



Economic Commentary

Price changes on goods and services during the high inflation period: insights from microdata

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In a previous Economic Commentary, we showed that aggregate inflation strongly correlates with how often, rather than how much, prices change. We noted that as inflation has fallen, companies have also started to change their prices less frequently. This indicates that pricing behaviour is now more in line with what it was before the high inflation period. In this Economic Commentary, we go one step further and do the same analysis for different sub-indices.¹ The conclusion is that the pricing behaviour of goods and food has been similar to what we have seen in the aggregate, while the outcome has been slightly different for services. For service prices, the rate of price increases remains relatively high, and companies are still changing their prices more frequently than in the previous low inflation period.

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Breakdown into sub-indices provides new insights

Companies' pricing behaviour has come under the spotlight in the recent high inflation period. In an earlier Economic Commentary, we showed that aggregate inflation strongly correlates with how often, rather than how much, prices changed from 2011 onwards.³ At the aggregate level, companies' pricing behaviour appears to have normalised in terms of the frequency of price changes. This has happened as inflation has come down to more normal levels.

¹ Economic Commentaries are brief analyses of issues with relevance for the Riksbank. They may be written by individual members of the Executive Board or by Riksbank staff. Staff commentaries are approved by the relevant head of department, while Executive Board members are themselves responsible for the content of the commentaries they write.

² Special thanks to Jesper Johansson for his valuable contribution and to Vesna Corbo and Jens Iversen for their valuable comments.

³ See Klein et al. (2024)

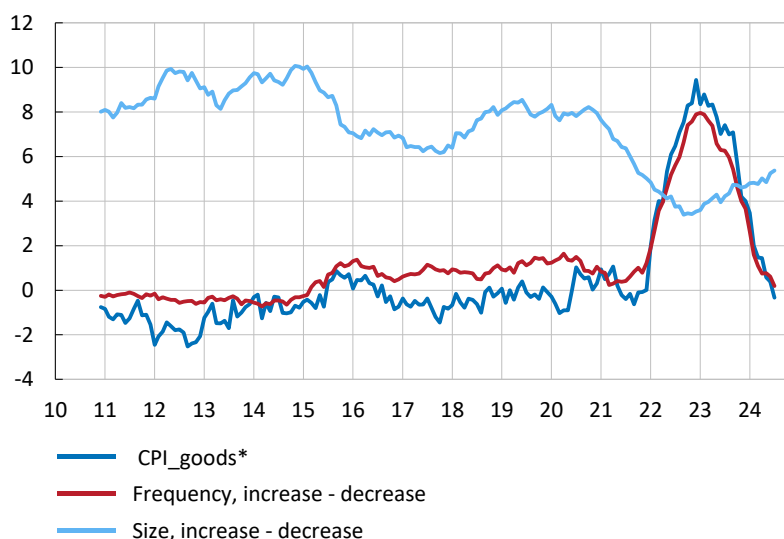
In this Economic Commentary, we go one step further and analyse whether pricing behaviour differs across sub-indices. Pricing behaviour is measured here as the relative ratio between the frequency of price increases and decreases, and the difference in the average size of price increases and decreases.⁴

Goods and food prices change more often when the rate of price increase is high

If we first take a closer look at goods prices, we see that price developments there closely follow the relative frequency of price change (see Figure 1).⁵ The relative frequency of price changes is calculated as the share of price increases minus the share of price decreases, as in Klein et al. (2024).

Figure 1. Rate of price change in goods and relative frequency and size of price changes

Annual percentage change and per cent



Note. The CPI_goods index* is a weighting of the sub-indices of the CPI classified as goods. The product groups that are not included in the micro-data material are excluded. The relative frequency and magnitude of price changes are expressed as 12-month moving averages. This is to match the frequency of the annual percentage change.

Sources: The Riksbank and Statistics Sweden

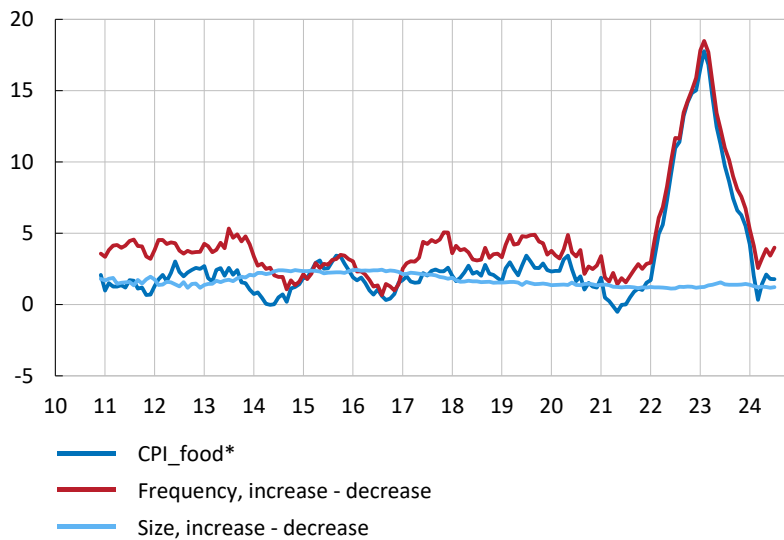
⁴ The reason for this is discussed in Klein et al. (2024) and is related, among other things, to the fact that the relative development between increases and decreases is affected to a lesser extent by various method changes.

⁵ See Klein et al (2024) for a description of the microdata.

For food prices, the relationship between the relative frequency of price changes and the rate of price increases is also clear (see Figure 2). At the same time, the relative ratio between the size of price increases and decreases varies very little over the period.⁶

Figure 2. Rate of price change in foods and relative price change frequency and magnitude

Annual percentage change and per cent



Note. The CPI_food index* is a weighting of the sub-indices of the CPI classified as goods. The product groups that are not included in the micro-data material are excluded. The relative frequency and magnitude of price changes are expressed as 12-month moving averages. This is to match the frequency of the annual percentage change.

Sources: The Riksbank and Statistics Sweden

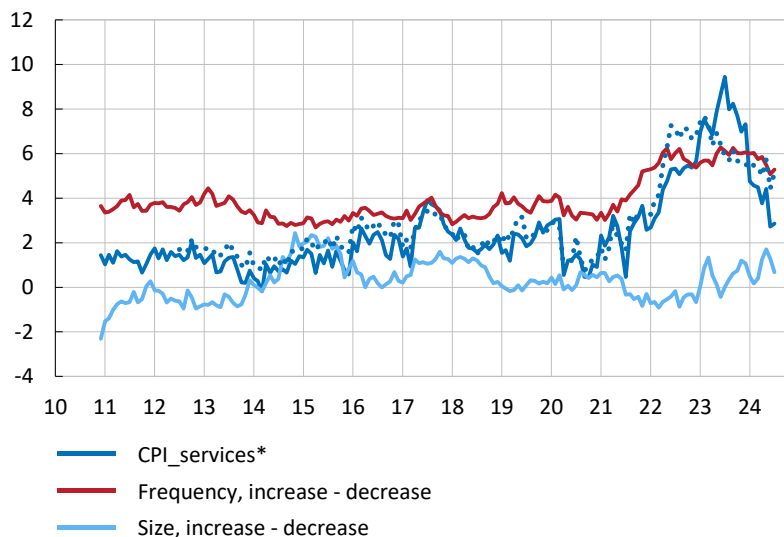
Weaker correlation between rate of price increase and frequency of price changes among service prices

For service prices, however, the relationships are different. There is some correlation between the relative frequency of price changes and overall price developments, but the relationship is weaker than for goods and food prices (see Figure 3). At the same time, the relative magnitude of price changes in service prices appears to move slightly more than for other prices. There are several possible explanations as to why the development of service prices looks this way.

⁶ A reduction in the size of price changes took place in 2021. However, this occurred at the same time as Statistics Sweden redesigned some parts of the commodity price surveys. It switched to collecting prices via cash register data, from previously collecting prices manually in-store. The shift in 2021 should therefore not be over-interpreted as it may be due to new calculation methods.

Figure 3. Rate of price change in services and relative price change frequency and magnitude

Annual percentage change and per cent



Note. The CPI_services index* is a weighting of the sub-indices of the CPI classified as services. The product groups that are not included in the micro-data material are excluded. The dotted line is an index calculated with fixed weights throughout the period. The relative frequency and magnitude of price changes are expressed as 12-month moving averages. This is to match the frequency of the annual percentage change.

Sources: The Riksbank and Statistics Sweden

First, the aggregate of service prices has been affected by weighting effects to a much greater extent in recent years than the other aggregates. This is mainly due to the major shifts in household consumption patterns during and after the pandemic. This relation has affected the index for service prices in recent years. For example, the rapid increase in the growth rate of service prices in mid-2023 was largely the result of weighting effects rather than price movements. Similarly, weighting effects are reinforcing the slowdown in the rate of increase in service prices this year. If we try to remove these effects and instead calculate a measure with fixed weights, we instead get the dotted blue line in Figure 3, where the dynamics are more similar to the relative price frequency.⁷

Another factor is probably that aggregate service prices have a relatively large share of individual prices that usually change only once a year. These include, for example, administratively priced tariffs such as sanitation, healthcare and public transport charges. For these, the possibility to change prices is often more limited.

⁷ The fixed-weight index is calculated by weighting the sub-indices with the weights from 2023 over the whole period.

Companies change prices more often when inflation is high

In this Economic Commentary, we have built further on an earlier study of how companies set prices. The results of the previous study showed that it is how often, and not how much, prices change that covaries with the aggregate rate of inflation. This was particularly evident in 2022 and 2023, when inflation was high. At that time, companies increased their prices much more frequently than before, while the average size of price changes did not change much. As inflation has fallen, companies have also started to change their prices less frequently. This indicates that pricing behaviour is now more in line with what it was before the high inflation period.

The results of this study show that, for goods and food prices, there is a clear relationship between the frequency of price changes and the rate of price increases. For these subgroups, this aspect of pricing behaviour has been normalised. However, for service prices the relationships are different. For service prices, the rate of price increase remains relatively high, while companies are still changing their prices more frequently than in the previous low inflation period.

References

M. Klein, K Strömberg and O. Tysklind (2024), "Inflation dynamics in the high inflation period: insights from new micro data", Economic Commentaries, no. 14, Sveriges Riksbank.



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