

Economic Commentaries

New survey data highlights company pricing

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Inflation in Sweden rose gradually from 2014 to 2017. The upturn was partly due to rising energy prices and a weaker exchange rate, but also to a gradually higher rate of increase in service prices.² One important explanation is that resource utilisation rose at the same time, which is assessed to have a particularly large impact on service prices.

Assessments of the driving forces behind inflation are uncertain and the results may vary, depending on which data, models or statistical methods are used in the analysis. To gain a better understanding of what lies behind company pricing, in 2015 the Riksbank commissioned the National Institute of Economic Research (KI) to introduce recurring questions on the subject in its Economic Tendency Survey. The purpose of the new questions is to systematically gather information on companies' views regarding developments in prices and costs and on the most important factors for their pricing at the time in question. The new questions are aimed at the retail trade and service sectors and should therefore reflect how consumer prices are set in these sectors. These questions have now been a part of the Economic Tendency Survey for almost three years. They have been evaluated regularly and are considered to work well.

This commentary presents the new information from the Economic Tendency Survey and shows the main factors that have affected company pricing since 2015.

Important to understand which factors are driving inflation

For those who shape monetary policy, it is important to understand what factors impact inflation and how these driving forces change over time. There are temporary factors, which are not necessarily linked to domestic demand that can affect inflation. For instance, companies may need to adjust their prices when taxes or commodity prices change. If the change is assessed to be temporary, and thus not expected to impact inflation in the medium run, it is usually given little weight when making decisions on monetary policy.³ On the other hand, if prices increase as a result of stronger demand and impact the assessment of inflation in the medium run, the case is the reverse. The same applies if structural changes in the economy, such as increased e-commerce and competition, are expected to have a long-term impact on company pricing and inflation.⁴

Using theoretical models and analyses of various statistical correlations, one can obtain a picture of the driving forces behind inflation. Questionnaires and

It is difficult to assess the driving forces behind inflation, and the results of the assessments can vary, depending on which models or statistical techniques are used. To gain a better understanding of what lies behind company pricing, the Riksbank has introduced new recurring questions in the National Institute of Economic Research's Economic Tendency Survey. The purpose of these new questions is to systematically gather information at the company level on prices and how they are determined. This Commentary presents the new data and discusses what factors have been most important for company pricing since 2015. The survey responses indicate that foreign and domestic cost pressures have contributed to price increases in the trade sector. Higher demand and higher domestic costs have contributed to price increases in service branches. At the same time, competition has held back price pressures in these sectors. These results largely confirm the results from the Riksbank's macroeconomic models. Although the time series with the new questions are so far relatively short, they will in time enable new analyses of inflation developments. They thus function as a complement to other types of analysis.

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² Since the end of 2017, however, the rate of growth in service prices has fallen somewhat.

³ At the same time, commodity prices can increase as a result of stronger global demand. If this is the case, the Riksbank should take these price movements into account.

⁴ See "Digitalisation and inflation" in the Monetary Policy Report February 2015.

interview surveys can be used as a complement to this, and the Riksbank does so three times a year with its Business Survey.⁵

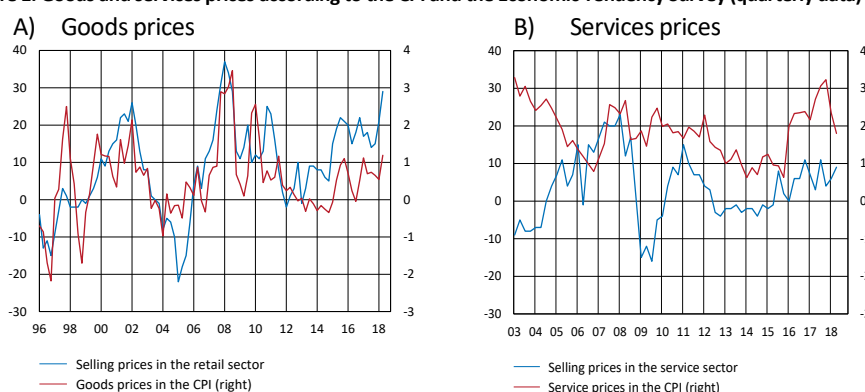
Understanding company pricing with the aid of surveys

During the period 2013-2014⁶, inflation fell rapidly and the Riksbank's forecasts were less accurate. The Riksbank therefore commissioned KI to make a special survey via a questionnaire to companies who set consumer prices.⁷ Its purpose was to gather information on which factors had affected the companies' pricing. One-off surveys of this kind can act as a useful complement to other types of analysis. But, as different factors can have different importance at different times, there is good reason to monitor the various drivers over time.

The Riksbank's Business Survey is carried out regularly, but is most appropriate for illustrating underlying mechanisms in the economy. The questions are not primarily adapted to time series analysis.⁸ Other recurring questionnaires, such as KI's Economic Tendency Survey, are better suited for this purpose. This survey includes a broad sample of consumer-related companies. The Riksbank therefore decided in 2015 to give KI the task of introducing new recurring questions on pricing into the Economic Tendency Survey.

Figure 1 shows how companies' selling prices as described in the Economic Tendency Survey correlate with consumer prices for goods and services in the Consumer Price Index (CPI). The information shown here comes from trade and services companies. Selling prices are measured quarterly and are expressed in so-called net figures.

Figure 1. Goods and services prices according to the CPI and the Economic Tendency Survey (quarterly data)



Note. CPI is expressed as annual percentage change, on the right axis. Selling prices are net figures, on the left axis.

Net figures are calculated as the difference between the percentage of companies responding "increased" and those responding "decreased" for the question of how prices have been adjusted. The correlation between net figures for retail trade companies and goods prices in the CPI is good, while it is somewhat poorer between net figures for service companies and service prices in the CPI. The latter can be explained by service prices in the Economic Tendency Survey capturing prices charged to both companies and consumers. The CPI only measures consumer prices.

The net figures from the Economic Tendency Survey are often used by the Riksbank and other forecasters as indicators of the development of inflation, especially in the short term.

⁵ <https://www.riksbank.se/sv/press-och-publicerat/publikationer/om-penningpolitik/foretagsundersokning/>

⁶ See Löf (2015), "Recent inflation outcomes and forecasts", Economic Commentaries, No. 4, Sveriges Riksbank.

⁷ See Apel et al (2014) "Results from a survey on company pricing", Economic Commentaries, No. 4, Sveriges Riksbank.

⁸ Despite this, the Riksbank's Business Survey has been shown to provide a good picture of economic developments in Sweden, see

Hokkanen et al (2012), "The Riksbank's Business Survey – a quick indicator of economic activity", Sveriges Riksbank Economic Review 2012:3.

Like aggregate statistics, however, they do not give any information on which factors lie behind companies' pricing decisions.

The new questions in the Economic Tendency Survey

The new questions the Riksbank has developed together with KI are aimed at companies in the retail trade and service sectors. The idea is that the questions will primarily capture pricing aimed at consumers and thus reflect developments in goods and services prices in the CPI. Two questions have been added to the monthly survey, see Table 1. Retail trade companies are asked about developments in selling prices over the past three months, which means we can quickly capture any changes.⁹ Service companies are asked about the development of costs on a monthly basis.

The purpose of both of the questions is to provide more up-to-date information that can improve the short-term forecasts and thereby also the analysis of inflation in the longer run. Figure 2 shows the time series with developments in goods and services prices according to the CPI. The time series are still too short to enable a systematic evaluation of their forecasting qualities as yet.¹⁰

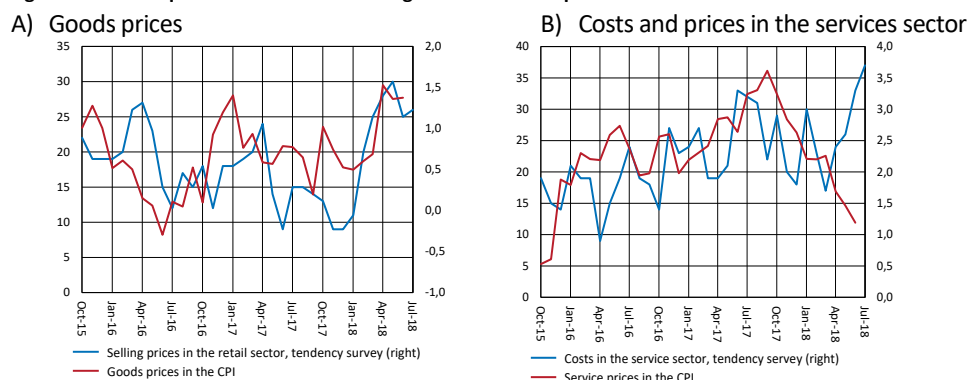
Table 1: New questions in the Economic Tendency Survey

Monthly questions:		
<i>Trade sector: Selling prices have over the last three months:</i>		
<i>Increased</i>	<i>Unchanged</i>	<i>Decreased</i>
<i>Services sector: Total costs for operations have over the last three months:</i>		
<i>Increased</i>	<i>Unchanged</i>	<i>Decreased</i>
Quarterly questions to both trade and services companies:		
<i>What was the most important reason when you last changed your selling prices?</i>		
Competitors have changed prices		
Demand has changed		
Domestic costs have changed		
World market prices or exchange rate have changed		
Other factor (please state):		

In addition to the two monthly questions, a quarterly question has been included. Hopefully it will capture the most important factors behind company pricing. The question is posed to both firms in retail trade and services. The companies can only choose one of the response alternatives (see the alternatives under the heading Quarterly question in Table 1). Naturally, there are several factors that can play an important role in companies' pricing decisions, but the purpose here is to obtain a picture of which factor(s) are *most important* at a given point in time.

⁹ This question was already included in the survey, but on a quarterly basis.

¹⁰ For example, service prices in the CPI have fallen since the end of 2017, while net figure have been relatively stable and even increased in recent months.

Figure 2. The new questions correlate with the goods and services prices in the CPI

Note. Respective CPI is expressed as annual percentage change, on the right axis. The left axis shows the net figure for the two monthly questions.

The questions were tested on companies included in the Riksbank's Business Survey and a small sample of the companies responding to the Economic Tendency Survey. The test helped to ensure that the alternatives were relevant and easy to understand.

The companies who have received the new questions are the same retail trade and services companies that are normally included in the Economic Tendency Survey, around 4,600 companies in total (around 1,500 in the trade sector and 3,000 in the services sector). The responses are gathered via a web survey. The collection period is three weeks and the results are published at the end of each month. The weighted response frequency of the new questions is around 60 per cent and does not differ significantly from the responses to the other questions in the survey.¹¹

The driving forces behind company pricing

The new quarterly questions have now been included in the Economic Tendency Survey since the third quarter of 2015. There is thus information on how companies view the most important factors behind their pricing over almost three years. This gives us the opportunity to examine whether the companies during the period 2015-2018 have primarily adjusted their prices as a result of a changes in domestic or imported cost pressures or a change in demand. We can also investigate what role competitors' pricing plays, and whether there are other factors that have at times been important for companies' price adjustments.

- First, we divide the responses on selling prices into two groups. One group for the companies responding "increased" and another for those responding "decreased". The companies stating that they have had unchanged prices are not included in the calculation, as they do not have changed prices.
- In a second step we calculate the percentages in each respective response group (increased or decreased) responding with regard to each individual factor (competition, demand, domestic or imported costs or other). In this way we know which factors have been most important when companies have raised or lowered their selling prices.
- In a final step we calculate the net figures and the contribution to the net figures from each factor.¹²

Together the five net figures for the factors correspond to the total net figure for the question on selling prices. The breakdown therefore makes it possible to examine which factors have

¹¹ <http://www.koni.se/metodbok>

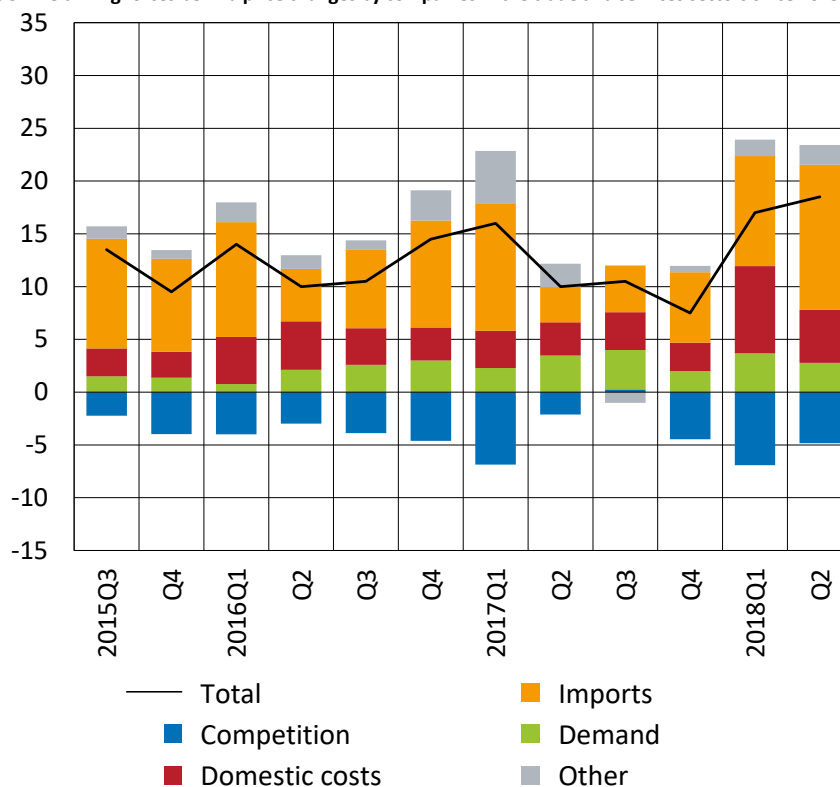
¹² The net figures and the time series supplied by KI on their website are weighted according to the size of the companies. The time series can therefore differ somewhat from KI's published data.

been most important for company pricing and whether they have contributed to an increase or decrease in prices over time.

Increased cost pressures the most important factor for price upturn

Figure 3 shows how the different factors have affected the trade and services companies' prices since the third quarter of 2015. It is clear that selling prices have increased and that this has primarily been due to increased cost pressures, both from foreign and domestic sources. An increase in demand has also become more important for companies' price increases, as resource utilisation has risen. Competitors' pricing has varied in significance during this period, but mostly been regarded as a factor that has held back selling prices.

Figure 3. The driving forces behind price changes by companies in the trade and services sectors since 2015.



Note. The figure shows how different factors have affected the unweighted net figure for the question of what has happened with prices in the last three months in both the trade and services sectors.

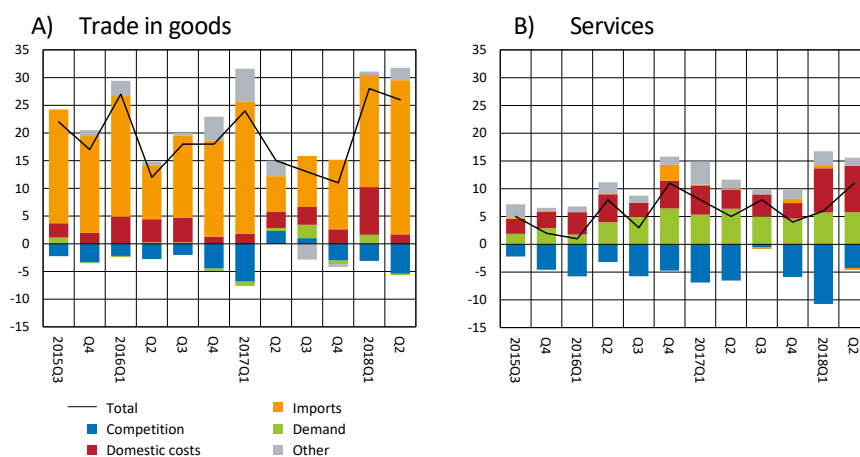
It is common to explain the driving forces behind inflation with the aid of economic models. The results from the Riksbank's general equilibrium model RAMSES indicate that the price mark-ups were relatively low during the period 2014-2017, which according to the model has contributed to inflation being lower than expected. The interpretation of the models can be compared with the information we receive from the Economic Tendency Survey. The fact that changes in competitors' prices have held back prices since 2015 is confirmed by the survey responses. At the same time, foreign costs (which cover both the exchange rate and import prices) have contributed to price increases. The results in line with

the factors pointed out by RAMSES (the exchange rate) and the vector autoregressive (VAR) model (developments abroad) used by the Riksbank.¹³

The open responses under the alternative “Other” in Figure 3 show that there are also other factors that can affect pricing. For instance, the higher chemicals tax introduced with effect from July 2017 was mentioned as an important reason for raising prices in 2017. Other factors that are mentioned as important when companies change their prices are a review of price models, strategic decisions, taxes or social security contributions, and changes in the quality or product mix for the goods and services sold.

It is also possible to break down the responses to sector level. Figure 4 shows how the driving forces behind pricing differ between companies in the goods trade (A) and those in the services sectors (B). In the trade sectors, rising international costs play a dominant role, with smaller contributions from domestic costs. In the services sectors it is increased demand and domestic costs that are pushing up prices.

Diagram 1. Costs more important in trade sectors than service sectors



The responses confirm the results in the Riksbank's models

The new questions in the Economic Tendency Survey contribute to the analysis of inflation at the Riksbank. The possibility to compare different sources of information, such as theoretical models, statistical correlations and survey data, together with other available statistics, provides broad and in-depth material on which to base decisions. Survey data has the advantage that it reflects companies' own views of pricing and is not dependent on various assumptions or econometric techniques. A further advantage of survey responses is that they are updated every quarter and enable a more detailed analysis (of, for instance, the differences between trade and services companies). They can therefore function as a recurring source of information that increases the understanding of inflation.

The results from the new questions in the Economic Tendency Survey largely confirm the results of the Riksbank's macroeconomic models. In time, the responses to the new questions can be used in models for short-term forecasts and will enable other analyses of the development of inflation.

¹³ See Sveriges Riksbank (2018) "A review of the Riksbank's forecasts", Riksbank Studies, March 2018.

References

Apel, Mikael, Erik Frohm, Jyry Hokkanen, Christina Nyman and Stefan Palmqvist (2014), "Results from a survey on company pricing," Economic Commentaries, No. 4, Sveriges Riksbank.

Sveriges Riksbank (2014), "Why is inflation low?" article in the Monetary Policy Report, July 2014, Sveriges Riksbank.

Sveriges Riksbank (2015), "Digitalisation and inflation" in the Monetary Policy Report, February 2015, Sveriges Riksbank.

Sveriges Riksbank (2016), "The correlation between resource utilisation and inflation" in the Monetary Policy Report, October 2016, Sveriges Riksbank.

Sveriges Riksbank (2018), "A review of the Riksbank's forecasts", Riksbank Studies, March 2018, Sveriges Riksbank.

Hokkanen, Jyry, Tore Melin and Alexander Nilson (2012), "The Riksbank's Business Survey, a quick indicator of economic activity", Sveriges Riksbank Economic Review, 2012:3, Sveriges Riksbank.

Löf, Mårten (2015), "Recent inflation outcomes and forecasts", Economic Commentaries, No. 4, Sveriges Riksbank.