

SPEECH



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■ After the crisis – new thoughts on monetary policy^{*}

Crises lead to all sorts of problems. But they also cause us to rethink ingrained ideas and earlier accepted practices. If we succeed in learning the right lessons from a crisis and implementing wise changes, this may lead to a better development in the long run.

But it is not always easy to see exactly what lessons we need to learn. For example, we are still not entirely agreed on all of the details regarding the crisis in the 1930s – why it arose and how it became so severe. In the same way, it will probably take time before there is a consensus on what lessons we should learn from the financial crisis we have just experienced.

Some of the lessons are fairly obvious, however. For instance, we can with hindsight note that there were clear inadequacies in the regulations and supervision intended to maintain financial stability. New regulatory frameworks are now taking shape both internationally and in individual countries, and there are discussions on how to make supervision more effective. One example of the work done so far is the agreement in September on the Basel III framework, which in brief entails raising the requirements regarding the capital and liquidity that the banks are required to hold. I will return to the subject of regulations and supervision later.

The crisis has raised questions regarding the functioning of the economy

But crises also raise more fundamental questions regarding the way the economy functions in different respects. Are the economic relationships really as we believed them to be, or have our theories and models missed something? Could there be a reason to begin thinking differently? These types of question are often much more difficult to answer. It usually takes years of practical experience and theoretical and empirical research before one can draw conclusions with any

^{*} I would like to thank Mikael Apel and Erik Lenntorp for contributing to this speech.

■ reasonable certainty. But it is quite clear that the crisis has brought to the fore a number of interesting questions.

I intend to take up three areas, which I believe will be discussed in the coming period, both in the central bank world and in academic research. What these all have in common is that, in one way or another, they affect the monetary policy transmission mechanism, that is, the way the central bank's policy rate decisions affect the economy. One can briefly say that the first area concerns monetary policy sometimes having unexpected effects, the second concerns it having much less effect than normal and the third concerns monetary policy receiving support from, but sometimes possibly also being counteracted by, measures that are primarily aimed at maintaining financial stability. I will run through these areas one by one and explain in more detail what I mean.

But first I would like to clarify something. The fact that I am raising these issues should not be interpreted as my trying to make a point about how the world looks with certainty. Although some of the ideas are in line with my own reasoning in the monetary policy discussion, others are relevant from a more general perspective. These are simply issues I think are of current interest and which I believe will be discussed in the coming period.

Can expansionary monetary policy increase risk taking in the economy?

A central component in the financial crisis was what has sometimes been called a North Atlantic property bubble.¹ In the United States and a number of other countries, such as Ireland, Spain and the United Kingdom, property prices had increased substantially over a number of years, accompanied by a large expansion in credit. Property prices then fell drastically in the crisis.

There is no individual explanation for this development – it is due to a number of interacting factors. I have already mentioned that there were deficiencies in the regulations and supervision, but these perhaps mainly contributed to the failure to slow down a process that had already begun and was driven by other forces. One factor that some people consider played a role in this is the expansionary monetary policy with very low interest rates conducted by the US central bank, the Federal Reserve, and others during the years before the crisis.² Although monetary policy was hardly the main reason for the crisis, it may have contributed to problems building up.

A risk-taking channel...

Recently, there has been increasing interest in a special channel through which monetary policy may have influenced events – what is known as the “risk-taking channel”. The idea that there is a special risk-taking channel that should be regarded as an independent, previously-ignored part of the transmission

¹ Paul Krugman and Robin Wells, “The Slump Goes On: Why?” The New York Review of Books, September 2010.

² See, for instance, John B. Taylor, “The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong”, NBER Working Paper Series No. 14631, 2009.

mechanism is fairly new.³ The idea is that low policy rates can in various ways get the banks to take greater risks. When the central bank holds the policy rate low because the outlook for inflation and the economy appears to motivate this, the policy may actually have the undesired and unforeseen effect that risks increase in the banks and in the financial system as a whole. In the long run, this can cause problems. This was what I meant earlier when I said that monetary policy may in some circumstances have unexpected effects. Although the central bank is acting in an apparently natural manner, in accordance with an inflation targeting policy, it may unintentionally contribute to a future crisis. The risk-taking channel can thus be said to form a link between monetary policy and financial stability.

...that consists of different sub-channels

The risk-taking channel actually consists of several sub-channels. One channel is that low interest rates can create incentives for investors to seek higher risk investments with a higher expected rate of return – what is known as a “search for yield”. This could involve, for instance, abandoning government bonds in favour of more risky, but higher-yield commercial paper during periods when the interest rate is particularly low. One reason may be the hope of attaining the same nominal yield as in earlier periods with higher interest rates.

Another, more indirect channel is linked to low interest rates contributing to raising, for instance, the value of assets and collateral, as well as income and profits. This can in turn affect the banks’ assessments of, and tolerance to, risk.⁴ Low interest rates could mean, for instance, that they make a more optimistic assessment of the expected default frequency. This channel can be said to function as a form of multiplier in the sense that it reinforces the effects of interest rate changes on the economy.

Finally, the central bank’s communication can also contribute to increasing risk taking. This may occur, for instance, if the participants in the economy perceive that the central bank is acting asymmetrically, to the extent that it reacts strongly once a crisis occurs, but remains passive during the period while the risks are building up. Such action may be interpreted as a form of insurance that allows agents to take greater risks than they would otherwise have done, as they rely on the central bank always being prepared to intervene and resolve the situation if things go wrong.

There is as yet rather limited empirical research on the risk-taking channel, but some papers on the subject have now begun to appear. The studies are based on data from the eurozone and the United States, as well as other countries. They appear on the whole to support the theory that low policy rates lead to the banks taking greater risks.⁵

³ The concept of a “risk-taking channel” was introduced by Claudio Borio and Haibin Zhu in “Capital regulation, risk-taking and monetary policy: a missing link in the transmission mechanism?” BIS Working Papers No 268, 2008. This paper also reviews the different mechanisms the risk-taking channel consists of.

⁴ The banks’ assessment of risk can in turn affect the size of the leverage they allow. Variations in leverage also affect the price of the asset and are an important driving force in what are known as the “leverage cycle”; see for instance, Geanakoplos, J., “Solving the Present Crisis and Managing the Leverage Cycle”, *FRBNY Economic Policy Review*, August 2010.

⁵ See, for instance, Gambacorta, L., “Monetary Policy and the Risk-Taking Channel”, *BIS Quarterly Review*, December 2009, Ioannidou, V., S. Ongena and J.-L. Peydró, “Monetary Policy, Risk-Taking and Pricing: Evidence from a Quasi-Natural Experiment”, *European Banking Center Discussion Paper No 2009-04S*, 2009, Jiménez, G., S. Ongena, J.-L. Peydró and J. Saurina, “Hazardous Times for Monetary Policy:

Well worth more research...

My personal view is that the risk-taking channel is definitely an interesting line, well worth further research. Our knowledge of the monetary policy transmission mechanisms is far from complete and the way that monetary policy affects the banks' risk taking is something we need to learn more about.

I also believe it would be useful to broaden the question and try to find out if low interest rates for a long period of time can lead to an increase in risk propensity in society as a whole – among households, companies and other participants in the economy – and not just among banks. So far, research in this field has been even scarcer.⁶ As I see it, an increased risk propensity among households could be an equally strong driving force behind a rise in property prices as greater risk taking by the banks.

...but not so easy to do in practice

It is of course difficult to predict today what the conclusions eventually will be and what implications they may have for monetary policy. But even if it is discovered that the risk-taking channel is something worth taking into account, it is not so easy to see how this should be done in practice. I cannot see, for instance, that it is realistic to believe that a central bank would refrain from cutting its policy rate below a certain level on the grounds that this might lead to greater risk taking in the economy. Should developments in the economy as a whole warrant a low policy rate and there are no tangible signs of increased risk taking, it would be very difficult to justify such a policy. However, it is of course important to bear this mechanism in mind. If the policy rate has been low for a long period of time, there may be reason for particular vigilance regarding signs of increased risk propensity. When there are such signs, it may be easier to act. Although not always easy to detect, it is not impossible to identify signs of increasing risk. For example, the Riksbank warned in speeches and reports, a long time before the crisis broke out, that the compensation for risk on the financial markets was too low.⁷

Weaker monetary policy effect when agents are consolidating their balance sheets?

Something that has characterised the recovery from the recent crisis in many countries, although not in Sweden, is that it has been very slow. One hypothesis is that several economies are currently undergoing what is known as a “balance

What do Twenty-Three Million Bank Loans Say About the Effects of Monetary Policy on Credit Risk?” CEPR Discussion Paper No. 6514, 2009, Altunbas, Y., L. Gambacorta and D. Marques-Ibanez, “Does Monetary Policy Affect Bank Risk-Taking?” BIS Working Papers No 298, 2010, Delis, M. D. and G. Kouretas, “Interest Rates and Bank Risk-Taking”, Munich Personal RePEc Archive, MPRA Paper No. 20132, 2010 and Maddaloni, A. and J.-L. Peydró, “Bank Risk-Taking, Securitization, Supervision and Low Interest Rates: Evidence from the Euro Area and the U.S. Lending Standards”, ECB Working Paper Series No 1248, 2010.

⁶ One paper that does not focus on banks is Bekaert, G., M. Hoerova and M. Lo Duca, “Risk, Uncertainty and Monetary Policy”, NBER Working Paper Series No 16397, 2010, which finds that low policy rates lower the risk aversion on the stock market after around five months.

⁷ See, for instance, *Financial Stability Report* 2005:1.

sheet recession". This concept was introduced a few years ago as an explanation for developments in Japan and its "lost decade".⁸

The concept of a balance sheet recession can be described as follows. Let us assume that we have experienced a large price rise on an important asset market, for instance, the property market, and that this rise has been largely financed through loans – that is, roughly what happened with the North Atlantic property bubble. If prices then fall drastically, many people will be stuck with assets that have declined substantially in value, while the value of the loan remains unchanged. In other words, their balance sheets look much worse than they had anticipated. This can create uncertainty regarding the outlook for the future. In this situation the participants in the economy may set a target that overshadows all others – to get rid of enough of their debts. This means that their income will for some time to come be used for amortisation rather than consumption and investment.

Interest rate cuts less effective when everyone wants to pay off their debts

It is then of minor importance if interest rates are cut – the participants in the economy are still only interested in consolidating their balance sheets. Even if one steps on the monetary policy accelerator pedal, the engine does not give the usual response. This is what I meant earlier when I said that monetary policy has less effect than usual in certain situations. The actual consolidation of the balance sheets may go more quickly if the interest rate is cut, as this creates scope to increase the pace of the instalment payments. But in a balance sheet recession there is also a risk that the policy rate will reach its lower limit.⁹

The consolidation of the balance sheets may take a fairly long time, in some cases perhaps several years, and during this period there is a risk of the economy as a whole weakening. It is only when the participants in the economy are satisfied with their balance sheets that they will begin consuming and investing again, and everything returns to normal.

Developments in the United States similar to Japan

In Japan the policy rate was close to zero in 1995, but the private sector continued paying off its debts and it was not until around ten years later that balance sheets had been consolidated. It was primarily the corporate sector that paid off its debts and held back demand. Many analysts are now saying that the United States is undergoing a similar process, but there it is mainly the households that are struggling with balance sheet problems.¹⁰

⁸ Koo, R. C., *Balance Sheet Recession: Japan's Struggle with Uncharted Economics and its Global Implications*, Wiley, 2003.

⁹ Normally, an expansionary fiscal policy is considered the best recipe in a balance sheet recession, see for instance Eggertsson G. and P. Krugman, "Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach", unpublished paper, Princeton University, November 2010.

¹⁰ See, for instance, Koo, R. C., "How to Avoid a Third Depression", Testimony before the Committee on Financial Services, U.S. House of Representatives, July 2010 and Krugman, P. and R. Wells, "The Slump Goes On: Why?", *The New York Review of Books*, September 2010. That household consumption plays a key role in the recovery from a financial crisis is a significant result in, for instance, Barrell, R., E. Philip Davies and O. Pomerantz, "Costs of Financial Instability, Household-Sector Balance Sheets and Consumption", *Journal of Financial Stability* 2, 2006. Crises tend to be more severe the higher the degree

■ Fortunately, not all recessions are balance sheet recessions – most of them are more normal recessions without any debt overhang and where demand recovers fairly quickly. For example, households' balance sheets in the United States have only shown prolonged and severe weakening during the most recent two of the past six recessions.¹¹ The recovery in the economy as a whole has thus also been slower on these two occasions than following earlier recessions.

Households and companies as important as the financial sector

Balance sheet recessions have several important implications. One is, of course, that as they tend to be particularly long drawn out, one should try to avoid them. Another implication is that the banks and the financial system need not be the reason why the economy is slow to recover from a financial crisis. The reason may instead be that households or companies need time to pay off their debts and put their balance sheets in order.

Another conclusion I draw is that a balance sheet recession, or in any case a very weak economy resulting from balance sheet adjustments, may arise without there being problems in the banks that cause a threat to financial stability. For instance, one can imagine that a sharp fall in house prices could trigger a process where households begin to save and amortise their mortgages, without the banking sector experiencing any difficulties. One could thus say that, in this case, the reason one may want to prevent a balance sheet recession is because of monetary policy considerations – one wants to stabilise inflation and the economy as a whole – rather than to maintain financial stability. Those occasions when I have advocated a policy of “leaning against the wind”, that is, holding the policy rate a little higher because I perceive risks in a rapid increase in lending and house prices, this is the sort of problem I have had in mind.

A further aspect of the problem is that in countries like Sweden most people buy a house or apartment to live in, not to rent out. Nor do we have the possibility that exists in some countries of handing the property over to the bank when interest payments become too much, and thus getting rid of the loan. When interest rates rise or one wants to pay off one's debts, one simply cuts down on other expenditure. One could thus speculate as to whether the risk of financial instability resulting from an over-mortgaged household sector is less here, but on the other hand the effect on demand in the economy when households begin saving is greater.

Interplay between monetary policy and macroprudential policy

The two areas I have discussed so far have concerned monetary policy possibly contributing to a credit-driven bubble, and the fact that it may not be particularly effective when the bubble has burst. All in all, this gives a fairly unfavourable image of monetary policy and what it can achieve. So can't monetary policy play a more positive role, for instance, by preventing bubbles and exaggeratedly high-risk lending? Yes, I believe it can, if one acts at an early stage. But at the same

of borrowing is, and there appear to be effects on consumption over and above those stemming from lower disposable incomes and lower net wealth.

¹¹ Amaral, P., “Households' Balance Sheets and the Recovery”, *Economic Trends*, Federal Reserve Bank of Cleveland, September 2010.

time, I believe that the main responsibility, or the first line of defence as one often says, for preventing credit-driven bubbles must be suitably-designed regulation and effective supervision. This is a stance that I believe I share with most people today.

Coordinating the “interest rate lever” and the “regulation lever”

I mentioned initially that monetary policy may receive support from, but can sometimes be counteracted by, measures primarily aimed at maintaining financial stability. Regulation and supervision can support monetary policy in two ways. For one thing, one can try to design a regulatory framework that remains the same over time, but nevertheless prevents credit-driven bubbles from arising. But one can also use regulation more actively so that there is not just an “interest rate lever” but also a “regulation lever” to pull on.

Normally, one may imagine pulling on the two levers for different reasons – the interest rate lever for monetary policy reasons and the regulation lever to maintain financial stability. But the levers are nevertheless connected in different ways. When one pulls on one lever, the resulting effects are often similar to those one gets if one pulls on the other. For instance, a regulation change, such as a higher amortisation requirement on mortgages, will lead to higher payments for households in the same way as an interest rate increase does. Regardless of which lever you pull, it is difficult to ensure the effects are only of a monetary policy nature, or only aimed at financial stability. One of the lessons of the financial crisis is that there are close links between these two policy areas, and that one therefore needs to coordinate how one pulls on the levers.¹²

Having said this, it may be worth adding that monetary policy and a policy for financial stability usually go hand in hand, more or less automatically. Moreover, problems with financial stability only arise under certain limited periods. On the other hand, one may claim that the crisis and its effects show that we actually *should* worry about it slightly more often than we have done.

If we are successful in formulating and using regulations and supervision, the central bank can receive assistance with both of the monetary policy problems I mentioned earlier. The central bank can hold the policy rate low when the economic outlook calls for this, without being afraid of risks building up through a monetary policy risk-taking channel. And if regulation and supervision can be used to prevent credit-driven bubbles arising, the central bank need not fear a balance sheet recession where monetary policy has little effect.

Regulation with monetary policy motives

With regard to coordinating the interest rate lever and the regulation level, I would like to return to a question I raised when I talked about balance sheet recessions. As I noted then, a fall on the property market could lead to a weak performance in the economy if households become uncertain about the future and feel they must consolidate their balance sheets. I also noted that this does

¹² See, for instance, Mishkin, F. S., “Monetary Policy Strategy: Lessons from the Crisis”, paper presented at the ECB Central Banking Conference, “Monetary Policy Revisited: Lessons from the Crisis”, Frankfurt, 18-19 November, 2010.

■ not mean that the banks will experience problems that could threaten financial stability. The times when I have seen risks of this happening and therefore advocated a policy of "leaning against the wind" it was for monetary policy reasons.

But it is not necessarily the interest rate lever that needs to be used to prevent this type of credit-driven bubble. The regulation lever is probably at least as effective in most cases. But what is worth noting in particular is that in this case one would use the regulation lever, not to maintain financial stability but for monetary policy reasons. This is a further example of the close links between the two policy areas and their tools, and also of how regulation can actively support monetary policy.

Greater focus on systemic risks...

Another lesson from the crisis is that as we now try to improve the regulatory framework and supervision, we should focus much more than before on the risks at the systemic level, for the financial system as a whole. The type of measure that is discussed in this context is often referred to as macroprudential policy. The actual toolbox for macroprudential policy is gradually being developed. But in general one can say that it is not so much about inventing new tools, as it is about using traditional supervision tools in a new way – they will be more specifically aimed at signs of exaggerated credit expansion and indebtedness in the economy at large, at the systemic level.

What are these tools in more concrete terms? What does a regulation lever consist of? I have already mentioned the possibility to vary amortisation requirements for mortgages. Another example is the countercyclical capital requirement for banks proposed in Basel III. The idea is that the capital requirement will increase if credit growth increases in relation to GDP. This entails a higher lending cost when credit growth is high, and also increases the banks' resilience. A further example is a ceiling on loan-to-value ratios similar to the mortgage ceiling recently introduced by Finansinspektionen (the Swedish Financial Supervisory Authority). This kind of ceiling creates incentives for households to acquire a buffer that reduces the risk of their balance sheets being weakened if property prices fall. Regulation of the loan-to-value ratio could also contribute to slowing down lending and house price increases and thus counteracting a housing bubble.

...but traditional supervision is still important

But while the discussion now mainly concerns macroprudential tools, it is important that we remember to keep improving the more micro-oriented, traditional bank supervision. Just because it proved insufficient to prevent the financial crisis does not mean that it is unimportant.

There is a broad spectrum of regulations around the financial system; everything from rules on consumer protection to rules on how to act if an agent – a bank, company or household – becomes insolvent. If these micro-oriented rules are not properly designed, the risk of a credit-financed bubble increases, and the consequences can be even greater. This means there is an even greater need to actively counteract this type of development by pulling on the more macro-oriented regulation lever, and this may entail rather difficult considerations. One

■ could say that well-designed supervision can support a macroprudential policy in a similar way to a well-designed macroprudential policy supporting monetary policy.

Does macroprudential policy require support from monetary policy?

So will improvements in regulation and supervision be able to solve all of the problems? Unfortunately, I don't think so. Quite regardless of which solutions we use, I am quite sure that we will not be totally immune to financial crises in the future. What I hope we can achieve is to ensure they are rarer and less severe.

I also believe that there will always be situations where the regulation and supervision may need support from a monetary policy that "leans against the wind". One reason is that experience shows that it is difficult to construct regulations that cannot be circumvented in one way or the other. The policy rate is certainly a blunt instrument, as it affects all lending in the economy. But at the same time, this may be a strength compared with the regulations, simply because it is difficult to "circumvent" an interest rate increase.

Another reason why monetary policy may in some cases be needed as a complement is that there will probably be quite considerable resistance to using regulation to prevent a credit-driven bubble. Banks and other financial market participants may perceive regulation to be a larger intervention than an interest rate increase, and consider it to be aimed only at them. In addition, things often look very good just as a bubble is inflating, so resistance would probably be particularly strong when measures are needed the most. The political and psychological pressure on those pulling on the regulation lever could thus be substantial.

Important with a good allocation of responsibility

I thereby come to an issue that is just as important as how regulations should be designed; namely, who should pull on the regulation lever and when. Lessons can be learned from monetary policy when it comes to responsibility and mandate. If an authority has a sufficient degree of independence it can more easily withstand external pressure. And if it also has clear and specific objectives, it has greater opportunity to do a good job, while at the same time it is easier for society to evaluate it.

The allocation of responsibility and mandate are of course important also because there are both an interest rate lever and a regulation lever to pull, and that these can in some cases have similar effects. It is not difficult to imagine situations where regulations and the interest rate counteract one another. For instance, one might have a situation where the prospects for inflation and the economy as a whole look bleak, but where there are nevertheless signs that a credit-driven bubble is inflating. There may then be reason to use macroprudential measures to counteract the bubble. But these will reduce lending and thus further weaken the economy.

Such counteracting effects need not be a problem, if one single authority is controlling both levers, or if they are controlled by different authorities that are essentially trying to achieve the same aims and make similar assessments. For instance, they may both agree that the economy is weak, but that there may be

■ reason to take action to counteract a bubble. Then it is a question of coordinating and trying to find a suitable dosage, or mix, of interest rate and regulations. It is clear that the problems can be aggravated if the levers are controlled by different authorities that do not have the same aims and make completely different assessments of the situation.

It is thus important to try to coordinate monetary policy and macroprudential policy. Of course, there has always been a need to coordinate monetary policy and the work to promote financial stability. But following the crisis and the emergence of a macroprudential approach, this need has become even more evident. Important issues to resolve in the coming years are how responsibility should be allocated between different authorities to facilitate this coordination, and what forms the cooperation should take. It is of central importance that the mandate is clear and the tools are well-defined, particularly to enable evaluation and to ensure accountability.

An unusually interesting time

I have now been a monetary policy decision-maker for quite a long time – almost 12 years. A lot has happened during this time, both in the Swedish economy and internationally – including normal upturns and downturns in economic activity and a number of crises in various parts of the world. The way we conduct monetary policy has also changed quite a lot. But, when seen in a broader perspective, the changes have perhaps mostly concerned details – that we have further developed the inflation-targeting policy that has always been at the core of our work.

There is of course no doubt that the recent crisis has been the most dramatic one during this period. But I also have the impression that it has affected thinking about monetary policy and the central banks' activities in general, in a way that I have not experienced before. It is not about us needing to throw away the old and find something completely new. The progress we have made in research and practical policy implementation still holds good, and we will continue to conduct a policy of flexible inflation targeting. But it is clear that we need to find a better means of integrating the financial sector and what is happening there into our analyses. Both researchers and policymakers have a lot to think about in the coming period, and there is no doubt that the coming years will be interesting ones.