability are interconnected. Price stability promotes an efficient financial system and a stable financial system enables an effective monetary policy to be pursued. There may sometimes be a conflict between the goals, such as when expansionary monetary policy aimed at stimulating the economy can lead to excessive risk-taking, or when measures aimed at improving

financial stability can lead to lower economic growth. But Mester thought that there is no such conflict at present. The financial crisis has shown that better regulations and supervision of the financial system are needed, and this is not contrary to economic growth.

The second point highlighted by Mester is that central banks and other authorities are in the process of developing macroprudential tools that can lower the risk for, and the consequences of, financial instability. Mester believed that the structural tools, such as minimum requirements on bank capital and liquidity and stress tests, are more promising than the tools that are intended to vary over the business cycle. She pointed out, based on the situation in the United States, that it can be complicated to vary the tools over the business cycle, due partly to the fact that many authorities are involved and share the responsibility for the regulatory framework.

Mester's third point was that policymakers should take a systematic approach in applying financial stability policy rather than relying on discretion. This is a well-established approach in monetary policy. Systematic monetary policy can influence the general public's expectations in a desirable way and help maintain a long-term approach to economic policy. Mester thought that such arguments are just as important in the financial stability area, as the regulatory framework aims to influence how financial market participants behave. It is, for example, important to make it clear in advance how a central bank intends to set a countercyclical capital requirement and under what circumstances financial institutions that have problems will receive support or be resolved.

The fourth point highlighted by Mester is that macroprudential policy, similar to monetary policy – but in contrast to normal supervision of banks (microprudential policy) – should be transparent. This is important both in order to influence the expectations and behaviour of financial market participants, and so that it is possible to hold those who make decisions on economic policy measures accountable. At the same time, Mester thought that it is more difficult to communicate financial stability than monetary policy in a clear way. This is because 1) the tools of financial stability are relatively new, 2) measures must be taken before there are any clear signs of financial instability and 3) the regulatory regime is complicated. Mester considered that it could be worth exploring whether it might be possible to simplify the regulatory regime for macro- and microprudential policy.

Mester's fifth and final point was that financial stability should not be added as another goal for monetary policy but that monetary policymakers must constantly consider the linkages between financial stability and monetary policy goals. The first line of defence against financial instability is, according to Mester, structural tools, such as capital requirements and liquidity standards. As it is uncertain how effective countercyclical tools can be, structural requirements should be set somewhat higher than we otherwise would have done, Mester said. But if macroprudential tools proved to be inadequate and financial stability risks continue to grow, monetary policy measures could then become relevant.

Isabel Schnabel is a professor at the University of Bonn. She began by noting that central banks, regardless of their mandate, must take financial stability into account. One of the reasons for this is that the degree of financial stability affects the impact monetary policy has on the economy (the transmission mechanism). The issue is not therefore whether central banks should take financial stability into account but rather how they should do so.

Schnabel outlined three areas where central banks can contribute to financial stability. The first is that central banks may need to act as lenders of last resort in a financial crisis, something which is largely uncontroversial. There is, however, a discussion on the principles that should apply to this, and under certain circumstances, this role may come into conflict with monetary policy objectives. The second area concerns whether financial stability should be a monetary policy objective. The third area concerns the role of central banks as prudential supervisors. The last two areas are more controversial, according to Schnabel.

As regards monetary policy, Schnabel presented a brief discussion on "lean versus clean", that is whether central banks should be content with cleaning up the mess after some kind of

asset price bubble has burst, or whether they should try to prevent such bubbles emerging by using monetary policy to "lean against the wind". Arguments are often put forward for both approaches. Schnabel summarised an empirical study of 23 asset price booms over the last four hundred years that she has conducted with Marcus Brunnermeier, and what the study said about this. She noted that historical experiences suggest that just "cleaning up the mess" afterwards is unlikely to be optimal. Macroprudential measures can be used to prevent bubbles, but monetary policy measures are needed as a complement.

Schnabel also reviewed what empirical research has to say regarding the role of central banks as prudential supervisors. There has long been a debate on whether monetary policy and banking supervision should be managed within the same authority or in separate authorities. But the issue cannot be resolved without empirical research in the field, said Schnabel. Here conclusions are that experience suggests that close cooperation and information exchange among central banks and supervisors is useful. According to her, it improves both monetary policy and financial stability. The effects of giving the central bank the responsibility for supervision are less beneficial. This could lead to the central bank finding it more difficult to achieve its monetary policy goals, while the consequences for financial stability can be both positive and negative.

Charles Goodhart made two presentations at the Riksbank conference, one on the central bank's responsibility for acting as lender of last resort (see above) and one as part of the panel discussion (see below). But his contribution to this conference volume comprises a third paper, which he wrote together with Elga Bartsch and Jonathan Ashworth from Morgan Stanley. (Goodhart works as a consultant for Morgan Stanley.) Goodhart, Bartsch and Ashworth (GBA) discuss an issue touched upon in both Mester's and Schnabel's contributions, as in several others: the monetary policy transmission mechanism, i.e. the channels through which monetary policy measures affect inflation, employment and so on.

According to GBA, a great deal of monetary policy analysis is based on a simplified assumption that there is a direct connection between central bank interest rate decisions and the real economy. One does not then consider that monetary policy works via the banking system. It may seem surprising that the very low policy rates and the expansion of central banks' balance sheets, which occurred when they, for example, purchased government and housing bonds, have not had more positive effects on the economy. But the situation in the banking system can explain this, according to GBA. Generally low interest rates, small deviations between short and long rates (flat yield curve) and major uncertainty have led to the banking system preferring to hold large liquidity reserves at the central bank. The traditional multiplier effect of central banks' securities purchases on money supply and credit creation, which could have been expected, has therefore diminished.

GBA refer to measures taken by the Bank of England (Funding for Lending) and Banco d'España (Dynamic Pre-Provisioning) to create more positive effects on bank lending. At the same time, they see a risk when so much bank lending is channelled to households and real estate rather than to business. The nexus between the banks' credit expansion, the financial cycle and housing booms needs to be broken, according to GBA.

For the monetary policy transmission to work, capital and good profits are needed in the banking sector, say GBA. If transmission mechanisms don't work properly, monetary policy risks running out of ammunition and further stimulus would instead have to be provided by fiscal policy, if need be.

7 What are the links between monetary policy and fiscal policy?

According to Isabel Correia, Head of Economics Department at Banco de Portugal and professor at Catolica Lisbon SBE, the financial crisis has put us in a situation where there

is not much room left for stimulating the economy via traditional monetary and fiscal policies. Interest rates are close to zero or negative and public debt has increased. The focus has therefore shifted towards more unconventional monetary policy measures, such as quantitative easing, that is, the central bank purchasing securities. A problem with these is that they may expand central bank's balance sheets with high-risk assets.

Correia noted that monetary policy has had to bear too large a burden for stabilising economies after the financial crisis, and that unconventional fiscal policy should take greater responsibility.[9] Taxes can be used to stimulate the economy in similar ways to how interest rates are normally used. She argued for a different mix of fiscal policies to stimulate activity in economies struggling to increase growth, without this causing major budget deficits and hence needing to be funded by higher taxes or reduced expenditure later on.

Isabel Correia also raised the issue of which criteria to use to evaluate unconventional monetary and fiscal policies. One way of measuring the effects of policies is to introduce welfare as one of the criteria. This may sound obvious, but it means that the policies are not just used for stabilisation purposes, that is to reduce fluctuations in output and employment. We may even be prepared to accept greater volatility under certain circumstances if it is good for the development of public welfare over time. In other words, it may be time to reassess how economic policy is conducted and evaluated, and not just in the monetary policy area.

Pierpaolo Benigno is a professor at LUISS Guido Carli and the EIEF. He analysed the links between fiscal policy and the purchase by many central banks of government bonds after the financial crisis, known as quantitative easing (QE). One of his points was that the effects of QE may be overestimated if we don't take the fiscal policy implications into account. Benigno argued that QE can have a negative wealth effect on the private sector if the central bank makes losses that are covered by the treasury via higher taxes. For QE to have the desired effect, the measures therefore need to be backed up by a fiscal policy that does not include tax increases. This requires some coordination of monetary and fiscal policies.

There has also been an international debate on whether QE should be used even when the financial conditions in the global economy have normalised. Benigno argued that QE, despite its possible limitations that he had demonstrated, can be a useful tool under the current special economic circumstances. On the other hand, he thought that this is not enough to justify using QE as a monetary policy tool after the situation has normalised.

8 How should a central bank be governed?

David Archer is an economist at the Bank for International Settlements. He said that many central banks may be heading for a legitimacy crisis as their objectives have become less clear. One reason for this is that the powers of central banks have increased, especially regarding financial stability.

According to Archer, it is inevitable for central bank mandates to change over time. It may be difficult, however, to increase the mandate just now as trust in politics and political institutions is falling in many countries.

Moreover, the low interest rates mean that central banks' profits will decline drastically in many countries and they will therefore become less financially independent.

However, the fact that mandates are changing does not mean, according to Archer, that the central banks are necessarily heading into areas where they have no place. Central banks have had a key role in stable and reliable payments systems ever since they were first created.

Four-fifths of the world's central banks also have objectives that concern financial

9 Eric Leeper also argued that fiscal policy needs to support monetary policy in order to stabilise inflation and the price level around the desired target. See the summary of his contribution to the panel discussion below and his article "Why central banks should care about fiscal rules".

stability, but they often only refer to the payment systems and bank supervision. They are consequently more limited than the set of possible objectives we are currently discussing. Furthermore, the objectives are often formulated so that they appear to be subordinate to the objective of price stability.

According to Archer, the problem with the new objectives concerning financial stability now being discussed is that they are unclear. It is difficult to define what is meant by financial stability, what is good or bad credit growth, and how much stability should be sought. If such objectives for central banks are added, there is a risk that central banks will be perceived to have failed to reach their objectives. They would then also lose legitimacy.

John B. Taylor, a professor at Stanford University, also said that the objectives are of major importance if central banks are to be able to continue to operate with a high degree of independence. Today's limited price stability targets, and in certain cases also employment targets, are of very considerable value. If the central banks' mandate is widened, support for them to be independent will weaken.

Taylor also pointed out the major shifts to and from rules-based central bank policies that have occurred historically. His opinion was that the central banks' objectives should not be widened but deepened. Central banks need to communicate a strategy for how they shall reach existing objectives, and make it clearer which regulatory actions they use to achieve them. If this is done in many countries, it may in turn lead to international agreements on how the international monetary system with its large flows of capital and currencies is to work.

Bearing in mind the large number of calls for reforming central banks, Taylor also believed that it is a good time to start introducing more rules-based policies. He felt that some of the increased uncertainty in the economy emanates from the uncertainty surrounding how central banks are to act.

9 Panel discussion: How should central banks be designed?

Patricia Mosser[10] put forward a number of recommendations on how central bank policy can be improved, against the backdrop of her view of the experience gained by the United States from the financial crisis – "Do's and Don'ts in Central Bank Design". Mosser began by noting that the responsibility of central banks for financial stability is a complex issue, as it is linked to both monetary and fiscal policies as well as to regulations.

Mosser's first recommendation was that the central bank's task as lender of last resort should not be limited to only a few counterparties. This does not work when monetary policy channels used to influence the economy (transmission mechanisms) are seriously disrupted. For example, central banks should be prepared to provide liquidity support to foreign banks as well. On the other hand, according to Mosser, the central bank should not establish new rules for liquidity support or other lending and deposit options it offers in the midst of a bank run. For example, it should not change the requirements for collateral for the loans it issues. This can contribute to greater uncertainty and financial instability.

Mosser also thought that central banks should not in advance exclude any tools which they have a legal right to use, for example swap agreements with other central banks. It is also important to be aware of the fuzziness of the boundary between central bank policy and fiscal policy. An example of this is the difficulty in determining whether a bank only needs emergency liquidity assistance because it has liquidity problems or whether it is also

10 Patricia Mosser is Senior Research Scholar at the School of International and Public Affairs, Columbia University. She has previously worked at the US Treasury in Washington and at the Federal Reserve Bank of New York.

a question of a solvency problem which may involve the state having to inject tax revenue. To assess this, central banks must make assumptions about what the effects will be of the integrated economic policy, as it can affect the bank's situation.

As Alan Blinder had done, Mosser also pointed out the importance of central banks keeping track of the risks present in the payments systems – their role as "plumber". For partly this reason, central banks, according to Mosser, need access to more and better data than they have today, for example on shadow banks and how dependent banks are on short-term funding and the risks this poses. Mosser felt that an upgrade and increased international cooperation are needed regarding data collection. Continuous oversight and risk analysis are, according to Mosser, just as important for central banks as the more standard tasks they perform within the areas of macro-modelling and analysis.

Svein Gjedrem took as his starting point four criteria for a good institutional framework as presented by Mervyn King:[11]

1. Clear objectives
2. Tools and competence to meet these objectives
3. Accountability
4. A design that reflects history and experience

Gjedrem started by giving some examples of the significance of history and experience. Norges Bank has had a more uneven path towards greater independence than Sveriges Riksbank, as Norges Bank comes under the government and not directly under parliament, as is the case with the Riksbank in Sweden. In Norway, ministers are also entitled to give direct instructions to authorities, in contrast to how the regulations are stipulated in Sweden. Gjedrem said that there is probably no single best solution to how central bank regulations should be formulated.

As regards the objectives of central banks, Gjedrem noted that central banks have throughout history been tasked with maintaining an efficient monetary and financial system. Monetary policy should also stabilise output and employment. But exactly how these objectives should be stipulated and ranked is not clear. While monetary policy objectives develop over time, it has been more difficult to specify the objectives for the stability of the financial system. As Loretta Mester had done earlier, Gjedrem stressed that the various objectives of central banks are intimately intertwined. He also said that central banks cannot shirk their responsibility if a debt and property bubble emerges which leads to a financial crisis. This is one reason why central banks should have an explicit responsibility for financial stability by law.

As regards the tools and competence of central banks, Gjedrem said that in a situation where interest rates are low or even negative, monetary policy is not necessarily sufficient to be able to achieve price stability. Stability and confidence in public finances and the financial system are also needed. Gjedrem mentioned, by way of example, that the capital requirements imposed on banks are, in his opinion, not high enough to create such stability. It should fall within the central bank's remit, according to Gjedrem, to point out such shortcomings, even when other authorities have the responsibility and the tools to rectify them.

As regards how the political system should hold central banks accountable, Gjedrem said, in conclusion that there may be a tradeoff to consider in relation to their independence. While mechanisms for accountability are needed to maintain a central bank's independence, that very independence also limits the scope for accountability. Transparency on the part of the central bank can facilitate this tradeoff, as would be the case if the political system set

11 Svein Gjedrem was Governor of Norges Bank between 1999 and 2010. He now works part-time (Professor II) at the Norwegian School of Economics in Bergen, and is chair of a commission that is to draw up a new legislative proposal for Norges Bank. Mervyn King was the Governor of the Bank of England between 2003 and 2013 and is currently a professor at the London School of Economics and at New York University.

the central bank's objectives. The central bank can then have a high degree of independence to perform its tasks even though it did not set its own objectives (independent regarding its instruments but not its objectives). Gjedrem's overall conclusion was that a good institutional and political framework is required for central banks so that they can perform their tasks in the best way.

Charles Goodhart's contribution to the panel discussion was based on a paper he presented at an earlier conference (Goodhart, 2016) and is therefore not published in this conference volume. Similar to Jon Faust, Goodhart performed a review of central banks' development over the course of history and noted that periods of consensus about their roles had been followed by crises and increased uncertainty, whereupon a new period of relatively broad consensus emerged. Prior to the last financial crisis, for example, everyone agreed that price stability and capital requirements would guarantee that banks would remain solvent. The idea was that this would then prevent them from encountering liquidity problems. The belief was that maturity mismatches between banks' assets and liabilities would not be a problem. After the crisis, there was widespread uncertainty regarding how the banking system should be regulated. One reason for this is technical developments, which constantly change the nature of banking services and operations, Goodhart echoed Loretta Mester in saying that macroprudential policy should be the first line of defence against systemic risk, before monetary policy measures are considered. At the same time, flaws in the banking system mean that monetary policy has become less effective and found it difficult to achieve its objectives (see the paper by Goodhart, Bartsch and Ashworth). The financial crisis has also led to a broadening of the focus of central bank operations to include not only price stability but also financial stability. They have also utilised more of the tools in their toolbox than usual. The changes have, according to Goodhart, affected the confidence in central banks and risk having an impact on their independence.

Eric Leeper's contribution to the panel focused on the interaction between monetary and fiscal policies. Leeper began by noting that financial crises often had far-reaching consequences. After the financial crisis in the early 1990s, Sweden adopted far-reaching fiscal reforms starting in 1993 and also established the principle that the Riksbank was to have a higher degree of independence and an inflation target. There was broad political support for exiting a regime of high and volatile inflation and inadequate fiscal policy discipline. Even though the details of Swedish fiscal policy framework have developed since then, the fundamental principles are still in place. Sweden has a net borrowing target and plans to aim for a "debt anchor" as from 2019.

Fiscal policy objectives focus on ensuring that fiscal policy is "sustainable". While sustainability is necessary, Leeper regretted the fact that the fiscal rules adopted in practice have come to take "sustainability" to mean single-minded fiscal austerity. The rules reflect the principle that a low public debt is a good liability, with little regard for how fiscal policy must work to enable monetary policy to successfully stabilise inflation or what role a secure public debt plays in the financial system.

Leeper argued that fiscal policy rules are designed to solve a political problem, for example tendencies towards excessive budget deficit. But instead, they risk creating an economic problem and the remedy could be worse than the illness if it undermines the ability of monetary policy to control inflation. The rules established in the early 1990s are not designed for the present-day situation of healthy public finances and low inflation. They were developed to deal with an entirely different situation of budget deficits and high inflation. A review is therefore needed of fiscal and monetary policy objectives to ensure that both policy areas are able to achieve their own goals jointly.

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Appendix – Program for the Riksbank's conference on "Rethinking the central bank's mandate" Stockholm, June 3-4, 2016

Friday, June 3:

9.00-9.15	Opening remarks: Stefan Ingves (Sveriges Riksbank)
9.15-10.45	**Session 1. (Why) Are central banks necessary?** Alan Blinder (Princeton University) Jon Faust (Johns Hopkins University) Chair: Cecilia Skingsley (Sveriges Riksbank)
11.15-12.45	**Session 2. The central bank's role as a provider of liquidity** Franklin Allen (Imperial College London) Linda Goldberg (Federal Reserve Bank of New York) Chair: Meredith Beechey (Sveriges Riksbank)
13.45-15.15	**Session 3. The role as a lender of last resort** Charles Calomiris (Columbia Business School) Charles Goodhart (London School of Economics) Chair: Tore Ellingsen (Stockholm School of Economics)
15.45-17.15	**Session 4: The central bank's responsibility for price and macro stability** Ricardo Reis (Columbia University) Michael Woodford (Columbia University) Chair: Jon Faust (Johns Hopkins University)

Saturday, June 4:

9.00-10.30	**Session 5: Links between macro stability and financial stability** Loretta Mester (Federal Reserve Bank of Cleveland) Isabel Schnabel (University of Bonn) Chair: Eric Leeper (Indiana University)
11.00-12.30	**Session 6: Links between central banking and fiscal policy** Isabel Correia (Banco de Portugal) Pierpaolo Benigno (LUISS Guido Carli) Chair: Peter Englund (Stockholm School of Economics)
13.30-15.00	**Session 7: Governance issues** David Archer (Bank for International Settlements) John Taylor (Standford University) Chair: Torsten Persson (IIES, Stockholm University)
15.30-17.00	**Panel discussion: How should central banks be designed?** Svein Gjedrem (Ministry of Finance, Norway; Norwegian School of Economics) Charles Goodhart (London School of Economics) Eric Leeper (Indiana University) Patricia Mosser (Columbia University) Chair: Anders Vredin (Sveriges Riksbank)

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