

ARTICLE – How the Riksbank develops its monetary policy

The Riksbank works constantly on improving its monetary policy analysis. In 2019, work focused on areas like the development of the Swedish krona, which continued to be a key issue. The Riksbank's analysis in this area is described in the article "The Riksbank's exchange rate forecasts". Apart from the exchange rate, other aspects of the Swedish economy's international dependence were also the focus of the Riksbank's analysis. Furthermore, a new index was developed that makes it possible to assess financial conditions in Sweden. During the year, work also continued on increasing understanding of the economic consequences of structural changes linked to, for instance, demography and rapid technological development. The analysis of the conditions for stabilisation policy in Sweden was also deepened.

The Riksbank works constantly on improving its monetary policy analysis and studying the effects of monetary policy on the economy. This work includes both the analysis of different aspects of economic developments and the development of models that capture how the economy functions in a changing world.⁶⁰

In-depth analysis of the Swedish economy's international dependence

As in 2018, the Riksbank's development work in 2019 mostly concentrated on the development of the krona and several analyses on the subject were published – see also the article "The Riksbank's exchange rate forecasts". Factors that determine the exchange rate were also in focus at a conference on business cycles in small, open economies, which the Riksbank organised together with the central banks of Australia, Canada, Norway and New Zealand.

In addition to the exchange rate, other aspects of the Swedish economy's international dependence were also in focus in the Riksbank's analysis, including the development of Swedish labour costs in an international perspective. If Swedish labour costs increase more than those abroad, Swedish goods and services will be relatively more expensive and it will be more difficult for them to compete on a global market. Swedish wage formation should however be able to disregard this if the krona exchange rate depreciates at the same time and evens out the difference in labour costs in relation to abroad. But the krona is also affected by several other factors.

An article in the February Monetary Policy Report analysed how Swedish labour costs compare in an international perspective.⁶¹ The conclusion was that Swedish unit labour costs were low at the beginning of 2019 compared with most competitor countries measured in the

same currency. The depreciation of the krona that had occurred up to then was an important explanation for this.

Conclusions on how economic prosperity has developed in Sweden compared with other countries can be influenced by the measures used in the comparison. This was studied in an Economic Commentary.⁶² The conclusion was that Swedish prosperity growth has been quite stable in a longer-term perspective, and although the level has fallen slightly relative to other countries in recent years, it still compares well internationally.

Conclusions on economic development in different countries are not just influenced by the statistical measures that are compared, but also by *how* the statistics are calculated. Notwithstanding international calculation conventions, statistics producers in different countries are of necessity faced with choices that can matter when they wish to make comparisons with other countries. A staff memo studied how the comparisons of price statistics can be affected by the adjustments made in order to take quality changes into consideration.⁶³ It was shown that the relative development of prices adjusted for such changes differs considerably between different countries, which may be due to the choice of different calculation methods. The differences are so substantial that they may affect comparisons of the inflation rate in different countries, measured in terms of the annual percentage change in the EU-harmonised price index, the HICP. A comparison of the included sub-indices showed, for example, that the development of prices adjusted for quality changes has helped to push down inflation in Sweden quite substantially compared to in other countries.

⁶⁰ In 2019, the project to update and further develop a new macroeconomic model for the Swedish economy, MAJA (Model for General Equilibrium Analysis), which replaces the earlier model RAMSES. Information and documentation on the new model will be published in 2020.

⁶¹ "Development of Swedish labour costs in an international perspective", article in Monetary Policy Report, February 2019.

⁶² H. Gabriëlsson, "How does prosperity growth compare with other countries?", *Economic Commentaries* no. 10, 2019.

⁶³ O. Tysklind, "Quality adjustments and international price comparisons", Staff Memo, January 2020.

New measure of financial conditions in Sweden

Monitoring and understanding developments on the financial markets is an important part of the monetary policy drafting process. Conditions on the financial markets not only reflect developments in the economy, but can also drive them. In addition, financial conditions are important as monetary policy affects to a large extent output, employment and inflation via the financial system. There are therefore several reasons for the Riksbank to analyse how financial conditions develop. As the conditions cannot be observed directly, they must be estimated in some way.

In 2019, the Riksbank developed a new index (the FCI, Financial Conditions Index) that reflects the financial conditions in Sweden by summarising the status for a number of indicators on important sub-markets in the Swedish financial system. The index weighs together indicators that reflect developments on the housing market, bond market, money market, equity market and foreign exchange market.⁶⁴ The Riksbank's FCI was presented in a Staff Memo that showed, for example, that the index provides a reasonable description of the financial conditions in Sweden since the beginning of the 1990s. The index is also robust in that it indicates a development similar to other FCIs based on more complicated calculations.

What are the effects of changes to the Swedish economy's supply side?

In the period ahead, monetary policy both in Sweden and abroad will be conducted in an environment in which major change is occurring on the economy's supply side. One of the reasons for this is the ongoing demographic changes, with an increasing proportion of older people in the population and large migration flows. In 2019, the Riksbank continued the work of improving its understanding of these conditions. Among other things, it published a research review of migration to Sweden in recent decades and the macroeconomic effects immigration can have.⁶⁵ One specific question was whether immigration may make it easier to support an ageing population. Its conclusion was that immigration could help with this but that this would require integration into the labour market to function better than it does today. Another research review compared different sources of labour market statistics, including the picture they give of the situation for foreign-born persons. The analysis showed how a more complete picture of the Swedish labour market can be obtained by combining the various sources.⁶⁶

Another trend with potentially major consequences for the labour market is the ongoing technological development with automation and robotisation. An Economic Commentary on empirical research in this area concluded that it is impossible to say whether total employment so far has decreased due to technological development.⁶⁷ On the other hand, some groups have been impacted harder as their skills are no longer in demand on the labour market to the same extent as previously. Rapid technological development thus risks leading to a clear division on the labour market. It is therefore necessary for the economy to have the ability to adjust so that resources can be transferred smoothly between activities and sectors.

An article in Sveriges Riksbank Economic Review summarised the findings in research literature as regards the effects of major structural changes that have affected the Swedish labour market over the last 25 years, including various reforms, changed demography and increased foreign trade.⁶⁸ One of the conclusions was that trade has had some effects on wages. But it is above all technological development that has benefited the highly educated that has had an effect on wage formation in that wage differentiation has increased.

Another article investigated whether structural changes on the labour market can explain the restrained development of prices and wages in recent years.⁶⁹ The conclusion was that increased labour force participation, weakened bargaining power among employees and a lower compensation rate during unemployment may have contributed to the development. Some of these changes may also have contributed to the increasingly high resource utilisation in the economy not leading to the same level of large wage growth as in previous years. However, this does not necessarily mean that the ability of monetary policy to affect inflation has diminished. An Economic Commentary showed that there is still a strong connection on the corporate level between sales prices and resource utilisation.⁷⁰

In-depth analysis of the conditions for stabilisation policy

When the general level of interest rates is low, monetary policy's ability to counteract weaker economic developments depends, among other things, on how far it is possible, in practice, to cut the repo rate. The Riksbank and a couple of other central banks have cut their policy rates to below zero, which was previously considered the lower bound. A staff memo analysed Sweden's experiences.⁷¹ The analysis showed that market rates, both interbank rates and yields for

⁶⁴ J. Alsterlind, M. Lindskog, and T. von Brömsen, "An index for financial conditions" Staff Memo, February 2020.

⁶⁵ Å. Olli Segendorf and E. Theobald, "Can immigration resolve the problem of an ageing population?", *Sveriges Riksbank Economic Review* no. 1, 2019.

⁶⁶ I. Häkkinen Skans, "Developments on the labour market according to different statistical sources", *Economic Commentaries*, no. 6 2019.

⁶⁷ I. Häkkinen Skans, "Technological change and the labour market", *Economic Commentaries* no. 7, 2019.

⁶⁸ A. Westermark, "How can different structural changes in the economy affect wages and inflation?", *Sveriges Riksbank Economic Review*, no. 2, 2019.

⁶⁹ M. Jonsson and E. Theobald, "Changed labour market – effects on prices and wages, the Phillips curve and the Beveridge curve", *Sveriges Riksbank Economic Review* no. 1, 2019.

⁷⁰ E. Frohm, "The relationship between resource utilisation and inflation: a micro data perspective", *Economic Commentaries*, no. 1, 2019.

⁷¹ H. Erikson and D. Vestin, "Pass-through at Mildly Negative Policy Rates: The Swedish Case", Staff Memo, January 2019.

government bonds, have followed the policy rate in tandem with the cuts. On the other hand, the banks' deposit rates have not fallen to a corresponding degree, something that the Riksbank had not expected either. The banks' lending rates with a three-month fixation period – the variable mortgage rates – have, however, followed the cuts to the policy rate, albeit after some delay. The conclusion of the analysis was that cuts taking the policy rate below zero have had an effect and have contributed to stimulating the economy further.⁷²

The Riksbank and other central banks have had to cut their policy rates to today's very low levels as the level of interest rates in general in the global economy has gradually fallen over a number of decades. This has contributed to borrowing costs for purchases of houses and tenant-owned apartments have fallen, meaning that it has been cheap for Swedish households to borrow and that their debts have risen. A staff memo analysed how the functioning of the economy is affected when households are highly indebted and what this means for monetary policy.⁷³ Among other things, the analysis showed that unexpected changes in monetary policy have a greater impact on the economy in such an environment as households are more sensitive to changes in the interest rate. But higher interest-rate sensitivity among households also means that the economy as a whole becomes sensitive to shocks to the financial system.

One question that received increasing focus in the economic debate over the year concerned the extent to which fiscal policy needs to take greater responsibility in a future economic downturn. One argument for placing greater responsibility on fiscal policy is the fact that the low level of interest rates restricts the scope of monetary policy, while the scope of fiscal policy increases. In addition, theoretical and empirical research indicates that temporary fiscal policy measures can stimulate household consumption to a relatively great degree, particularly if the central bank's policy rate is close to its lower bound. An Economic Commentary published by the Riksbank discussed these arguments and the interplay between fiscal policy and monetary policy in more detail.⁷⁴

Table 1:1. Monetary policy-related studies conducted in 2019. Year of publication 2019, unless otherwise specified.

Articles in Monetary Policy Reports

"Development of Swedish labour costs in an international perspective", February

"The Riksbank's operational framework needs to be adjusted to new conditions", July

"Trend development of the Swedish krona", July

"Inflation expectations in Sweden close to 2 per cent", September

"World trade in constant change", October

Economic Commentaries

E. Askestad, A. M. Ceh, P. Di Casola and A. Ristiniemi, "Forecasting the krona", no. 12.

C.-J. Belfrage, V. Corbo and S. Ingves, "Perspective on the krona, inflation and monetary policy", no. 13.

E. Frohm, "The relationship between resource utilisation and inflation: a micro data perspective", no. 1.

E. Frohm, "Lower labour shortage could partly explain low wage growth", no. 11.

E. Frohm and J. Hokkanen, "Learning by listening - interviews with companies reflect economic developments", no. 14.

H. Gabrielsson, "How does prosperity growth compare with other countries?", no. 10.

I. Häkkinen Skans, "Developments on the labour market according to different statistical sources", no. 6.

I. Häkkinen Skans, "Technological change and the labour market", no. 7.

B. Lagerwall, "Fiscal policy in a monetary policy perspective", no. 5.

Articles in Sveriges Riksbank Economic Review

M. Jonsson and E. Theobald, "Changed labour market – effects on prices and wages, the Phillips curve and the Beveridge curve", no. 1.

D. Kjellberg and D. Vestin, "The Riksbank's balance sheet and financial independence", no. 3.

Å. Olli Segendorf and E. Theobald, "Can immigration resolve the problem of an ageing population?", no. 1.

A. Westermark, "How can various structural changes in the economy affect wages and inflation?", no. 3.

A. Westermark, "Wage formation in Sweden: With Germany as a compass?", no. 3.

Staff memo

P. Di Casola and J. Iversen, "Monetary Policy with high household debt and low interest rates", October.

H. Erikson and D. Vestin, "Pass-through at Mildly Negative Policy Rates: The Swedish Case", January.

O. Tysklind, "Quality adjustments and international price comparisons", January 2020

J. Alsterlind, M. Lindskog, and T. von Brömsen, "An index for financial conditions", February 2020

C. J. Belfrage, P. Bonomolo and P. Stockhammar, "A time-varying equilibrium model for the long run real exchange rate", February 2020

Riksbank studies

Evaluation of the Riksbank's forecasts, March 2018.

Working Paper series

Ankargren, S. and H. Shahnazarian, (2019), "The Interaction Between Fiscal and Monetary Policies: Evidence from Sweden", no. 365.

M. Apel, M. Blix Grimaldi and I. Hull, "How Much Information Do Monetary Policy Committees Disclose? Evidence from the FOMC's Minutes and Transcripts", no. 381.

H. Armelius, C. Bertsch, I. Hull and Z. Zhang, "Spread the Word: International Spillovers from Central Bank Communication", no. 357.

R. Billi and J. Galí, "Gains from Wage Flexibility and the Zero Lower Bound", no. 367.

M. Björklund, M. Carlsson and O. Nordström Skans, "Fixed Wage Contracts and Monetary Non-Neutrality", no. 368.

D. Cipullo and A. Reslow, "Biased Forecasts to Affect Voting Decisions? The Brexit Case", no. 364.

D. Debortoli, J. Kim, J. Lindé and R. Nunes, "Designing a Simple Loss Function for Central Banks: Does a Dual Mandate Make Sense?", no. 366.

⁷² See the article "The Riksbank's experiences of a negative repo rate".

⁷³ P. Di Casola and J. Iversen, "Monetary policy with high household debt and low interest rates", Staff memo, October 2019.

⁷⁴ B. Lagerwall, "Fiscal policy in a monetary policy perspective", *Economic Commentaries* no. 5, 2019.

J. Hassler, P. Krusell and C. Olovsson, "The Consequences of Uncertainty: Climate Sensitivity and Economic Sensitivity to the Climate", no. 369.

J. Hassler, P. Krusell and C. Olovsson, "Directed technical change as a response to natural-resource scarcity", no. 375.

M. Kelin and L. Linnemann, "Tax and spending shocks in the open economy: are the deficits twins?", no. 377.

M. Levander, "Financial Buffers, Unemployment Duration and Replacement Labor Income", no. 379.

J. Lindé and A. Pescatori, "The Macroeconomic Effects of Trade Tariffs: Revisiting the Lerner Symmetry Result", no. 363.

A. Reslow, "Inefficient Use of Competitors' Forecasts?", no. 380.