

# SPEECH



DATE: 2010-11-24  
SPEAKER: Deputy Governor Lars E.O. Svensson  
LOCALITY: Fastighetsvärlden's conference, Stockholm

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## Some problems with Swedish monetary policy and possible solutions\*

At the most recent monetary policy meeting in October, I entered a reservation against the majority decision. I, like my colleague Karolina Ekholm, instead advocated holding the repo rate unchanged and having a much lower repo rate path that rises steadily to a level of 2.7 per cent at the end of the forecast period. My reason for entering a reservation on this occasion and at earlier monetary policy meetings is because I see several problems with our current monetary policy.

In this speech I shall present the problems I currently see in Swedish monetary policy, discuss these problems and describe the motives for my reservation, as well as proposing possible solutions to the problems.

### An unwarrantedly tight monetary policy

According to the Riksbank's booklet "Monetary policy in Sweden" (2010a), and the Sveriges Riksbank Act and its preparatory works, monetary policy shall aim to stabilise inflation around the inflation target and resource utilisation around a normal level. But in practice the Riksbank appears to have conducted a tighter monetary policy than is justified, given our task, over several quarters. The arguments put forward for conducting this policy are that growth is good, interest rates are very low and need to be normalised, that we need to signal to housebuyers that interest rates will increase, that the rise in house prices and household debts needs to be limited, and that financial imbalances could build up if we do not conduct such a policy. At the same time, our forecast for inflation (measured as the CPIF inflation rate) has been low in relation to the inflation target, and our forecast for unemployment has been high in relation to a reasonable interval for equilibrium unemployment. Moreover, research and practical experiences indicate that the interest rate increases that have been made and are planned will probably have only minor effects on house prices and household debts – and if anything, negligible effects on financial stability.

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\* The opinions expressed here are my own and are not necessarily shared by other members of the Riksbank's Executive Board or staff. I would like to thank Claes Berg, Karolina Ekholm, Stefan Gerlach, Jesper Hansson, Per Jansson, Pernilla Meyersson, Ulf Söderström and Staffan Viotti for our discussions and their comments. Johanna Jeansson, Lina Majtorp and Magnus Åhl have contributed to this speech.

## ■ Several problems with Swedish monetary policy

In my opinion, there are now several problems with monetary policy in Sweden:

- Monetary policy appears to have been aimed at trying to limit the increase in house prices and in household indebtedness. However, no thorough analysis has been made of whether house prices and indebtedness entail problems or have any significance for future inflation and resource utilisation. At the same time, widespread research points to the policy rate being an unsuitable instrument for this, as it has small effects on house prices, but sizable effects on production, jobs and unemployment.
- Recently, monetary policy appears to have been aimed at slowing down growth in GDP, and thus the recovery from what is called the Great Recession. This is because the motivation given for the repo rate raises has been that growth in the Swedish economy is good, instead of pointing to the low level of GDP and the high level of unemployment.
- Monetary policy also appears to have strived, through references to the abnormally low repo rate, to normalise the level of the repo rate. This is despite the fact that the repo rate should not be a target variable for monetary policy, but merely an instrument without any inherent value.
- The repo rate path in the main scenario is now far above market expectations, the market repo rate path according to implied forward rates.<sup>1</sup> The *intended* monetary policy – the Riksbank's repo rate path – is thus much tighter than the *actual* monetary policy – the market repo rate path. The fact that the market repo rate path differs from the Riksbank's repo rate path means that the intended repo rate path is not credible. The more expansionary actual monetary policy has probably contributed to the strong growth and the recovery. However, if the repo rate path becomes credible, the long market interest rates will increase substantially and actual monetary policy will be much tighter. This risks cutting off the recovery. Higher long market rates would also lead to a much stronger krona. A stronger krona would lower inflation and in particular affect exports, entailing a further tightening of monetary policy, in addition to the increase in long market rates.
- In my opinion, the krona appreciation that would ensue if the repo rate path is credible is underestimated in the main scenario of the Riksbank's Monetary Policy Report. This appears to be because it is assumed in the main scenario that long market rates abroad are much higher than the observed market rates. Alternatively, it is assumed that the long market rates abroad will rise gradually in pace with Swedish long interest rates. However, these questions have not been properly analysed. Behind this is an assumption that certain central banks, namely the US Federal Reserve, the European Central Bank (ECB) and the Bank of England, will begin to raise their policy rates long before what is indicated by market pricing. These assumptions appear unrealistic, given the statements and signals from these central banks regarding continuing low policy rates.

I would like to propose the following possible solutions to the monetary policy problems:

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<sup>1</sup> The market expectations and market interest rates discussed in this speech are those at the monetary policy meeting in October.

- Consistently choose a repo rate path that best stabilises inflation around the inflation target and resource utilisation around a normal level, regardless of whether growth is high or low, and regardless of whether the repo rate is high or low.
- If the chosen repo rate path then offers a threat to financial stability – which would appear to be a rare situation – take this into account and exclude the repo rate path if this is appropriate, with a clear justification.
- Take into account house prices and household borrowing if they affect the forecasts for inflation and resource utilisation in the short or long term.
- If the level of house prices and household borrowing become unsustainable, or are otherwise judged to entail problems, use other and better instruments to deal with this than the repo rate. Trying to use the repo rate to slow down house prices and household debt could lead to high costs for the real economy in terms of lower production and employment, and higher unemployment. However, before choosing the right instrument we must specify the problems more precisely.
- Start the decision-making process by forecasting inflation and resource utilisation on the basis of market expectations in Sweden and abroad according to implied forward rates, to determine whether a higher or lower repo rate path than these market expectations is needed.
- Then make forecasts of inflation and resource utilisation on the basis of alternative repo rate paths to determine which path best stabilises inflation and resource utilisation. As I discuss in more detail later on, these forecasts can be constructed using what are known as anticipated or unanticipated deviations, depending on whether or not the repo rate paths are expected to be credible.
- Normally, the repo rate path that is included in the main scenario of the report should be chosen so that it best stabilises inflation and resource utilisation when it is credible.
- Use as an initial basis the actual market rates abroad and market expectations according to implied forward rates, and only assume different policy rate paths for central banks abroad if there are particular and clear reasons for doing so. As I will discuss in more detail later on, other policy rate paths than the expected ones require special treatment to correctly determine the exchange rate effect.

### **Stabilise inflation around the inflation target and resource utilisation around a normal level**

The booklet “Monetary policy in Sweden” states that the Riksbank, in addition to stabilising inflation around the inflation target, also strives to stabilise production and employment around sustainable paths, and thereby conducts a policy of flexible inflation targeting. Monetary policy thus involves choosing the repo rate path that best stabilises inflation and resource utilisation. Stabilising inflation stems from the objective of price stability in the Sveriges Riksbank Act. Stabilising resource utilisation stems from the emphasis in the preparatory works for the Sveriges Riksbank Act, that the Riksbank, without prejudice to the price stability target, should support the goals of general economic policy with a view to maintaining sustainable growth and a high rate of employment.

## ■ House prices and household debt

The arguments for raising the repo rate more than is justified by inflation and resource utilisation have emphasised developments in house prices and household indebtedness. There have also been references to potential financial imbalances building up. However, these arguments do not show what effect the repo rate is expected to have on house prices and indebtedness, or which financial imbalances are referred to. Nor is it clear what effects and risks might be involved, or how we can evaluate the effects and risks in relation to the cost of inflation and resource utilisation being too low.

As household debt mostly consists of mortgages and these are used to buy housing, house prices and household debt are really two sides of the same coin. If house prices increase, then household debt increases. If we want household debt to increase more slowly, then house prices must increase more slowly.

Thus, slowing down the increase in house prices and the increase in household debt is essentially the same thing. Regardless of whether or not these factors are a problem, the repo rate would appear an unsuitable instrument for influencing house prices and debts. Widespread theoretical and empirical research shows that changes in policy rates have little effect on house prices, but a substantial effect on production, jobs and unemployment. A typical conclusion is that, all else being equal, an increase in the policy rate of 1 percentage point reduces house prices by around 1.5 per cent, but at the same time reduces GDP by around one third, that is, about 0.5 per cent. So to reduce house prices by 15 per cent may require raising the repo rate by as much as 10 percentage points. But this would cause GDP to fall by around 5 per cent. These estimates are of course uncertain, but nevertheless imply very high real costs in terms of GDP.<sup>2</sup>

If house prices and household indebtedness would be regarded as a problem, there are more effective instruments than the policy rate, which also have less negative effects. Some examples are the mortgage ceiling introduced by Finansinspektionen (the Swedish Financial Supervisory Authority), a mortgage tax or limited tax deductions for mortgages, a property tax, a reserve requirement for mortgages, and so on. As a comparison, a higher repo rate functions not only as a tax on mortgages, but also a tax on loans for production, investment and trade. This in turn leads to the large costs to the real economy I mentioned earlier.

### **Are house prices and household indebtedness a problem?**

More generally, if house prices and household indebtedness are regarded as a problem, then this problem needs to be analysed and specified in greater detail to assess which means can be used to deal with it. Is the problem some form of market failure? Does it involve an externality? Is it due to a lack of information to borrowers, and is it thus a consumer protection issue? It is only when we have specified the problem that we can determine suitable measures to deal with it.

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<sup>2</sup>See, for instance, Assenmacher-Wesche and Gerlach (2010), Bean, Paustian, Penalver and Taylor (2010), Del Negro and Otrok (2007), Dokko, Doyle, Kiley, Kim, Sherlund, Sim and Van den Heuvel (2009), Edge, Kiley and Laforte (2008), Iacoviello and Neri (2008), Jarocinski and Smets (2008) and Walentin and Sellin (2010).

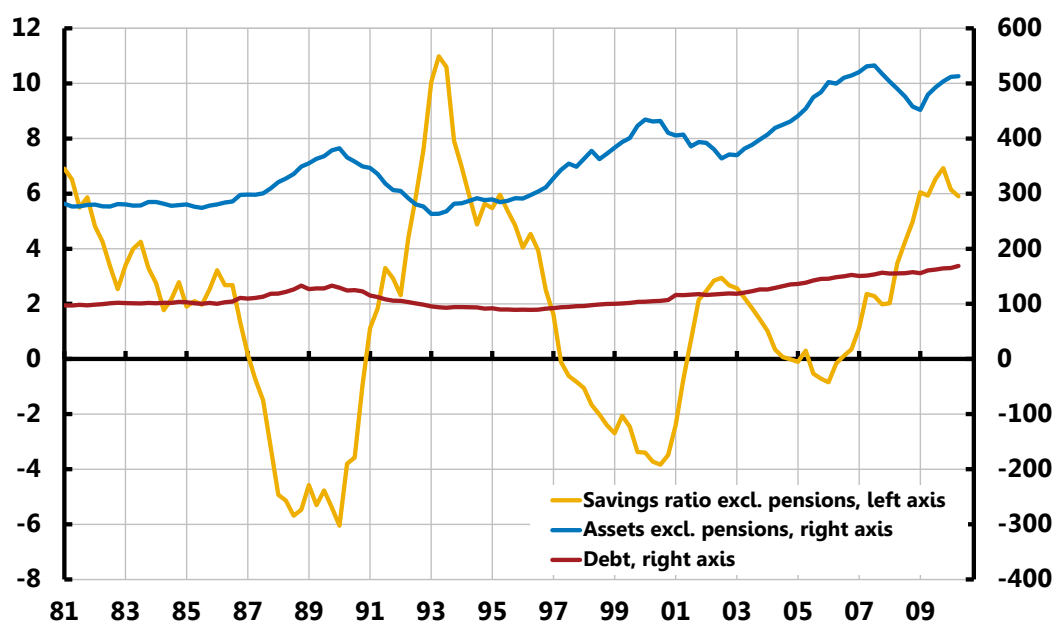
■ However, as far as I can see, there is hardly any indication that current house prices and household indebtedness are a problem.

In Sweden, mortgages do not present any threat to financial stability. This is because – unlike in the United States – mortgages are personal (what are known as full recourse loans). They do not lead to any loan losses of significance for the mortgage institutions. Mortgages did not lead to any loan losses worth mentioning even in the 1990s crisis – the banks' loan losses were primarily caused by loans for commercial property. Household debt thus does not present any threat to financial stability in Sweden.

Can house prices and household debt involve any other problems? I cannot see any indications that a house price bubble is building up or that house prices will become unsustainable in the longer run. The house price indicator published by The Economist usually points to Swedish house prices in relation to rent levels being over-valued by up to 40 per cent. However, this indicator disregards the fact that Swedish rent control means that rents are much lower than the corresponding market rents. Most indications are that house prices are compatible with the high demand and modest supply. In Sweden, there is no “buy to let”, only “buy to live”. Homes are primarily bought to live in, rather than as objects for investment or speculation. Moreover, households have strong balance sheets. When it comes to assessing possible vulnerabilities, the levels of the balance sheet are more important than the flows. A lot of fuss is made of household debt now being around 165 per cent of households' disposable income and increasing (see Figure 1). But at the same time, household wealth is about 500 per cent of their disposable income. Moreover, the debt share of the assets remains stable over time. The average household thus has debts equivalent to only one-third of its assets, while its equity is equivalent to two-thirds of its assets. This low leverage and high equity implies a large buffer against a fall in house prices.

According to the report of Finansinspektionen (2010) (the Swedish Financial Supervisory Authority), borrowers who have new mortgages and thus the largest ones, are not particularly vulnerable and can manage extreme stress tests with higher unemployment and large falls in house prices. In general, these borrowers' debt-servicing ability is very good, even when mortgage rates are much higher. The banks' credit assessments and housing cost calculations are actually conservative; based on high mortgage rates, from 6.5 per cent and up to 10 per cent. With an interest rate of 7.5 per cent, 92 per cent of households will have a surplus in a “left-to-live-on” calculation that includes generous standard deductions for the cost of living. Most households have very large surpluses, because it is the households with very high incomes that have the largest debts. If unemployment increases by a good 10 percentage points, that is, from almost 9 per cent to almost 19 per cent, and house prices fall by 20 per cent, according to the report only 4.5 per cent of these households will experience both a deficit in their “left-to-live-on” calculation and a loan-to-value ratio of more than 100 per cent.

**Figure 1. Household wealth, debts and saving ratio**  
 Percentage of disposable income



Sources: Statistics Sweden and the Riksbank

One important circumstance is that households' savings ratios are currently high, from an historical perspective (see Figure 1). This indicates that mortgages are not being used to fund consumption to any great extent. Things were different prior to the 1990s crisis. At the end of the 1980s, increased mortgages were used to fund household consumption to a large degree. This is a dangerous situation, as continued price increases then become a condition for continued mortgage increases and to uphold consumption. But this is evident in a low saving ratio. The saving ratio at the end of the 1980s was strongly negative. This indicates that households were living above their means, which is an unsustainable situation. This was also the case in the United States before the recent crisis, when the saving ratio was very low and consumption was funded by higher mortgages. The situation in Sweden now is quite different. House prices may rise or fall because of changes in the real economy. The consequences for monetary policy of a fall in house prices need not be so problematic. If this led to a fall in consumption, it would be a demand shock, which would cause lower inflation and resource utilisation. However, this could to a large degree be counteracted by more expansionary monetary policy, particularly if a relatively high percentage of borrowers with variable-rate mortgages meant that monetary policy had a greater impact.<sup>3</sup>

### Levels are more important than growth

The main message in the most recent Monetary Policy Reports and Updates has been that the Swedish economy is strong. GDP growth is good and unemploy-

<sup>3</sup> See the discussion at the monetary policy meeting in July (Sveriges Riksbank 2010b) and my criticism of the article on house prices in the July Monetary Policy Report.

ment has begun to fall. This has justified raising the repo rate. But at the same time, the *levels* of GDP, investment and exports are still low, compared with the pre-crisis levels. At the same time, the level of unemployment is much higher. The forecast for CPIF inflation is also lower than the inflation target.

Given this, my view at the October meeting was that it would be better to hold the repo rate unchanged than to raise it. Raising the repo rate will slow down the upturn, keep unemployment high and hold down CPIF inflation. In contrast, an unchanged repo rate would reduce unemployment, bringing it closer to a normal level, and increase CPIF inflation, bringing it closer to the target. This is also shown in the repo rate scenario with an unchanged rate in the October Monetary Policy Report. Figure 2 shows the repo rate path given in the main scenario, and also a higher path and a lower path, with the corresponding forecasts for CPIF inflation and unemployment and also the mean squared gap for inflation and unemployment.<sup>4</sup> A lower mean squared gap for inflation or unemployment entails a better stabilisation of the variable in question (see Svensson 2010a, b for further discussion). The mean squared gap shows that the lower repo rate path entails better-balanced monetary policy, as both inflation and unemployment are stabilised better.<sup>5</sup>

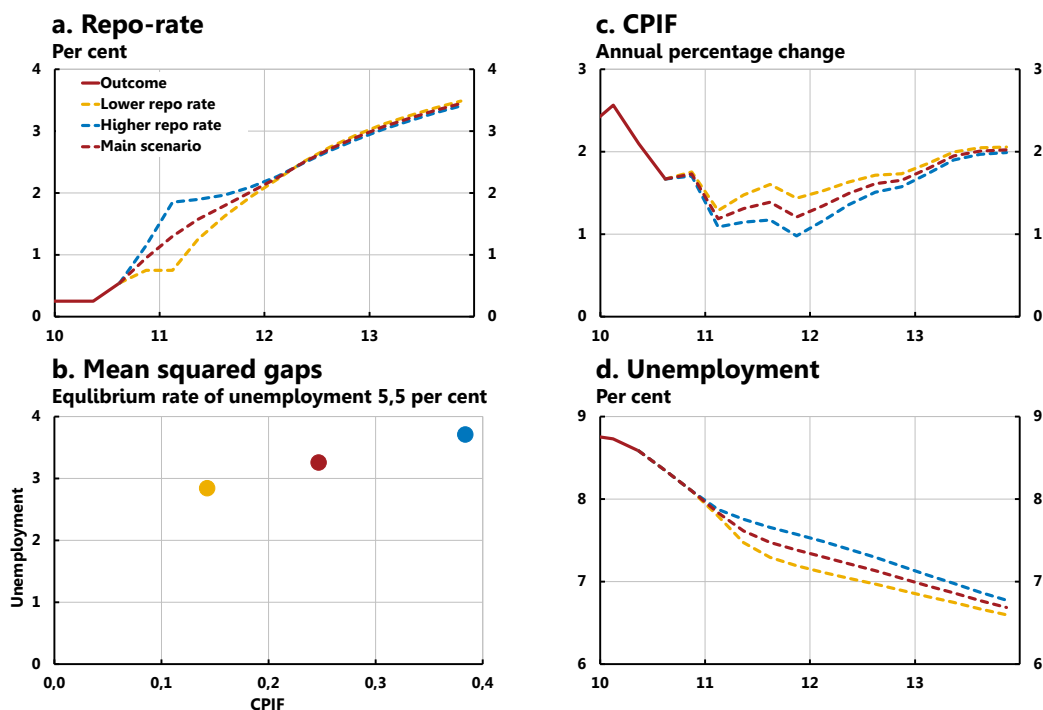
The fact that a majority of the Executive Board chooses to raise the repo rate despite the forecast for inflation undershooting the target and the forecast for unemployment being high, indicates that monetary policy is addressing something other than inflation and resource utilisation. The fact that high GDP growth is used as an argument in favour of raising the repo rate could be interpreted to mean that monetary policy in practice aims to slow down growth.

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<sup>4</sup> The mean squared gap for the inflation forecast is defined as  $\sum_{\tau=0}^T (\pi_{t+\tau,t} - \pi^*)^2 / (T+1)$ , where  $\pi_{t+\tau,t}$  signifies the forecast in quarter  $t$  for inflation in quarter  $t+\tau$ ,  $\pi^*$  signifies the inflation target, and  $T$  signifies the forecast horizon (normally 12 quarters). The mean squared gap for the unemployment forecast is defined as  $\sum_{\tau=0}^T (u_{t+\tau,t} - u^*)^2 / (T+1)$ , where  $u_{t+\tau,t}$  signifies the forecast for unemployment and  $u^*$  signifies equilibrium unemployment rate.

<sup>5</sup> In Figure 2 the unemployment gap, which is the difference between the unemployment rate and equilibrium unemployment rate, is used to measure resource utilisation. I consider the unemployment gap to be a more robust, transparent and less easily manipulated indicator of resource utilisation than the alternatives. Moreover, until new and better estimates are made, I consider equilibrium unemployment to be around 5.5 per cent. I gave more detailed motives for this at the most recent monetary policy meeting (Sveriges Riksbank 2010c). It is also easy to do sensitivity analysis with different assumptions about the equilibrium unemployment rate.

**Figure 2. Monetary policy alternatives, October 2010**  
Interest rates abroad according to the main scenario



Sources: Statistics Sweden and the Riksbank

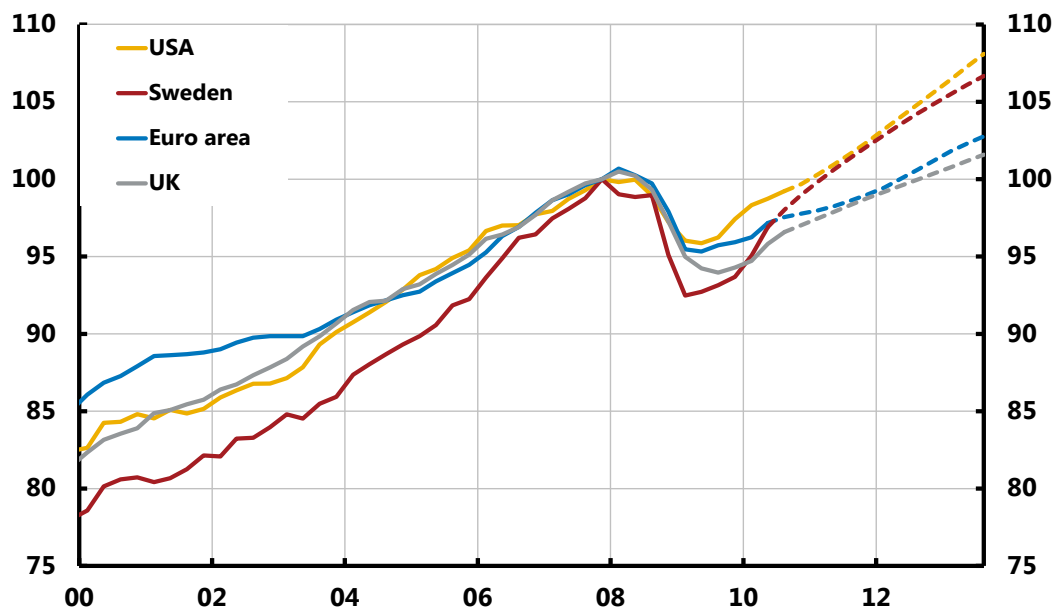
Figure 3 shows GDP developments in Sweden, the eurozone, the United Kingdom and the United States. Compared with the other economies, GDP fell most in Sweden - a total of almost 8 per cent. It has now recovered to a level that is about the same as the eurozone, higher than in the United Kingdom but far below that in the United States.



Figure 3. GDP in the USA, Sweden, the eurozone and the UK

Index 2007:Q4 = 100

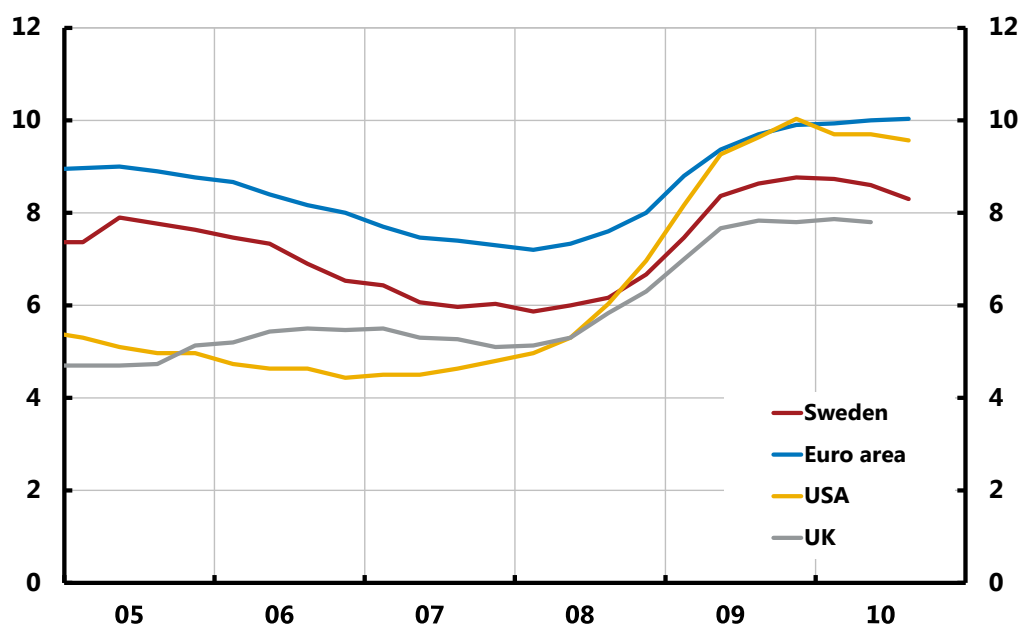
Broken lines depict forecasts from October 2010



Sources: Bureau of Economic Analysis, Eurostat, Office for National Statistics, Statistics Sweden and the Riksbank

One could claim that the other economies have substantial structural problems, including problems in the financial sector. Sweden has suffered a pure demand shock through exports, but the Swedish economy has no comparable structural problems in the financial sector or elsewhere in the economy. One might then claim that the level of *potential* production and perhaps also its growth may have fallen more in the other countries than in Sweden. In that case, the output gap is more negative in Sweden than in the other countries, with the possible exception of the United Kingdom. Using the output gap as a measure of resource utilisation, the situation in Sweden does not look too good.

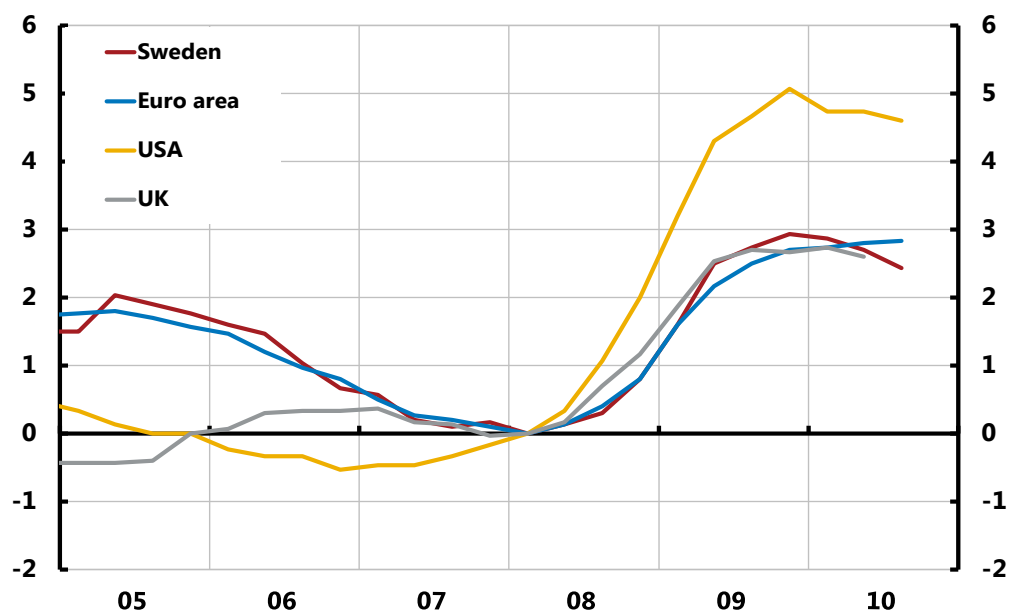
**Figure 4. Unemployment in Sweden, the eurozone, the USA and the UK**  
Per cent



Sources: Bureau of Economic Analysis, Eurostat, Office for National Statistics and Statistics Sweden

Unemployment has increased in Sweden, the eurozone, the United States and the United Kingdom (see Figure 4). Since the first quarter of 2008, unemployment has risen most in the United States and around the same amount in Sweden, the eurozone and the United Kingdom (see Figure 5).

**Figure 5. Unemployment in Sweden, the eurozone, the USA and the UK**  
Per cent, 2008:Q1 = 0

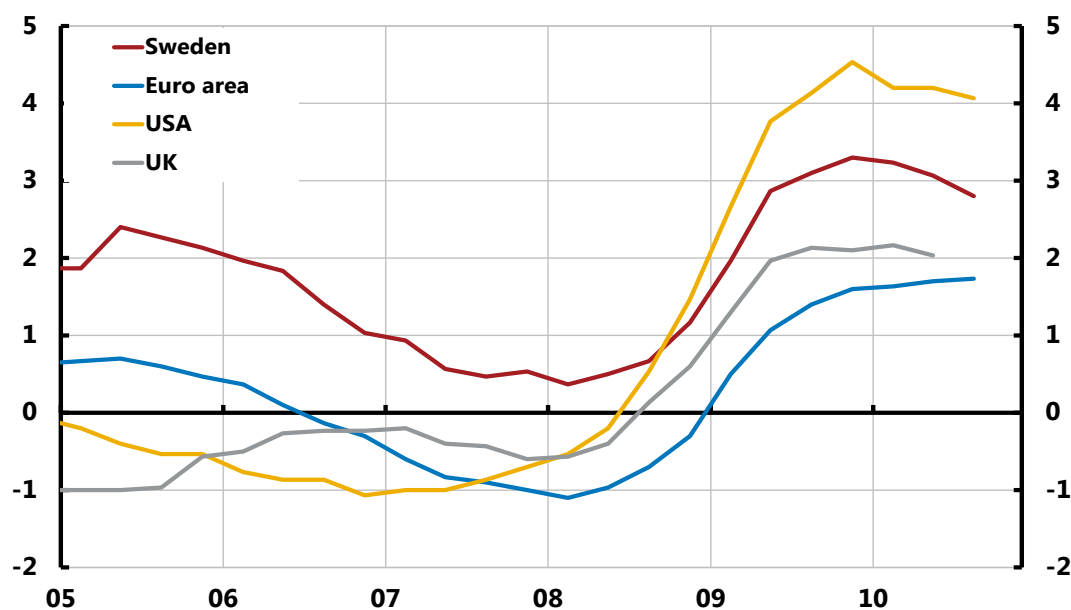


Sources: Bureau of Economic Analysis, Eurostat, Office for National Statistics and Statistics Sweden

The unemployment gap, which is the difference between unemployment and equilibrium unemployment, is shown in Figure 6. For Sweden I am assuming that

equilibrium unemployment is 5.5 per cent, and for the other economies I have used common conventional estimates. We see that the unemployment gap is biggest in the United States, next biggest in Sweden and lowest in the United Kingdom and the eurozone. If we assume that equilibrium unemployment in Sweden is 6 per cent instead of 5.5 per cent, we have the same ranking for the unemployment gap. If we assume that equilibrium unemployment is as high as 6.5 per cent in Sweden, the unemployment gap is about the same as in the eurozone and the United Kingdom.

**Figure 6. Unemployment gap in Sweden, the eurozone, the USA and the UK**  
Per cent. Equilibrium unemployment: Sweden 5.5, eurozone 8.3, USA 5.5 and UK 5.7



Sources: Bureau of Economic Analysis, Eurostat, Office for National Statistics and Statistics Sweden

These level figures showing GDP and unemployment undoubtedly provide a more nuanced picture of the Swedish economy and the level of resource utilisation than merely looking at GDP growth. Given these figures, we can wonder what justification there is for tightening monetary policy in Sweden when the central banks in the other three countries are still conducting very expansionary policies.

In the United States, Federal Reserve Chairman Ben Bernanke (2010) recently held a much-publicised speech, in which he observed that the forecast for inflation was too low and the forecast for unemployment too high, in relation to the levels compatible with the Federal Reserve's mandate. He therefore drew the following conclusion: "given the Committee's objectives, there would appear – all else being equal – to be a case for further action". Since then, the Federal Open Market Committee (FOMC) has announced that interest rates will remain low and announced a new programme for buying government bonds (called Quantitative Easing, QE2). As we saw in Figure 3, GDP in the United States fell less than that in Sweden during the crisis. As I noted earlier, potential GDP in the United States may well have fallen more than that in Sweden. A correct GDP gap could then very easily be more negative in Sweden than in the United States.

■ **The repo rate is not a target variable that needs to be “normalised”**

Another argument in favour of raising the repo rate has been that it needs to be “normalised”. According to this argument, it would be better – all else being equal – to have a repo rate closer to a normal level. As the repo rate is now so abnormally low, a “crisis rate”, it should be raised or at least not cut, even if this means we are further from the inflation target and resource utilisation is even lower than normal.

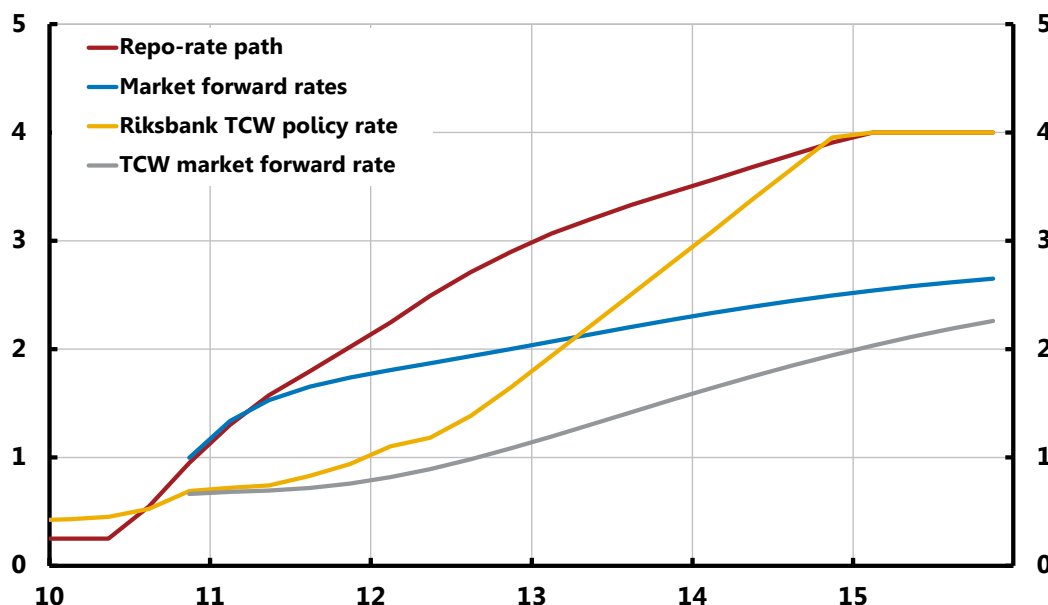
I do not agree with the normalisation argument. In my opinion, the repo rate and the repo rate path have no value in themselves – they are not target variables. A “normal repo rate” is not a target for monetary policy. There is nothing to say this would be the case, neither in the Sveriges Riksbank Act or its preparatory works, nor in the booklet “Monetary policy in Sweden”. Instead, I believe that the repo rate should in all situations be set so that inflation and resource utilisation are stabilised as far as possible, regardless of whether this requires a high or a low repo rate and regardless of whether there is a crisis or not.

**A repo rate path way above market expectations**

The repo rate path is much higher than market expectations according to implied forward rates. The repo rate path corresponds to much higher market rates than the current ones. If the repo rate path were to become credible, it would lead to a significant increase in long interest rates and a large appreciation in the Swedish krona, which would risk strangling the recovery in exports and GDP, raising unemployment and lowering inflation.

**Figure 7. The repo rate path, implied forward rates in Sweden and abroad and the forecast for policy rates abroad**

Per cent. Forward premium-adjusted implied forward rates



Sources: National sources, the Riksbank and own calculations

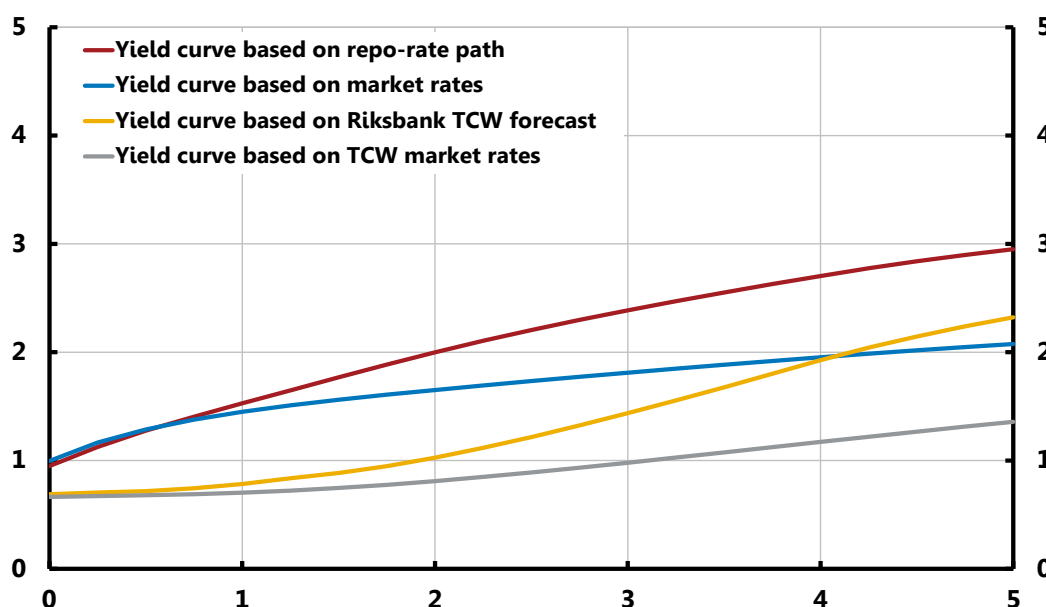
■ The reasoning can be explained with the aid of some figures. In Figure 7 the red curve shows the repo rate path in the main scenario, and the blue curve shows implied forward rates according to Swedish market rates. The curves have been extrapolated beyond the usual three-year horizon, to a five-year horizon.<sup>6</sup>

Figure 8 shows the yield curves corresponding to the curves in Figure 7. The yield curves show short and long interest rates, more precisely a zero coupon rate as a function of maturity according to the horizontal axis. The difference between the red and blue yield curves shows what would happen to interest rates for various maturities if the repo rate path were to become credible. This would cause the blue yield curve to shift upwards to the red one. A three-year interest rate would thus increase by approximately 60 basis points, and a five-year interest rate would increase by closer to 90 basis points.

Normally, the Riksbank's wish and endeavour is that the repo rate path is credible, and incorporated into market expectations and market pricing. In this way, monetary policy has the largest possible impact. This time, it seems to be less desirable. If the repo rate path were to become credible, long interest rates would rise drastically, which would mean a substantial tightening of monetary policy in relation to the present situation. In my opinion, the repo rate path in the main scenario should be one that we want to immediately become credible, if it is not already credible. That is, the repo rate path of the main scenario should be chosen such that it best stabilises inflation and resource utilisation when it is credible.

### Figure 8. Yield curves

Per cent. Time to maturity in years.



Note: To make the yield curves in Figure 8 comparable with the yield curve equivalent to the repo rate path, they have been forward premium-adjusted and are constructed on the basis of the forward premium-adjusted implied forward rate curves in Figure 7. Consequently, they deviate somewhat from the unadjusted zero coupon yield curves.

Sources: National sources, the Riksbank and own calculations

<sup>6</sup> I have extended the repo rate path beyond the three-year horizon so that the repo rate rises steadily up to a long-term level of 4 per cent.

## ■ Why such a modest krona appreciation in the main scenario?

The main scenario includes a fairly modest appreciation of the krona. Why isn't it bigger? There are two possible explanations and equivalent interpretations of the main scenario. One is that the main scenario in reality assumes higher long interest rate abroad than current market rates. As the exchange rate is affected by the difference between long domestic and foreign market rates, that is, the difference between domestic and foreign market yield curves, the main scenario thus underestimates the appreciation in the krona.

In Figure 7 the grey curve shows TCW-weighted implied forward rates according to market rates abroad. In Figure 8 the grey curve shows the corresponding TCW-weighted yield curve. The difference between the blue and grey curves in Figure 8 for a 5-year maturity shows that the current difference between a Swedish and a foreign five-year rate is around 70 points. If the repo rate path becomes credible, the difference between the red and grey curves in Figure 8 shows that the difference between a Swedish and a TCW-weighted foreign five-year rate would rise to around 160 points. This large interest differential in the main scenario should lead to a large krona appreciation. Such an appreciation of the krona would in turn contribute to significant tightening over and above the increase in long interest rates, which would have a particularly severe impact on exports and inflation. The reason why this does not occur in the main scenario is that the main scenario assumes higher long-term market rates abroad than the actually prevailing market rates.

More specifically, the main scenario assumes a forecast for TCW-weighted interest rates abroad that are much higher than the current market expectations a couple of years from now. In Figure 7 the yellow curve shows the main scenario's forecast for TCW-weighted interest rates abroad. The main scenario moreover assumes that all market agents in Sweden and abroad will not only believe in the repo rate path, but will also believe in the Riksbank's forecast for interest rates abroad. The main scenario in the Riksbank's report assumes that this belief is incorporated in market expectations of foreign interest rates and included in the pricing of foreign market rates. The yellow curve in Figure 8 shows the foreign yield curve that would then arise. The main scenario thus assumes that long-term interest rates abroad are much higher than prevailing market rates (which are represented by the grey curve in Figure 8). The difference between a Swedish and a foreign five-year interest rate is approximately 60 basis points, much less than the difference of around 160 basis points described above. According to the latter, greater difference, the main scenario will lead to a much stronger krona appreciation.

It is important to understand that it is the actual difference between long-term Swedish and long-term foreign market rates that affects the prevailing exchange rate. This is the case regardless of whether or not these long-term interest rates correspond to market expectations of short-term rates. It thus applies regardless of whether or not long-term interest rates are affected by depressed forward premiums (for instance, as a result of the Federal Reserve's purchases of government securities). It also applies regardless of whether market expectations are good and reliable forecasters of future interest rates. The assumptions we make about long-term Swedish and foreign interest rates are thus important.

■ This was one possible explanation why the main scenario contains such a modest krona appreciation. The other possible explanation and corresponding interpretation of the main scenario can be described as follows. In Figure 7 the red and yellow curves show the Riksbank's forecasts for the repo rate and the TCW-weighted policy rates abroad, respectively. At the same time, the blue and grey curves show market expectations of the repo rate and the TCW-weighted policy rates abroad, respectively. If the current repo rate and the actual policy rates abroad develop over time according to the red and grey curves, the market will be surprised if the repo rate and foreign policy rates are raised more quickly than expected. The market will then gradually raise its expectations of future interest rates. That is, over time the blue and grey curves will show an upward shift. This means that the corresponding blue and grey yield curves in Figure 8 will shift upwards over time. If they shift upwards in tandem, the interest rate differential between long-term Swedish interest rates and interest rates abroad does not change, and there is thus no large krona appreciation.

According to one of the interpretations of the main scenario, the assumption is thus that long-term market rates abroad are much higher than the prevailing observed market rates. According to the other interpretation, the assumption is that long-term market rates abroad will rise gradually in pace with Swedish long-term interest rates. It is not clear from the Monetary Policy Report which interpretation is correct. The questions regarding the two interpretations have not been thoroughly analysed.

### **Unrealistic assumption regarding foreign policy rates**

In both of these interpretations of the main scenario the high TCW-weighted foreign policy rate path plays an important role. Behind the main scenario's TCW-weighted repo rate path lies the assumption, in my opinion an unrealistic one, that the Federal Reserve, the ECB and the Bank of England will start to raise their policy rates sooner than is indicated by prevailing market rates. For example, both the Federal Reserve and the Bank of England are assumed to start raising their policy rates within a year.

If one is to produce a forecast for foreign policy rates that deviates from market pricing, I believe that great emphasis should be placed on the assessments made by the Federal Reserve, the ECB and the Bank of England themselves, as well as on the signals they give. These institutions have better information on their own economies, greater resources for analysis and investigation and, above all, better information regarding their own plans. In my opinion, one must have strong and clear reasons for arriving at another conclusion than that stated and signalled by these central banks themselves.

The statements and signals from the Federal Reserve are hardly compatible with a forecast that they will begin raising their policy rate in 2011. Here I refer for instance to Ben Bernanke's recent speech (2010) and to the most recent decision by the FOMC on a new round of Quantitative Easing (QE2), which means that the Federal Reserve will buy government bonds regularly up to summer 2011 for the purpose of lowering long-term interest rates in the United States.

As regards the ECB, in my opinion the best information and signals are those presented in the ECB Staff Forecast (2010) at the beginning of September. The forecast is based on an assumption that the Eonia interest rate, the overnight rate in

the eurozone, will follow market expectations. The forecast shows that inflation will be below the ECB's target of "below, but close to, 2 per cent" and that the real economy will be weak. If anything, it indicates that the ECB will follow a policy rate path that is lower than market expectations.

With regard to the Bank of England, their Inflation Report published in August (Bank of England 2010a) contains a forecast that is also based on the policy rate following market expectations, where inflation falls slightly below the target in two years' time, and GDP growth is close to its historical average, and the GDP level is still lower than before the crisis. This and the minutes from the meeting in October (Bank of England 2010c) do not indicate that the Bank of England will follow a policy rate path that is higher than market expectations.<sup>7</sup>

If the statements and signals from these central banks indicate interest rate paths in line with or below market expectations, it is not reasonable, in my opinion, to assume – as the main scenario does – that foreign interest rate paths will be clearly above market expectations. In this situation it is more reasonable, at the very least, to proceed on the basis of market expectations according to implied forward rates.

One reason for assuming higher future policy rates than the market pricing may be that these abnormally low nominal and real interest rates are not compatible with the Riksbank's usual models and with the historical patterns for how foreign inflation, GDP and interest rates interact. Such low real interest rates would normally lead to GDP and inflation abroad being unreasonably high. If reality and models differ, it is in my opinion reality that applies. In the current abnormal times, models and historical patterns do not work so well and should to a great extent be replaced by judgement. In my opinion, the forecasts for inflation and GDP abroad under the current abnormal circumstances are compatible with the low interest rates abroad.

### Monetary policy alternatives in October

I would thus claim that the assumption in the main scenario that policy rates abroad will be high is unrealistic, and that it is more reasonable to assume a forecast for policy rates abroad that is compatible with market expectations of interest rates abroad. This also means assuming the prevailing actual long interest rates abroad with regard to the effect on the exchange rate.

Figure 9 shows monetary policy alternatives, all under the assumption of a forecast for policy rates abroad in line with market expectations, that is, a forecast for policy rates abroad that follows the grey curve in Figure 7. Figure 9a shows different interest rate paths. The red broken curve, called "Main scenario repo rate path", is the main scenario's repo rate path. The blue broken curve, called "Riksbank's reaction function", shows the repo rate path arising from the Riksbank's historical reaction function when policy rates abroad are compatible with the prevailing market expectations. The yellow broken curve, called "Market repo rate path", shows the prevailing market expectations for the repo rate. The grey broken curve called "Low interest rate path without initial increase" shows an inter-

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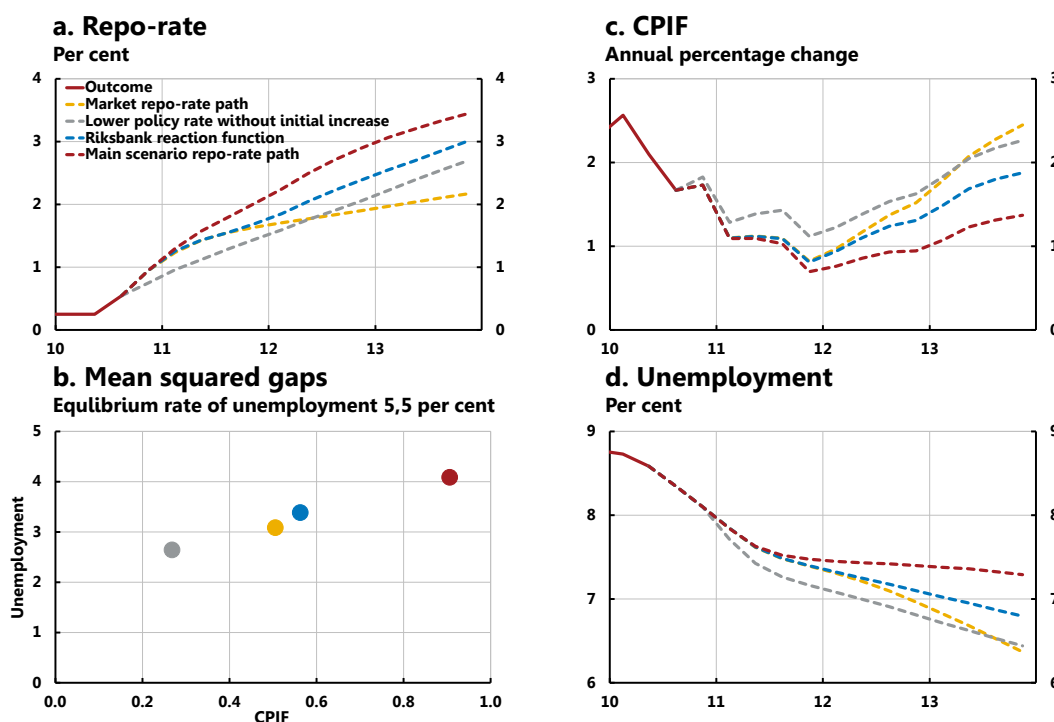
<sup>7</sup> After the Riksbank's monetary policy meeting the Inflation Report and minutes from the meeting in November have been published (Bank of England 2010b, c). Neither do they indicate a policy rate path above market expectations.



est rate path with an unchanged repo rate in October and then a gradual increase up to around 2.7 per cent at the end of the forecast period, that is, the repo rate path advocated by Karolina Ekholm and myself at the monetary policy meeting in October.

Figures 9c and 9d show with the same colours the corresponding forecasts for CPIF inflation and unemployment, all conditional on policy rates abroad according to market expectations.

**Figure 9. Monetary policy alternatives, October 2010**  
Interest rates abroad according to market expectations



Sources: Statistics Sweden, the Riksbank and own calculations

Figures 9c and 9d clearly show that the low repo rate path without initial increase provides the best outcome, with a CPIF forecast closest to the target and with the lowest unemployment forecast. This is also illustrated with the aid of the mean squared gaps in Figure 9b, in which this repo rate path results in a point corresponding to a lower mean squared gap for both the CPIF and unemployment. The mean squared gap for the unemployment gap is calculated on the basis of an equilibrium unemployment rate of 5.5 per cent. The low repo rate path dominates, even if the equilibrium unemployment rate is assumed to be as high as 6.5 per cent.

Judging from this figure, an even lower repo rate path could provide an even better outcome for CPIF inflation and unemployment. One example of this is a repo rate path that initially coincides with the grey repo rate path, but then from the middle of 2012 onwards changes over to the yellow path given by market expectations. It may very well be the case that an even lower repo rate path provides an even better outcome for inflation and unemployment. However, more careful analysis and alternative forecasts are needed before the best repo rate path can

be established, particularly because so much of the analysis at the most recent monetary policy meeting focused on what I consider to be the unrealistic main scenario in the Monetary Policy Report.

Given this, I therefore considered at the meeting that the grey repo rate path shown in Figure 9a, with an unchanged repo rate at the meeting and then a gradual rise to a level of 2.7 per cent at the end of the forecast period, which is roughly mid-way between the main scenario and market expectations, would be a reasonable compromise for now, until a new review is made prior to the next monetary policy meeting. Such a discussion could well result in a lower repo rate path.

### **Proposals for possible solutions**

From this discussion, I would like to propose the following possible solutions to the Swedish monetary policy problems:

We should consistently choose the repo rate path that best stabilises inflation around the inflation target and resource utilisation around a normal level, regardless of whether GDP growth is high or low, and regardless of whether the repo rate is high or low.

If the chosen repo rate path then offers a threat to financial stability – which would appear to be a rare situation – this should be taken into account and this repo rate path excluded if it is appropriate. The motives for these actions should then be explained.

When choosing a repo rate path, we should take into account house prices and household borrowing if they affect the forecasts for inflation and resource utilisation in the short or long term. If such considerations affect the repo rate path, we must carefully justify our decision. For instance, we should explain why potential advantages in the longer run are greater than potential disadvantages for inflation and resource utilisation in the short run.

If house prices and household borrowing become unsustainable, or are judged to entail other problems, then other and better instruments should be used to deal with this than the repo rate. Trying to use the policy rate to slow down house prices and household debt could lead to high costs for the real economy in terms of lower production and employment, and higher unemployment. There are several measures that have a greater effect on house prices and household borrowing than the policy rate, and at the same time entail lower costs for the real economy. In general, the problem needs to be analysed and specified, for instance, in the form of which market failures or which externalities or which consumer protection inadequacies it entails, to determine what measures can be used to deal with the problem closest to its source and at the lowest cost. The most suitable measure is probably one that is currently under the jurisdiction of another government agency, and not the Riksbank.

To avoid the current problems with large differences between the repo rate path and market expectations, the decision-making process should start with forecasts for inflation and resource utilisation conditional on market expectations of interest rates in Sweden and abroad, that is, forecasts for the repo rate and policy rates abroad that are in line with market expectations according to implied forward rates in Sweden and abroad. The Riksbank used to make such forecasts ear-

■ lier, before forecasts conditional on an own repo rate path were introduced, and the Bank of England and the ECB make such forecasts now. The methods for producing these forecasts may need improvement. The forecasts can then be used as a starting point for assessing whether a repo rate path that deviates from market expectations is necessary to best stabilise inflation and resource utilisation.

The decision-making process can then continue with forecasts for inflation and resource utilisation conditional on alternative repo rate paths, to determine which repo rate path is judged to best stabilise inflation and resource utilisation. These forecasts can be made under two different assumptions. One assumption is that the alternative repo rate path will become credible and be incorporated into market expectations. Forecasts under this assumption can be constructed by using what are known as anticipated deviations of the repo rate path (Laséen and Svensson 2010 and Svensson 2010b). The other assumption is that the alternative repo rate path is not credible, that market participants are surprised when the actual repo rate deviates from the expected one. Forecasts under this assumption can be constructed by using what are known as unanticipated deviations of the repo rate path. The assumption used should depend on the circumstances and the motives for this choice should be stated.

Normally, the repo rate path that is included in the main scenario of the report should be chosen such that it best stabilises inflation and resource utilisation when it is credible. The starting point should be that the analysis in the Monetary Policy Report/Update and in other information from the Riksbank is so complete, well-reasoned and convincing that it gives the repo rate path credibility.

Forecasts for policy rates abroad should primarily be based on market expectations according to implied forward rates. This has the advantage that there is no contradiction between long market rates abroad and the forecast for policy rates abroad, which makes it easier to determine the effects on the exchange rate. If there are special reasons for assuming forecasts for policy rates abroad that deviate from market expectations, this should be explained and justified. In these cases one should construct forecasts for inflation and resource utilisation using unanticipated deviations, where market participants are surprised by the actual policy rates abroad deviating from what was expected. The exchange rate determination will then be correctly based on long market rates abroad, even when the Riksbank's forecast for policy rates abroad deviates from that implied by these market rates.

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