SPEECH

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Time to rethink – Inside the head of a central bank governor*

New challenges – new choices

The Riksbank is – like other central banks – in a position where strategies and regulatory frameworks are being scrutinised and questioned more intensively than at any time over the past twenty years. The experiences of the latest financial crisis suggest politicians and central bank economists must be prepared to try new approaches. Today, I intend to discuss the challenges and questions facing central banks the world over.

How should monetary policy be conducted? What consideration should be given to real and financial variables, in addition to the inflation target? What role should central banks have as regards financial stability and supervision? How is this role changing as a result of new innovations in payments and in the financial system more generally? What factors affect how independent central banks should be and how political oversight and influence should be exercised?

Many central banks the world over are facing a similar set of problems. This is partly due to globalisation, not least financial globalisation. It affects the scope of countries and thereby of central banks to conduct their own economic policy based on national prerequisites. Sweden is a small, open economy with a large financial sector. The room for manoeuvre in economic policy regarding both monetary policy and financial stability is, in my opinion, much less than it was for, say, 15-20 years ago. According to the textbooks, with a floating exchange rate, we should be able to conduct an independent monetary policy. And we can, but to what extent? Today's low inflation is, for example, very much a global phenomenon.

Stability in the financial system is also affected by financial globalisation. As a consequence of the ever-stronger links between different countries' financial systems, regulatory frameworks are also increasingly often formulated outside national borders. The strengthening of global financial regulatory frameworks is, of course, also a result of the financial crisis which broke out in 2008 – and the after-effects of which the global economy is still struggling with.

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I would, however, like to stress that in Sweden we coped relatively well with the financial crisis and its aftermath. We had robust frameworks and the power to act, as regards both fiscal policy and monetary policy. We also had enough flexibility to be able to cope with the Swedish banking system's need for liquidity and assist other countries in our vicinity in order to help stabilise the financial system. Economic development in Sweden has been favourable in many ways. The economy grew by over 4 per cent last year. The situation on the labour market continues to improve and unemployment is falling. Inflation has also begun to rise, albeit from low levels. The very expansionary monetary policy in recent years has contributed to this healthy development. However, risks have built up in the Swedish economy –financial imbalances – such as the growth of household debt.

As regards monetary policy, my conclusions are that our policy of flexible inflation targeting has largely worked well. New experiences and research suggest that there are a few things that we should perhaps modify in order for it all to work even better. I will go into more detail about the things I am referring to.

As regards financial stability, a much more major rethink is required. In Sweden, there are major flaws with vague mandates, unclear processes and inefficiency in the work to create a more robust financial system, all of which threaten financial stability in the long run. Issues concerning both monetary policy and financial stability have been and remain the cornerstones of central bank operations.

To explain this, and at the same time describe the extent of the challenges facing central banks today, I would like to begin my presentation with what historically has been the basic function of central banks, namely to provide a country with a standardised product for the exchange of goods and services – money. Indeed, financial globalisation and digitalisation are also challenging the perception that central banks have a monopoly on the issuing of means of payment.

The Riksbank's responsibility for cash management has changed

By law, the Riksbank shall supply the country with banknotes and coins and has the exclusive right to issue them. The law also states that these banknotes and coins are legal tender. Giving central banks a monopoly on the issuing of banknotes and coins, along with a certain degree of autonomy, has been seen as an effective and credible way of managing the supply of means of payment.

Payment trends have a long history. From bartering and the first silver coins in Sweden in 995, to the first standardised and collective means of payment in the form of transport bills, which were introduced during the 17th century. Besides cash being much more modern today than when the Riksbank was founded almost 350 years ago, we also have access to several different electronic payment options.

The Riksbank' responsibility for means of payment has been adapted over time as needs have changed. At one point, the Riksbank had over 20 offices around the country, basically one in every county, where banks often deposited and withdrew cash. For a period, the Riksbank also accepted daily takings directly from companies. The Riksbank counted, performed quality checks, invalidated and stored cash. Over time, the Riksbank has rationalised and adapted its cash provision. Today, it is banks and other private entities who are responsible for the distribution of cash. The Riksbank's banknote and coin operations are centralised to an ultra-modern office north of Stockholm.

And the Riksbank's role continues to change. An inquiry has proposed that the Riksbank should be given an overarching responsibility for monitoring and analysing cash management.[1] The Riksbank is prepared to take on this responsibility as it falls quite naturally within our remit as a central bank. The inquiry has also proposed that cash processing companies, such as Loomis and Nokas, should come under the supervision of the Riksbank. It is important for someone to exercise supervision over these operations and companies. I am doubtful whether the Riksbank is the authority best suited for this task, although that is of course a matter for the Riksdag to decide.

Should the Riksbank issue electronic money?

But developments have not just been a matter of reorganising the more operational side of cash management. Technical developments, globalisation and innovations on the financial markets also challenge the perception that it is necessary for the central bank to have a monopoly on issuing cash to ensure a safe and efficient payment system. Banknotes and coins have long since faced competition from other means of payment, especially different types of accounts with their related payment services offered by banks and other financial institutions. Today, payments are made electronically to a large extent; both households and companies, for example, pay invoices and transfer money online or by mobile phone. And in recent years, virtual currencies such as Bitcoin have been introduced. What responsibility central banks should have for the security and efficiency of electronic means of payment needs to be more closely examined.

The overarching question is whether it is important for there to be a "state means of payment" in order to maintain confidence in the payment system. If the answer is yes, we need to ask ourselves whether the issuing of private means of payment should be restricted or regulated more than it is today. Or should there perhaps be access to electronic Riksbank cash in the future? This is an example of very interesting questions that require new ways of thinking as well as considerable research.[2]

Risk of over-confidence in market mechanisms

Payment innovations are intrinsically positive and good for society. They give us faster and more easily accessible payment methods that simplify our daily lives and contribute to continued growth. But there are also risks associated with them. It is in society's interests that everyone can make payments in a simple and standardised way A report into the subject, on whether the right to payment accounts should be incorporated into Swedish law, was recently circulated for consultation.[3] The directive says that all those who live within the EU's borders shall have access to a bank account with basic payment features. It talks in particular about the possibility of withdrawing and depositing cash and of course of making payments, both in person and online. At the Riksbank, we

[1] See SOU 2014:61.
[2] Other central banks are also considering these questions. See Broadbent (2016).
[3] Fi 2015:02. Access to payment accounts with basic functions," Interim report 2 from the 2015 Payment Services Inquiry.

consider there to be a risk of over-confidence in the market taking its responsibility for cash supply, both now and in the future. In our consultation response, we therefore propose that the market's responsibility for giving customers access to a payment account and related cash services be regulated more clearly; or that the law include an option for the state to intervene if the market fails, regarding both cash and electronic payments. Despite everything, there is still a long time to go before Sweden becomes a cashless society. There is still SEK 73 billion in circulation in the form of 317 million banknotes and 1.9 billion coins - a significant sum of money.

The Swedish payment system RIX will change

But the Riksbank's role as regards payments is not just limited to ensuring the availability of cash. The Riksbank's system for payments between banks and a number of other financial institutions – the RIX system – is the hub of the Swedish payment system. All payment transactions between banks, clearing organisations and the National Debt Office pass through RIX.[4] This makes it an important part of the Swedish financial infrastructure with a daily turnover of about SEK 450 billion divided among over 15,000 payments. The development of payment services makes adjustments of the RIX system necessary. An example is the development of payments in real time using, for example, the Swish mobile phone app. Here at Riksbanken, we have made it possible for the payment service to work even when the RIX system is closed by allowing a small amount of central bank money, in the form of a loan, to be outstanding during the night.

Which financial institutions are participants in RIX is affected by developments on the financial markets. In a Nordic comparison, Sweden has so far had relatively few participants as members in the system and a situation where four participants are responsible for 80 per cent of the turnover. This is now changing and the Riksbank will have to consider smaller and perhaps entirely new participants who also wish to manage their payments to and from the banks, and between themselves, via RIX. For example, Forex Bank and JAK Medlemsbank will soon participate in RIX. To maintain healthy competition and efficiency in the financial system, it is important that the Riksbank treats everyone equally, although it is also important to have a safe and secure payment system.

As a result of the Riksbank's responsibility for RIX, a government enquiry from 2011 proposed that the Riksbank should be given the responsibility for coordinating crisis preparedness in the payment system via a new law. [5] This proposal has yet to be realised. Parts of the inquiry's proposal were nevertheless implemented voluntarily but we consider that this coordination responsibility should be made statutory and provide the possibility to place binding requirements on the payment system's participants. No authority currently has such a responsibility and neither is there an authority responsible for producing an overall risk and vulnerability analysis.

[4] For a description of the RIX system, see http://www.riksbank.se/sv/Finansiell-stabilitet/Betalningssystemet-RIX.
[5] See SOU 2011:78.

Ability to create unlimited liquidity in SEK

Among the Riksbank's many tasks is the important role of providing liquidity in the event of a crisis. There are certainly good reasons to believe that the function of banks in society – facilitate payments, mediate credit, enable risk diversification – is more efficient as a result of competition among private players rather than being run by the state. But banking operations also have an inherent vulnerability. The banks' funding is based to a considerable degree on short-term loans, for example deposits from the general public and short-term borrowing on the capital market. Their assets, on the other hand, often comprises lending of a more long-term nature. This mismatch in maturity and liquidity between debts and assets is typical for traditional banking operations and does not constitute a major problem as long as confidence is maintained in the banks' debt-servicing ability. But if doubts arise, depositors may quickly try to withdraw their money – money that the bank cannot obtain in the short run. This causes a liquidity problem. This type of inherent risk is the reason why there are special rules for banks, supervision and, for example, a deposit guarantee protecting depositors against losses.

Furthermore, a central bank can mitigate the effects of such a crisis by ensuring that there is money available when no one else wants to lend. This function as lender of last resort is based on the central bank's unique ability to create unlimited amounts of liquid funds in its own currency. [6] According to the classic doctrine, the central bank can give generous emergency liquidity assistance (ELA) at a high rate of interest and against good collateral.[7]

The ability of central banks to act as lender of last resort has had major significance in many financial crises, and was particularly important during the financial crisis of 2007-2009. This crisis led to a number of financial institutions encountering difficulties which ultimately caused the global financial markets to stop functioning. The shortage of liquid funds and credit threatened the entire global economy. Central banks around the world were forced to take extensive measures to handle the situation. These measures included loans in various currencies and the purchase of large volumes of government securities, as well as other assets. Several of them were also used during the subsequent sovereign debt crisis in the euro area. Sweden was also affected and the Riksbank decided to provide liquidity to Swedish institutions. The Riksbank's balance sheet exploded, from SEK 212 billion at the end of 2007 to, at its peak, SEK 763 billion in the summer of 2009. In my opinion, the measures have overall been necessary due to the extraordinary circumstances. They have, however, created major challenges which central banks must now come to grips with.

Central bank support can increase risk-taking

Society's safety net, in the form of measures such as giving banks ELA, means that we can counteract the risk of problems in one bank developing into a widespread systemic crisis. The Lender of last resort function could therefore be seen as a form of insurance. But just like all other types of insurance, this one can also have a negative impact on the beneficiaries' risk behaviour if there isn't a sufficient level of excess in the system. There has been an obvious risk of the expansion of the safety net that occurred during the crisis leading to great-

[6] See Goodhart (1988) and Capie et al. (1994).
[7] See Irwin (2013).

er risk-taking and thereby increasing the probability of the safety net needing to be used in the future.

To counteract this, it has been necessary to increase both the excess and resilience in the financial system. As a result, a new crisis management framework has been introduced, the aim of which is to force the banks' shareowners and creditors – excluding, I would clearly like to point out, those depositors protected by the deposit guarantee – to take a greater responsibility for losses in the event of a default. Furthermore, the requirements regarding the banks' capital and liquidity buffers have been tightened. In my opinion, these requirements can be even clearer and adapted to the conditions prevailing in the specific banking system. Bearing in mind the dependence of Swedish banks on funding on international capital markets and extensive foreign operations, the requirements regarding banks' liquidity buffers – sometimes referred to as Liquidity Coverage Ratios – or LCRs – should be expressed in relevant currencies, including Swedish kronor.[8] It is also important to have high capital requirements.

Lender of last resort for an increasing number of players

Traditionally, systemic risks have been primarily associated with large banks. But developments in the financial sector have made it more difficult to assess where the systemic risks are. This is due to structural changes as a result of both new regulations and financial innovations. In both the Swedish 1990s crisis and the global financial crisis, a grey credit market and a shadow banking sector emerged that evaded the supervision of the authorities and to an extent took over the activities of traditional banks. The risks that were built up in the unregulated sector formed the basis of the system-wide crises that subsequently broke out.[9] It is therefore important that supervision and regulation keep up with and are adapted to developments and structural changes that occur in the financial sector. Central banks may also from time to time review their guidelines and arrangements for liquidity assistance so that they are sufficiently flexible in order to meet new requirements. There may, for example, be reason to consider the forms in which types of companies other than banks might also be eligible for liquidity support.

One such type of player is so-called central counterparties. A central counterparty (CCP) acts as a counterparty to the buyer and seller in a security transaction, thereby assuming all counterparty risk. In order to reduce systemic risks globally, authorities around the world have encouraged the use of central counterparties in transactions with standardised OTC derivatives – such as interest rate swaps. The idea is that this will increase resilience in the financial system in the event of a bank failing. Now that central counterparties are increasingly used, it also means that some of the risk individual banks previously had in relation to each other is instead concentrated to central counterparties, which makes these players extremely systemically important. We are therefore now faced with the question of whether they should also be given the opportunity to borrow money from the central bank to a greater extent than currently is the case.

[8] An LCR amounting to 100 per cent means that the banks have assets that can be quickly and safely used for payments – in order to cover their cash outflows during a 30-day-long stress scenario.
[9] For an early study of the emergence of the unregulated credit market, see Ingves (1982).

ELA from central banks may therefore come into question for a more complex set of players in the future. Where we draw the line regarding the type of institution that can obtain ELA and what conditions should hence apply are obviously questions that central banks now face. If, for example, central banks are in practice willing to give loans to institutions that are *not* covered by the previously mentioned regulations, do we not then encourage the emergence of new types of shadow banks and new risks?

Increased need for foreign currency in the event of a crisis

Widespread globalisation also means that many banks have substantial exposures in foreign currencies, currencies which the national central bank cannot create itself.[10] This is particularly relevant for Sweden, which has a very internationally active banking sector. When liquidity on the dollar markets slowed towards the end of 2007, swap agreements were established between the Federal Reserve and other central banks, including the Riksbank.[11] As a result of this arrangement and by pledging its foreign currency reserve, the Riksbank could lend a total of approximately SEK 200 billion in US dollars. Conversely, swap agreements were also established between the Riksbank and two of the Baltic central banks.[12]

These experiences indicate that, in the future, even tougher requirements will be placed on international cooperation between central banks. How should we organise this in the best way? Can we expect other countries' central banks to always be able to assist with currency in a crisis situation or must special agreements be drawn up? The development also raises the issue of whether an international 'lender of last resort' is needed.[13] These questions are particularly important for Sweden, which has its own small currency. And they will become even more relevant if the major Swedish bank Nordea carries out its plan to change from a subsidiary to a branch structure. With the current subsidiary structure, the central banks in the countries where Nordea has subsidiaries are responsible for providing ELA to them. After the transformation into a branch structure, the Riksbank will take on the main responsibility for providing ELA, should it be needed. This means that the Riksbank will have a greater need of being able to obtain foreign currency in a crisis situation. Even if swap agreements can be concluded proactively, which is not at all certain, there are no guarantees that they can automatically be used in the event of a crisis or when we consider it necessary to do so. It is the creditor who decides whether it wishes to lend in each specific situation.

The Riksbank has a responsibility for financial stability…

The measures and phenomena I have now spoken of have led to banks always turning to the central bank in difficult times. Regardless of where the supervision is formally located, central banks therefore exercise some de facto supervision of banks. Everyone knows that "the central bank is where the money is" and that it is not willing to lend it to just anyone. For us at the Riksbank to be able to fulfil our role as liquidity provider, we must have good access to information on financial institutions and markets.

[10] See Buiter (2008).
[11] See Fleming and Klagge (2010).
[12] See Molin (2009).
[13] See Capie (1998), Cechetti (2014).

The fact that the banks have been subject to regular analysis by the Riksbank – both before and after the deregulation of the financial markets in the 1980s – is a natural consequence of their central role in the payment system and the special systemic risks with which their operations are associated. The need for analysis changes over time, however, and developments on the financial markets mean that the central banks' analyses must now cover more than just banks.

It is a question of analysing central counterparties, insurance companies, shadow banks, asset prices, risk premiums, different markets or different phenomena (market liquidity risk, high-frequency trading, block chain technology, etc.) in the financial system. It is important that central banks continuously "scan" the financial market and keep track of risks and vulnerabilities in different places, all the time focusing on the system risk perspective. To ensure this, it is vital that we can independently request all the information we consider necessary to be able to perform our analyses. Not least the ability to provide ELA in an effective manner – and simultaneously limit the risks to the state, by only giving assistance to institutions that have liquidity problems but otherwise are healthy – requires good access to information. It is the Riksbank's and ultimately the state's funds that are at stake here and it can be a question of very large amounts.

...and it needs to be clarified

The Riksbank's task of promoting financial stability, not least via its responsibility for the RIX payment system and our role as lender of last resort, requires analysis of risks and vulnerabilities in the financial system. This also provides us with the right conditions to be able to identify feasible measures in order to manage the risks. The Riksbank shares the responsibility for preventing financial crises with the Government and other authorities, in particular Finansinspektionen and the Swedish National Debt Office.

The Riksbank's responsibility in this area is expressed in the legislation as the task of "promoting a safe and efficient payments system". More specific details are not given. Goodfriend and King discussed this issue in their evaluation of the Riksbank that was presented at the beginning of this year.[14] In their opinion, the Riksbank's mandate should include financial stability and this should be clarified in the Sveriges Riksbank Act. I agree and welcome a discussion on how the responsibility should be formulated. An important question is what formal role the Riksbank should have as regards preventive work aimed at reducing risks and vulnerabilities in the financial system, including within the policy area of macroprudential policy, which focuses on preventing and mitigating systemic risks.

Identifying systemic risks is nothing new in the world of central banking. What is new is the emergence of macroprudential policy as a policy area. This means that, in addition to the task of identifying systemic risks, clear mandates must also be defined for those who are to be responsible for macroprudential policy. In addition, a tool-box of different measures that can be taken to reduce systemic risks must also be developed. Neither are many of the tools and measures currently being discussed entirely new, but were already in central bank arsenals prior to the major wave of deregulations during the 1980s.

[14] See Goodfriend and King (2016).

Flaws in the Swedish macroprudential policy framework

In Sweden, Finansinspektionen has been given the main responsibility for macroprudential policy. In addition, there is a financial stability council – consisting of representatives of the Government, Finansinspektionen, the National Debt Office and the Riksbank – which is a forum for the discussion of financial stability issues. I believe that there are significant flaws in several aspects of the Swedish framework for macroprudential policy.

Firstly, experiences so far of the Swedish framework indicate clear *inadequacies in decision-making power*. An obvious example is the protracted discussions on the introduction of a binding amortisation requirement. An important cause of the problem is that the macroprudential policy objective is unclear and too narrow. For example, it should be made clear that macroprudential policy instruments may be used not just to manage risks to financial stability, but also to reduce risks created by the financial sector in the real economy. It must also be clear that macroprudential policy includes the entire financial system and not just the credit market. A clarified and broadened objective is also appropriate in order to bring Sweden's framework in line with European standards.[15] There is also a lack of clear and expeditious procedures when new macroprudential policy tools are to be introduced. Improvements are urgently needed here so that we can tackle risks in good time and such procedures have also been recommended by the EU's macroprudential policy body, the European Systemic Risk Board (ESRB).[16]

Secondly, the Swedish structure falls short also *when it comes* to *clarity in the division of responsibilities*. Via its instruction, Finansinspektionen was given the responsibility to "take measures to counteract financial imbalances with the aim of stabilising the credit market". No definition of what Finansinspektionen's overall macroprudential policy task comprises has been formulated, however. This problem is highlighted by the decision process for the upcoming amortisation requirement. The Government has indeed tasked Finansinspektionen to produce regulations that more closely define the amortisation requirement but at the same time requires these regulations to be approved by the Government before Finansinspektionen adopts them. This is *not* in line with the ESRB's recommendation that the macroprudential authority should as a minimum be operationally independent from political bodies.[17] The importance of independence when adopting macroprudential policy measures is also underscored by Goodfriend and King. This is, if anything, a return to the arrangement that often prevailed prior to the deregulations of the 1980s.

A third problem with the Swedish macroprudential policy framework is that it has not been established by law. Finansinspektionen's mandate in the macroprudential policy area is only a government ordinance and the Stability Council is formally only a committee. This is unfortunate as macroprudential policy is an important policy area and *it is vital that a long-term, sustainable structure is created for it,* so that macroprudential analysis is not given lower priority when other tasks require resources, and experiences from the crisis are forgotten. The Stability Council has so far played an insignificant role in practice.

[15] See ESRB (2011).
[16] See ESRB (2011).
[17] See ESRB (2011).

Sweden deviates from international and European standards

Sweden thus deviates – in several respects – from European standards as regards how its macroprudential policy framework is designed. We have also organised the responsibility for macroprudential policy differently to most of the other countries in Europe. In 13 EU Member States, the responsibility has been given to the central bank, a similar number have given it to a separate council and two countries (Sweden and Finland) have given it to the supervisory authority.[18] In addition, it is worth mentioning that the European Central Bank, the ECB, has received a mandate that basically means that it shares the macroprudential policy responsibility with the national macroprudential authorities in those countries that participate in the Single Supervisory Mechanism. The ECB has the responsibility for a so-called "top-up" of some of the macroprudential policy measures decided at national level – i.e. to tighten the measures further if the bank feels it is necessary.

More generally speaking, it is a problem if Sweden chooses to deviate from international or European standards, as it implies a risk of us losing international influence and of us having problems to implement new regulations in an efficient and consistent way. And the problem is particularly major given that we have a large banking sector by international comparison.

In light of this, there is also reason for us to reconsider whether we should apply to take part in the EU's Single Supervisory Mechanism (SSM). Through this, the ECB has been given the overall responsibility for supervision in the euro countries and in other EU Member States that apply to and are permitted to take part in the SSM. For the past couple of years, the ECB has been responsible for supervision in 19 of the 28 EU Member States. The ECB's influence will strengthen over time as regards the design of both microprudential supervision and macroprudential policy in Europe. Even if Sweden were to have only limited influence as an SSM participant, since we are not in the euro area, we would nevertheless gain a better insight into SSM discussions and could make our voice heard. As an outside country, however, we would in practice have to accept, to a large extent, the implementation of changes already agreed on by the ECB/SSM. The fact that Sweden has large, cross-border banks is reason enough to believe that we will have to adapt to the SSM rather than the other way around.

Need for "a rethink" – a reanalysis

It is clear therefore that our Swedish framework for macroprudential policy has major flaws in the way its objective has been formulated, the processes for allocating tools, clarity in the division of responsibility and in legal status. This is problematic as it has contributed to delaying measures that can counteract the high and growing household indebtedness.

In their evaluation, Goodfriend and King point out that both the mandate and division of responsibility for macroprudential policy are in need of review. I agree. Without going into more detail about their concrete recommendations, I can see that, based on a socioeconomic efficiency perspective, it would be appropriate to utilise the expertise, experience and resources in the macroprudential policy area, possessed by the Riksbank in its capacity as the central bank, in a better way than is currently the case.

[18] See ESRB (2014).

There are many different ways of doing this, of which, from both an international and national perspective, the most efficient in the long run would probably be to merge the Riksbank and Finansinspektionen. This would gather our skills and expertise together and strengthen Sweden's voice internationally. This is certainly a far-reaching change, the collective effects of which would most definitely need to be analysed very thoroughly. It is not in line with the current structure, but when the world around us is changing, our central agency structure sometimes also needs to do the same. At the beginning of the 1990s, the Bank Inspection Board was merged with the Private Insurance Supervisory Service into Finansinspektionen. In the majority of EU Member States, the central bank and banking supervision are nowadays under the same roof.

There are of course other less far-reaching solutions that would be possible if we wanted to improve our Swedish macroprudential policy structure. Regardless of the solution chosen, each has its specific challenges as regards governance and accountability. But having a well-functioning and effective arrangement for macroprudential policy is extremely important for Sweden. What the best arrangement might be is something I hope the Riksdag will reflect on in conjunction with the planned review of the Sveriges Riksbank Act. The time this will take is certainly beyond my active time. My focus is on what is good for Sweden.

The whole of Sweden's welfare is built on the endeavour to increase productivity. This is clearly true within the private sector and it would be strange if this endeavour did not also lead to some form of structural transformation as regards public sector regulation and oversight of the financial system, especially in light of our large, cross-border banks, technological developments and a world of free capital flows unavoidably posing new risks.

New but at the same time old issues for monetary policy

As I described, a central bank is "the banks' bank", not just in financial crisis situations but also on a day-to-day basis. The banks make payments between themselves via the central bank and they can borrow or deposit money there for the short run. The terms determined by the central banks for these transactions affect interest rate-setting and credit flows in the economy. This is what is normally referred to as "monetary policy" and receives considerable media coverage and space in the economic policy debate.

Since the monetary policy regime of maintaining a fixed foreign exchange rate was abandoned at the beginning of the 1990s, the Riksbank – similar to many other central banks – has followed a strategy known as "flexible inflation-targeting". This means that monetary policy is aimed at achieving a quantified inflation target, but this is done in a flexible manner. Deviations from the target are consciously accepted, normally in order to avoid unnecessarily negative effects on output and employment, but it could also be a matter of trying to avoid the build-up of financial imbalances.[19]

Flexible inflation targeting can help to maintain financial stability. At the same time, financial stability is a prerequisite for being able to pursue a meaningful monetary policy, as monetary policy affects the real economy and inflation via

[19] For a theoretical discussion about the consequences of financial imbalances on flexible inflation targeting, see Woodford (2012).

the financial system. Financial instability very much inhibits effective monetary policy.

Many would certainly agree that our flexible inflation targeting policy has led to favourable economic growth in Sweden. It has also in general received a good rating in the evaluations of the Riksbank performed by external experts on behalf of the Riksdag.[20] My impression is that the experience is about the same in other countries that have followed a similar strategy. I am therefore quite convinced that flexible inflation targeting in some form or other will continue to be the best-suited monetary policy framework in the future. Experience since 2008 has, however, led to some parts of the strategy being brought into question. The questions raised are, however, seldom completely new, but in most cases are questions we have been struggling with since the introduction of the inflation target in 1993, even if the most recent financial crisis has put them in a different light to a certain extent.

Should the level of the inflation target be changed?

One issue discussed is the appropriate level of the inflation target and whether the target currently adopted by most inflation-targeting countries, around 2 per cent, should be changed. Some commentators have argued that the Swedish inflation target should be reduced.[21] Their main argument seems to be that digitalisation and globalisation have made achievement of the 2-percent inflation target difficult and that the Riksbank's attempt to achieve the target is exacerbating the problems of growing debt levels and housing prices.

Another proposal put forward is that the Riksbank, instead of explicitly reducing the inflation target, should allow inflation to continue to undershoot the target for a long period to come. In both cases, inflation would be lower for an even longer period of time and inflation expectations would probably fall even further. As a consequence, interest rates in Sweden would remain at today's extremely low levels for even longer to come.[22] For reasons I will shortly outline, it would, however, be more difficult to counteract economic recessions in the future, if inflation, inflation expectations and the average nominal interest rate were to remain permanently at very low levels.

The international debate has not concerned itself too much with globalisation and digitalisation having lastingly held back inflation. Instead, it has been argued that central bank inflation targets should be increased.[23] One reason for this is that real, long-term interest rates have fallen by about 4.5 percentage points around the world over the past 30 years.[24] One consequence of interest rates being much lower than twenty years ago is that it has severely restricted the scope for central banks to cut their policy rates when the economy has been weak or inflation has undershot the target. One way of dealing with this is to raise the inflation target. With a higher inflation target, say 3 per cent, the nominal interest rate would be higher, which in turn would create greater scope for stimulating the economy in the event of future recessions and prevent the policy rate's effective lower bound becoming binding.

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[20] See Giavazzi and Mishkin (2006), Goodhart and Rochet (2011) and Goodfriend and King (2016). See also Bryant, Henderson and Becker (2012).
[21] See Mitelman (2013), Schück (2015), Sydsvenskan (2015) and Dagens Industri (2015).
[22] See Flodén (2015).
[23] See for example Williams (2009), Blanchard, et al. (2010), Ball (2014), Krugman (2014) and Rosengren (2015).
[24] See Rachel and Smith (2015).

This is very much an ongoing discussion and it remains to be seen how it will end. The target level is not set in stone but a change should not be made lightly. There may be reason to wait until a reasonable degree of consensus has been reached among central banks and in the research community. This would probably increase confidence in a change to the target level. This is an example of how the scope for an individual central bank to take action entirely on its own is restricted. I will return to this issue anon. But there are parameters in our framework other than the target level that are perhaps more in need of adjustment.

Which target variable is best?

Ever since the Riksbank introduced inflation targeting, the inflation target has been expressed in terms of the CPI. The reason for choosing the CPI as the target index is not only because it is a broad price index that represents normal purchases, but also because CPI statistics are of good quality, not normally revised and published shortly after the end of the month. The use of the CPI as the target variable has, however, led to some difficulties and we have therefore analysed other inflation indices as well in our interest rate decisions, more recently the CPIF (the CPI with a fixed rate of interest). It may, however, be difficult to evaluate monetary policy if there are major differences between the development of the variable that guides the Riksbank, more recently the CPIF, and the formal target variable, the CPI.

Another problem is that both domestic and overseas forecasters relatively seldom take into account the fact that the Swedish CPI is calculated the way it is when they describe the situation in Sweden. This can lead to misleading international comparisons. In recent years, for example, eye-catching headlines have appeared at regular intervals in the media saying that Sweden is in deflation, despite this being largely due to the fact that housing costs in the CPI have gone down when the Riksbank has cut the repo rate. This can give the impression that the situation in Sweden is worse and the inflation is much lower than in other countries, despite the difference being because the Swedish CPI is particularly sensitive to changes in the policy rate.

It may therefore be time to open up a discussion on the target variable. In their evaluation, Goodfriend and King suggest that the target be expressed in terms of the CPIF. An alternative index, which is not affected directly by changes in the policy rate either, is the HICP (harmonised index of consumer prices), which is used by, among others, the ECB as the target variable. In terms of the latter index, one advantage is that it is often used in international comparisons of inflation, but the differences compared with the CPIF in terms of actual figures are not particularly major.

Interval around the target?

Another question is whether the target should be surrounded by some form of interval. This is quite common internationally and previously there was also a so-called tolerance interval of 1 percentage point either side of the Swedish inflation target. It was introduced at the same time as the inflation target in 1993 and its main purpose was to explain that the Riksbank is not able to control inflation precisely in the short run, but that it aims to limit deviations from the target.

However, the interval proved to be far too narrow in relation to how CPI inflation varied in practice. When the interval was abolished in 2010, CPI inflation had more often been outside the tolerance interval than inside it. In the background memorandum published in conjunction with the decision to abolish, the Riksbank argued that the interval had become obsolete since target deviations greater than 1 percentage point had become a natural part of flexible inflation targeting and that the credibility of the inflation target was not questioned even when inflation was outside the tolerance interval.[25]

In retrospect, it is reasonable to ask whether the problem was not just the fact that the interval chosen was poorly adapted. Despite this, the idea as such of an interval around the target does not necessarily have to be a bad one. A better adapted interval may bring with it the advantages envisaged in the first place. It would signal that monetary policy is being conducted amidst considerable uncertainty and that the Riksbank is unable to fine-tune the economy and inflation. This is something that is good to remind people of on a more or less continual basis. In the same way as there may be reason to discuss a change of target variable, there may, in light of this, be cause to consider whether a tolerance interval should be reintroduced.

I find it difficult, however, to see how an interval could normally change the practical prerequisites for monetary policy very much. The Riksbank has not had any rigid fixation with pinning the inflation target at exactly 2 per cent at all times, but an explicit target is nevertheless necessary as a guide to monetary policy and inflation expectations. Even with an interval, monetary policy would more often than not aim to reach the mid-point of the interval. But it could make things easier if it takes quite a long time to achieve the target. And an interval may, as I said before, be a good way of communicating uncertainty about the future and about the effects of monetary policy.

Other targets in addition to the inflation target?

A question that has emerged now and again in the Swedish debate is whether it should be written into the law that the Riksbank, in addition to the price stability objective, should also have an objective for growth in the real economy. Normally, it is an objective for employment that debaters then have in mind. One usually talks of the central bank having a so-called dual mandate, including both inflation and the real economy. In practice, central banks that conduct flexible inflation targeting act and reason in a very similar way, regardless of whether they have a statutory dual mandate or not when the real target is not explicitly expressed in numerical terms.[26]

There is a risk that many of those who advocate a statutory dual mandate imagining that monetary policy would then be conducted in a completely different way to previously, and that it thereby would be able to contribute in some way or other to a lasting increase in employment. In other words, the Riksbank would not just keep inflation low and stable, but also help to solve the unemployment problem. Today, it is generally accepted that a central bank cannot lastingly increase growth and employment by conducting a systematically ex-

[25] See Memorandum, Basis for Decision. Sveriges Riksbank. http://www.riksbank.se/Upload/Dokument_riksbank/Kat_publicerat/Pressmeddelanden/2010/nr27_beslutsunderlag.pdf.

[26] In the preparatory works for the Sveriges Riksbank Act, it was stated that the Riksbank, without prejudice to the price stability target, should support the goals of general economic policy with a view to maintaining a sustainable level of growth and high rate of employment.

pansionary monetary policy. A risk with a statutory, numerical dual mandate is also that politically uncomfortable reforms, that actually *could* lastingly increase employment, are not implemented on the grounds that employment is the Riksbank's responsibility. The dual mandate would in this case do more harm than good.

The evaluations made of the Riksbank on behalf of the Riksdag have so far argued against the introduction of an explicit, numerical employment target for monetary policy. At the same time, it has been taken for granted that the policy should be flexible insofar as it, in addition to the inflation target, should also try to stabilise *fluctuations* in employment.[27] The current arrangement with an inflation target and other reasoning in the preparatory works feel about right for me.

Greater consensus on consideration for financial stability

Another issue is whether flexible inflation targeting should also include taking the degree of financial stability into consideration.[28] This issue has sometimes been perceived as very controversial, but I think I see greater consensus among experts. I think it is obvious that there are close links between monetary policy and financial stability. The degree of financial stability affects how monetary policy measures spread to inflation and employment (the so-called transmission mechanism). At the same time, price stability contributes to a "safe and efficient payment mechanism" and facilitates stability in the financial system in general. The question discussed is whether the central bank's responsibility for financial stability also means that financial stability should be an *objective for monetary policy*.

I interpret the literature as there being a great deal to indicate that financial stability should *in principle* be an objective not only for macroprudential policy but also for monetary policy, although it will be a practical and quantitative question to determine in each given situation how much financial stability should be considered in monetary policy decisions.[29] In principle, it would be best if monetary policy and macroprudential policy could be coordinated, but there are also relevant arguments against such coordination.[30] It is claimed that macroprudential policy and microprudential policy should be the "first line of defence" against financial stability risks and that monetary policy should focus on stabilising inflation and growth in the real economy. But given the strong links between financial stability, price stability and real economic stability, it cannot be ruled out that monetary policy sometimes needs to be used to mitigate financial stability risks. How much depends, among other factors, on how well the price stability objective has been met and on how effective macro- and microprudential policy are when it comes to promoting financial stability.

Flexible inflation targeting involves, as I stated earlier, the central bank allowing certain deviations from the target in order to take, for example, output, employment or financial imbalances more into account. But this flexibility is not

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[27] For example, Goodfriend and King (2016), p. 98, write as follows: "We do not think it sensible to extend the objective of the central bank to include numerical targets for employment and output. The experience of forward guidance in both United States and United Kingdom suggest that attempts to use numerical values for these variables can crumble in the hands of policymakers within a short period of time."
[28] See Woodford (2012).
[29] See Stein (2014), Billi and Vredin (2014) and IMF (2015).
[30] See Bryant, Henderson and Becker (2012) and Acharya (2015) for different arguments.

just something that is there, one has to accumulate it. A prerequisite for using the policy rate for something other than stabilising inflation is that confidence in the inflation target is firmly rooted and that it works as a nominal anchor in the economy. The higher the confidence in the inflation target, the more consideration the central bank can show for aspects other than inflation – the more flexible monetary policy can be.

Such thoughts lay behind monetary policy in the early 1990s, when we were emerging from twenty or so years of high, fluctuating inflation and confidence in the new low inflation regime needed to be established. In both its communication and policy, the Riksbank prioritised inflation quite clearly before other considerations – it was quite simply necessary to be what Mervyn King referred to as an "inflation nutter" during a period of adaptation. If, at that time, the Riksbank had acted less resolutely – and there was definitely external pressure to have a more relaxed attitude towards inflation – it would have taken much longer and been considerably more difficult to establish the inflation target as the benchmark for price-setting and wage formation that it has been In recent decades.

The independence of central banks – worth preserving

As I have previously touched upon, a common view both historically and internationally has been to see central banks as relatively independent public institutions. This has partly to do with it being otherwise tempting for governments to finance budget deficits by printing more money. But it has also had to do with it being considered risky to use monetary policy far too actively in cyclical policy. Experience has suggested that this can lead to lastingly high and volatile inflation without any positive effects on the real economy. For these reasons, many countries have chosen to delegate monetary policy decisions to a highly independent central bank.

The fact that the central bank has a high degree of autonomy does not however mean that it is "independent" of political decisions. It is politicians who make decisions on how independent the central bank is to be. The degree of autonomy is reflected in several different conditions: how central bank executive boards are appointed, which people are appointed, what mandate they have, how the central bank's operations are funded. The degree of autonomy can be different in different dimensions. There may also be a difference between how the autonomy manifests itself formally according to the law, and how it looks in practice. A central bank can, for example, have considerable formal autonomy when taking monetary policy decisions, whereas it may be strong dependent on political decisions for its funding.

There is also a connection between the central bank's mandate and its autonomy. The narrower the central bank's mandate, the easier it will be for politicians to give it a higher degree of autonomy – and the easier it will be to evaluate the central bank. If the central bank has very broad, mandate, it may feel more natural for there to be a greater amount of political influence. To take two examples, among several: The Bank of England and Norges Bank both have significantly broader remits than the Riksbank, but they are less independent than the Riksbank, at least according to the legal frameworks.

Central bank laws are not fixed for time eternal. They are modified now and again, often in the wake of different types of crisis or when new economic policy experience has been gained in other ways. The most recent financial crisis and the discussions now underway around the world on central bank mandates may lead to reforms that change the political influence over central banks. In Sweden's case, our scope for amending the Sveriges Riksbank Act is limited by Sweden's membership of the EU, which obliges the country to follow the regulations laid down in the Maastricht Treaty. But I do not think this should hamper an intellectually and analytically based discussion on the benefits and drawbacks of the way we have designed monetary policy and financial stability in Sweden.

In all likelihood, there is plenty to learn both from economic research and from what works well and not so well in other countries. It is a matter here of not throwing the baby out with the bathwater. Experience of increased autonomy have generally speaking been good, so I do not believe major changes to the regulatory frameworks to be justified in this respect. But I would nevertheless like to highlight some issues that are under discussion and that affect the autonomy of central banks.

Fiscal policy and monetary policy – mutually dependent

Sweden and other countries that came through the acute financial crisis of 2008 – 2009 relatively well are characterised not only by an efficient regulatory framework for central bank operations but also by the fact that they have been implementing reforms for a long time that have improved the functioning of the economy, not least as regards how fiscal policy is conducted. The fact that Sweden has, over the last twenty years, managed to reconcile low and stable inflation with good economic growth and sound public finances depends to a large degree on fiscal policy reforms implemented in the wake of the crisis in the 1990s.

But experience gained from the latest financial crisis shows that both these sides of the economic policy coin are intimately intertwined and cannot be entirely decoupled from one another. My interpretation of the research situation is that increasing importance is being attached to how dependent monetary and fiscal policy are on each other.[31] It is difficult to believe that it might be possible for a central bank to independently guarantee low and stable inflation, and financial stability, irrespective of how fiscal policy is designed. By the same token, it will be easier to maintain sound and sustainable fiscal policy if there is price stability and financial stability.

The difficulties of many countries in countering the economic downturn after the financial crisis via an active fiscal policy has increased the pressure on central banks to stimulate economic activity. The ambitions to limit the build-up of debt in the public sector has led to rapidly increasingly indebtedness in the private sector instead. This can create new risks in the longer run. The debt problem is something governments, central banks and other authorities must tackle jointly.

The financial crisis has also led to major changes in central bank balance sheets. For example, the Federal Reserve bought 90 per cent of all newly issued mortgage-based securities for a period.[32] Similar actions in several countries have significantly increased the risk exposure of central banks.[33] From 2009 and

[31] See Leeper (2011).
[32] See Mehrling (2014).
[33] See Archer and Moser-Boehm (2013).

onwards, the ECB purchased large volumes of government securities issued by European governments. The Riksbank has made monetary policy more expansionary by buying Swedish government bonds once the policy rate had already been cut substantially and the scope for further rate cuts was not sufficient. Today, the Riksbank owns about one third of the outstanding stock of nominal government securities.

The increased balance sheet totals of central banks poses risks for future economic losses, which may have consequences for monetary policy, or for the autonomy of central banks. Theoretically, a central bank's losses can be so large that it is either forced to create more money, with the potential risks to price stability this entails, or request funding from the public treasury, something which could affect the degree of autonomy. In addition, the reduction in the use of cash means that central bank revenue from the issuing of banknotes and coins – known as "seigniorage" – decreases, which further inflates the risks of central bank finances becoming more strained than previously in the period ahead.

Less room for manoeuvre in the wake of financial globalisation

Central banks' room for manoeuvre is affected not only by how independent they are in accordance with national regulatory frameworks. I have today spoken about how central bank operations, in basically all areas, are influenced by financial globalisation. Over the past 30 years, international capital flows have increased dramatically.[34] This reflects the gradual liberalisation of capital flows that has occurred over a long period. In the right circumstances, especially when countries have achieved a certain level of institutional and financial development, and when there are regulations and oversight, free capital flows lead to considerable efficiency gains. But it does not mean that the completely free movement of capital is good for all countries at all times.

The fact that many countries have been affected by the US credit cycle is nothing new, but the fact that this synchronisation now includes developing countries as well as a large number of other countries is a more modern phenomenon. This increased global financial covariation does not just apply to credit in relation to GDP but also within basically all financial asset types.[35]

The financial conditions in the large and dominant currency areas, such as the dollar and the euro, are spread to the rest of the world via the free movement of capital irrespective of floating exchange rates. Floating exchange rates cannot therefore isolate an economy from the global financial cycle. This can, of course, lead to problems for some countries during certain periods. It can, for example, lead to inflated or rapidly falling financial asset prices, posing considerable risks to the financial system and macroeconomic growth.

Interest rates are currently determined to a large extent directly or indirectly by the conditions on the global financial markets. This makes it more difficult for central banks in individual countries to affect the domestic economy. Moreover, the large capital flows can have undesirable effects on the exchange rate. This reduces the room for manoeuvre for domestic economic policy in countries like

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[34] In 1970, the sum of all capital flows between countries amounted to less than 2 per cent of global GDP. Just before the financial crisis in 2007, it amounted to 20 per cent of global GDP. Global external debts have increased from 30 per cent of global GDP in 1980 to about 200 per cent of global GDP today, see IMF 2016.
[35] See Rey (2015).

Sweden – small, open economies with a large financial sector.[36] A current example of monetary policy abroad placing certain restrictions on domestic policy is that in the situation we have – where inflation has undershot the target for several years – a dramatic and sudden appreciation of the Swedish krona could be problematic. It is therefore important that the Riksbank's policy relates to policy developments abroad, particularly in the euro area. A significantly higher interest rate in Sweden would not only risk holding back inflation under the target and entrenching it on a low level but also risk leading to much lower growth in Sweden.

I do not mean that here in Sweden we cannot pursue an independent monetary policy. But monetary policy abroad obviously restricts our room for manoeuvre. It also means that macroprudential policy measures take on even more importance in situations where the global financial cycle is not adapted to Swedish circumstances. These are questions we have to drill down into and understand better.

We have to live with financial crises – but we can increase our resilience

Today I have talked about the many different tasks of a central bank: A central bank is the banks' bank not just in financial crisis situations, but on a day-to-day basis, "24/7". We determine the price – the interest rate – of banks' payments among themselves, we supply the central payment system. And if something goes wrong with RIX, Sweden's financial lifeblood, it is the Riksbank's task to manage the situation Monetary policy and financial stability are two sides of the same coin – financial stability affects how monetary policy is spread to the rest of the economy and price stability contributes to a stable financial system. Both monetary policy and various tasks to promote financial stability are part of a central bank's core operations and I believe that it is in reality not possible to differentiate between these tasks. All this is interconnected since, as I said earlier, the central bank is where the money is. It is also at the central bank where the amount of money can be increased or reduced.

Allow me in conclusion to illustrate the importance of preventing financial crises. Over the past 150 years, economic activity, measured in terms of GDP, has not fallen so often but when it has, it has often been in conjunction with a financial crisis. Six out of nine cases of substantial downturns in GDP have occurred in connection with a financial crisis. Of the rest, two coincided with the two world wars. The fact that we were spared financial crises between 1945 and 1990 depends to a high degree on the strict regulation that prevailed on the financial markets, although this regulation led to other types of problem. The experiences indicate that financial crises are something we will have to live with. But to reduce the risks of financial crises, with major socioeconomic costs, central banks and other players need to have the mandates and tools to prevent financial crises, along with flexibility and liquidity when a crisis actually occurs.

[36] The covariance between Swedish and international GDP growth is very high; if growth abroad increases by 1 percentage point, growth in Sweden increases by about 1.3 percentage points (quarterly data). For inflation, the covariance is about 0.5 and if German 10-year bond yields rise by one percentage point, Swedish long-term bond yields increase by the same amount.

The challenges facing the Riksbank and other central banks, and which I have tried to describe in this speech, are partly the result of the experiences gained during the latest crisis. But they also have to do with more long-term structural changes in the financial system, such as globalisation and innovations in the mediation of payments and credit. The challenges also relate to monetary policy, and this is something that often receives a great deal of attention in the debate. But, as I hopefully have shown, there are many other and perhaps even more important areas where the need for new thinking is even greater. If you've been in the business since 1668, it's important to think in new ways now and again.

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