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REG. [Diarienummer]

# Annex 1 - Memorandum

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DEPARTMENT: Monetary Policy

## Change of target variable and introduction of variation band

### Summary

Ever since inflation targeting was introduced in 1993, the Riksbank has defined the target in terms of the annual change in the consumer price index (CPI). However, the CPI has characteristics that at times can make it problematic to use as guidance for monetary policy. This is because policy rate adjustments have large and direct effects on the CPI which are not connected to underlying inflationary pressures and which are also counter-productive. This means, for example, that interest rate cuts, which are intended to bring inflation up, instead further lower CPI inflation over the short term. With the major adjustments made to the policy rate in recent years, this has led to problems in communication. The Riksbank is consequently considering changing target variable to the consumer price index with a fixed interest rate (CPIF).

The amendment under consideration is for the target for monetary policy to be an annual change in the CPIF of 2 per cent. However, it is not possible for the Riksbank to achieve this target every single month, so, for various reasons, inflation will vary around 2 per cent. To illustrate this uncertainty, the Riksbank is considering using a variation band of +/- 1 percentage point for the outcome of the CPIF in future communication. This variation band, stretching between 1–3 per cent, captures about three-quarters of the outcomes of the CPIF since 1995.<sup>1</sup> The width of the variation band is based on the historical development of inflation and should thus be reviewed as necessary.

The changes now being considered will not entail any change to the monetary policy being conducted. For some time, the CPIF has formed the Riksbank's operational target variable. It is now being considered to codify this practice by defining the target as a 2 per cent annual change in the CPIF. In other words, the variation band under

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<sup>1</sup> The inflation target was introduced in 1993 but did not start to apply until the start of 1995. Statistics Sweden began publishing the CPIF in July 2008, at the request of the Riksbank. Statistics Sweden's time series stretches back to 1988.

consideration is not a so-called target range.<sup>2</sup> This means that the Riksbank will always strive towards 2 per cent inflation, regardless of whether outcome is within or beyond the variation band.

## Changes under consideration compared with the present arrangements

### Target variable

#### Present arrangements

Ever since inflation targeting was introduced in 1993, the Riksbank has defined the target as the annual increase of the consumer price index (CPI) by 2 per cent.

#### Change under consideration

The Riksbank defines the inflation target as a 2 per cent annual increase of the consumer price index with a fixed interest rate. The amendment, should the Riksbank decide in favour of it, would be expected to enter into force in conjunction with the monetary policy meeting to be held in September 2017.

#### Reasons for the considerations<sup>3</sup>

When inflation targeting was introduced, the CPI was chosen as a target variable, very much because it was a well-known and well-established measure. However, after only a few years it became clear that this choice entailed certain challenges.<sup>4</sup> The foremost reason for this is that changes in the Riksbank's policy rate have direct short-term effects on inflation. When, for example, the Riksbank cuts the repo rate to raise the rate of inflation, mortgage rates will decline. Mortgage rates are included in the owner-occupied housing expenses item in the CPI and the rate cut will therefore exert downward pressure on the index. This direct effect on the CPI thus goes in the "wrong direction"; in other words, the policy rate cut leads to a drop in near-term inflation.

For this and other reasons connected with matters such as tax adjustments and volatile energy prices, the Riksbank has regularly allowed the development of price indices other than the CPI to influence interest rate decisions. In recent years, the CPIF (the CPI with a fixed interest rate) has de facto served as an intermediate target variable insofar as the Riksbank has usually aimed for CPIF inflation being close to 2 per cent within around two years. The idea was that, even if rates sometimes go up and down, CPI and CPIF inflation will eventually coincide when the interest rate stabilises.

However, in the past few years, the deviations between the CPI and CPIF have been substantial – both upwards and downwards. For example, the period of rate cuts that commenced in December 2011 has contributed to CPI inflation being on average 0.6

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<sup>2</sup> For a discussion of the terms target range and tolerance band, see "The Riksbank's inflation target – target variable and interval", Riksbank Studies, September 2016.

<sup>3</sup> This section is based on "The Riksbank's inflation target – target variable and interval", Riksbank Studies, September 2016.

<sup>4</sup> See, for example, Heikensten, L. (1999), "The Riksbank's inflation target – clarifications and evaluation", *Sveriges Riksbank Quarterly Review*, 1999:1, Sveriges Riksbank.

percentage points below CPIF inflation. Conversely, CPI inflation will rise quickly and exceed CPIF inflation when the repo rate is eventually raised.

Large and protracted differences between CPI and CPIF inflation can cause a number of problems. Perhaps the most serious one is that participants in the economy might start to question whether the Riksbank is actually stabilising CPI inflation around the target by stabilising CPIF inflation around 2 per cent. This can lead to confidence in the inflation target decreasing, and long-term inflation expectations starting to drift away.

Another problem is that evaluations of monetary policy are made more difficult if there are major differences between the progression of the variable that guides the Riksbank and the formal target variable.

A third problem is that both domestic and overseas analysts often do not take how the CPI is constructed into account when describing the situation in Sweden. This can, for instance, lead to misleading international comparisons. For example, in the past few years, media reports have emerged from time to time describing how Sweden is in a state of deflation. This can give the impression of the situation in Sweden being worse, and inflation much lower than in other countries, despite the main difference being that the Swedish CPI is more sensitive to changes in the policy rate than corresponding price indices in other countries. Ultimately, this could also impact inflation expectations.

It is important to point out that the EU-harmonised index for consumer prices (HICP) could also serve as a target variable. A switch to the HICP as target variable was discussed in the Riksbank as long ago as the second half of the 1990s. The work of harmonising the HICP was still in progress, which argued against a transition to the HICP. Instead, the Executive Board decided in 1999 to retain the CPI as a target variable but to clarify the structure of monetary policy by explaining how temporary deviations from the inflation target should be managed. However, the HICP is an important variable for the Riksbank as it is used in comparisons of the development of inflation in EU member states. For example, in the regular convergence reports produced concerning the EU countries as yet to adopt the single currency, inflation is measured on the basis of the HICP, which is constructed to make it possible to assess convergence in terms of price stability in a comparable manner. However, the Riksbank's assessment is that changing to the HICP now could lead to a conflict with the message of unchanged monetary policy in conjunction with the change of target variable. However, it should be added that the differences in the rate of inflation measured in terms of the HICP as opposed to the CPIF are minor in practice.

## Introduction of variation band

### **System until 2010**

Previously, the Riksbank had a so-called tolerance band, formulated as +/- 1 percentage point around the inflation target. This band was removed in 2010, when it was deemed that the band no longer served any practical purpose.

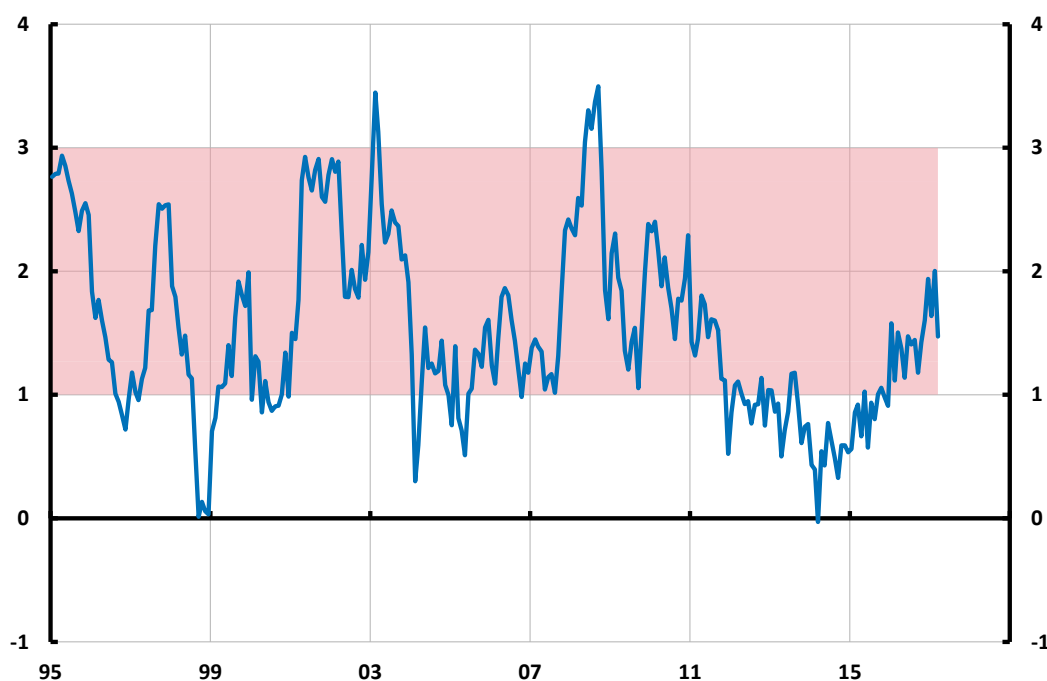
### **Change under consideration**

The Riksbank starts to use a so-called variation band around the inflation target. The variation band refers to the outcome for the CPIF and stretches between 1–3 per cent,

i.e. +/- 1 percentage point around the target of 2 per cent, and captures three-quarters of historical outcomes in the CPIF over the period 1995–2016 (see Figure 1). The band aims to reflect the actual variation in the CPIF and should therefore be reviewed when necessary. The variation band is a communicative tool intended to illustrate, in a simple way, the fact that the development of inflation is always uncertain. Inflation outcomes outside the variation band should not, in themselves, lead to monetary policy measures.

**Figure 1. Variation band for the CPIF: +/- 1 percentage point around the target of 2 per cent**

Annual percentage change



### Reasons for the considerations

Monetary policy is conducted under great uncertainty. There exists uncertainty over the way the economy functions and how inflation is determined, at the same time as monetary policy measures act subject to long and varying time lags. All in all, this means that monetary policy's ability to govern inflation precisely is low.<sup>5</sup> However, the debate on monetary policy prior to the financial crisis, when unexpected deviations of a few tenths were occasionally given great attention, indicates that the Riksbank needs to

<sup>5</sup> In addition to this reasoning, like all economic statistics, inflation is measured with an error. Statistics Sweden distinguishes three different sources of error in the CPI: coverage errors (not all product groups are investigated), selection uncertainty (e.g. not all points of sale are investigated) and uncertainty due to quality adjustments made in measures of price. Statistics Sweden has estimated the size of selection uncertainty and reports this as a 95 per cent confidence interval of +/- 0.25 percentage points around an annual percentage change in the CPI. As regards coverage errors and quality adjustments, there are no quantitative estimates and it is therefore not possible to say whether the errors would be greater or smaller if these sources of error were included.

continue to develop its communication on how much uncertainty can normally be expected to be linked to the development of inflation. A so-called variation band could act as a tool, in various contexts, to simply illustrate and remind people that inflation varies over the short term for many different reasons.

At the same time, it is important to safeguard the task of the inflation target as nominal anchor for price-setting and wage-formation. This was also discussed during the discussions the Riksbank held in the autumn of 2016 with the labour market parties, participants on the financial markets and others.<sup>6</sup> In these discussions, certain concerns were raised that an interval could be interpreted as an abandonment by monetary policy of the ambition to stabilise inflation around 2 per cent. With the aim of countering interpretations of this kind, the interval is given a new name, the 'variation band'.

The variation band is a communicative tool aimed to illustrate, in a simple way, different kinds of uncertainty. The target for monetary policy is unchanged, which is to say that monetary policy is formulated so that the rate of inflation is stabilised around 2 per cent. In other words, the variation band is not a so-called target range. This means that the Riksbank will always strive towards 2 per cent inflation, regardless of whether outcome is within or beyond the variation band.

## Consequences of the changes under consideration

### Monetary policy consequences

The changes will not affect how monetary policy is conducted. The monetary policy strategy remains firm. The target for monetary policy is that the annual change in the CPIF shall be 2 per cent. The variation band is a communicative tool intended to illustrate, in a simple way, the fact that the development of inflation is uncertain. Inflation outcomes outside the variation band should not, in themselves, lead to monetary policy measures.

### Consequences in other areas

#### The financial markets

On the financial markets, real government bonds are indexed to the CPI. Financial contracts could be reformulated in terms of the CPIF instead of the CPI, which should be possible without disruptions.

#### Inflation expectations

The inflation target is to work as a benchmark for expectations in the economy and thereby lay the foundations for efficient price-setting and wage formation. The CPIF is a

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<sup>6</sup> The discussions were held after the publication of "The Riksbank's inflation target – target variable and interval", Riksbank Studies, September 2016, and used a number of questions asked in the foreword to the study as a starting point.



broad index that captures the inflation that is relevant for consumers and wage earners. It is the Riksbank's assessment that the CPIF can act as a good benchmark for expectations. The variation band is only intended to illustrate uncertainty over the functioning of the economy and the precision of monetary policy. Inflation expectations should not be affected negatively by a variation band in that the target of 2 per cent still stands.

### **Public finances**

Several taxes and public expenditure items have a direct connection to inflation measured as the CPI or indirectly via the price base amount. This applies above all to social protection systems directed at households and certain specific taxes. The change of target variable from CPI to CPIF is a codification of current practice and consequently will not lead to a different development of the CPI and price base amount. The effects on public finances will therefore be negligible.

### **Continued process**

The Riksbank will take a decision on the matter after having examined the consultation bodies' opinions. Should the Riksbank decide in favour of the changes being considered, these will initially be applied at the monetary policy meeting in September 2017.