Underlying inflation – for better or for worse

Swedish Society of Financial Analysts
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CPIF inflation – the monetary policy objective

Note. The CPIF, annual percentage change.

Source: Statistics Sweden

Questions

- Why differentiate between lasting and temporary price movements?
- When was the concept of underlying inflation first used?
- What to do? Two different approaches!
- What are the desirable properties?
- Which consumer prices should be excluded?
- What have we learnt?

Why differentiate between lasting and temporary price movements?

- Objective of monetary policy
- The concept of inflation
- Key words:

  “Prices in general”
  “lasting”

- Central banks’ use of the concepts core inflation and underlying inflation

When was the concept of underlying inflation first used?

- Sporadically mentioned in academic research
- Text analysis:

  Schreder (1952)

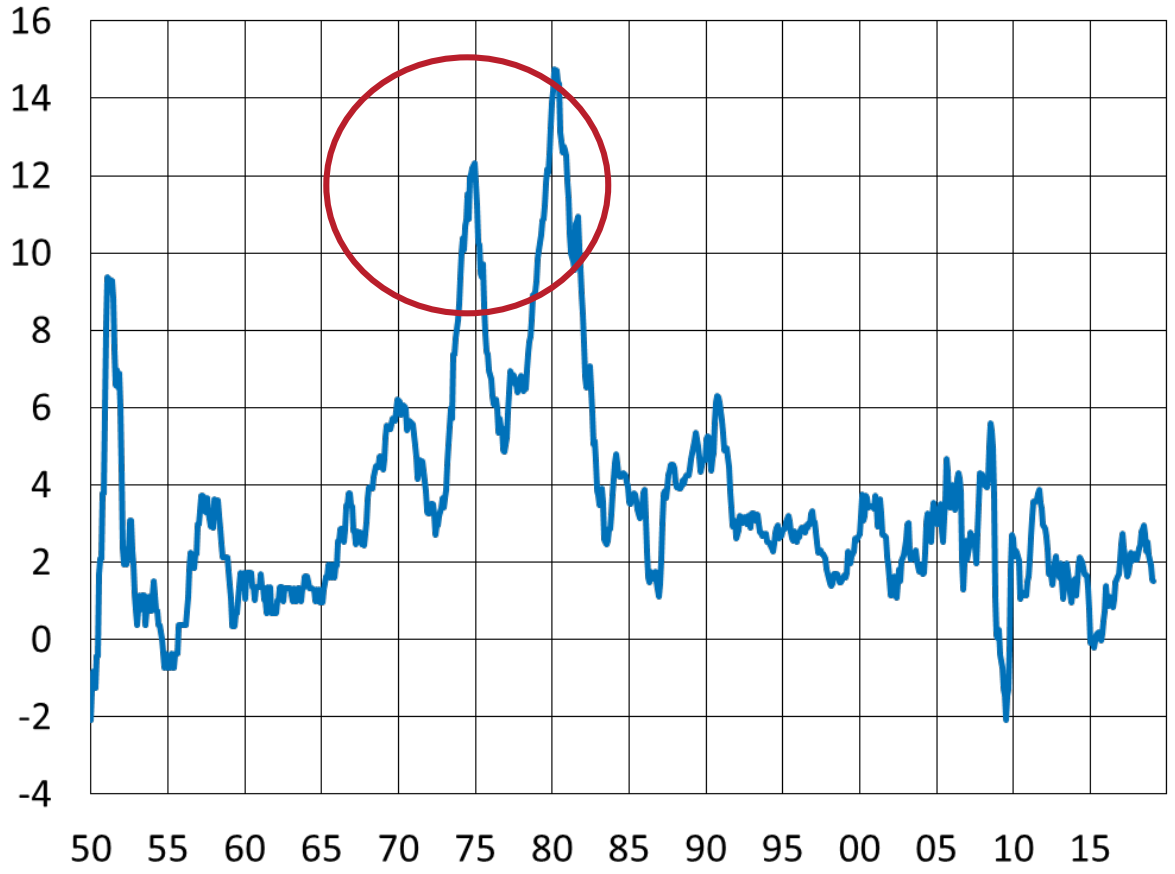
- Began to be used more regularly as inflation rose quickly in 1973 and 1974

  Friedman (1974)

- *Bureau of Labor Statistics (BLS)* began calculating the measure in 1978

CPI inflation in the USA

Annual percentage change



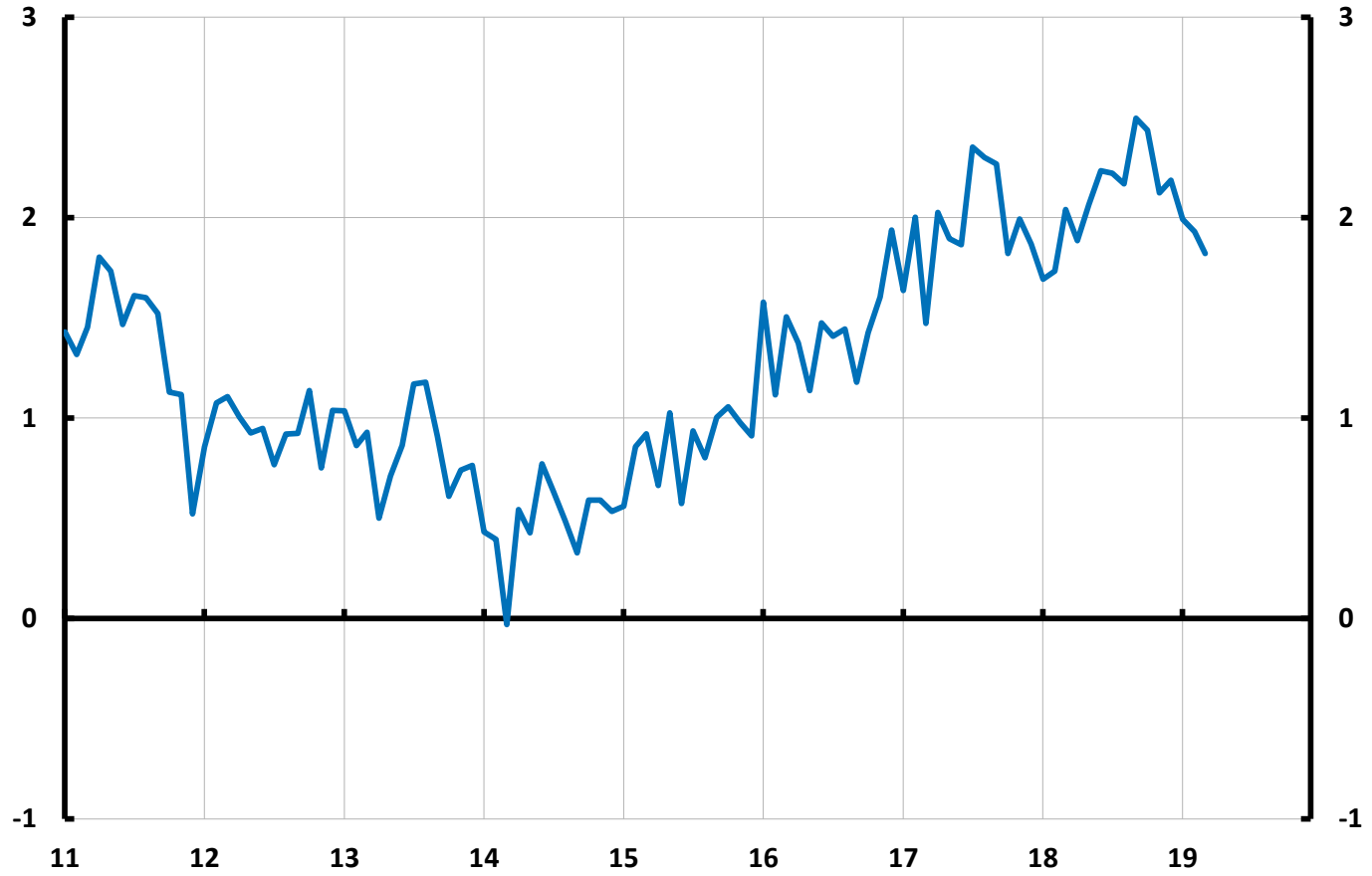
Source: Bureau of Labor Statistics

What to do?
Two main approaches

- *Statistical methods* to exclude, or dampen, the effect of temporary price changes over time

- The other common approach is to *exclude* predetermined goods and services

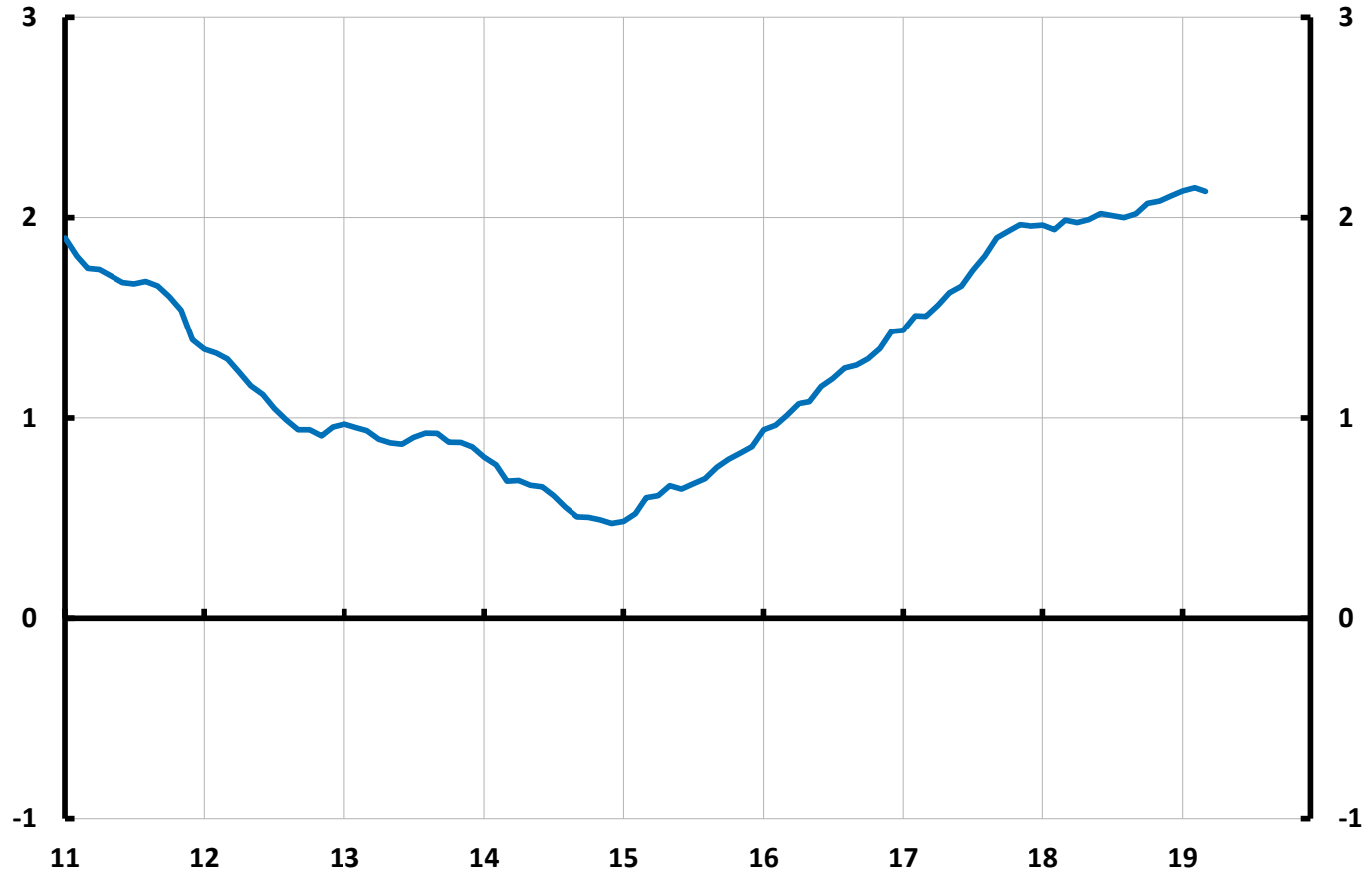
Statistical methods:
Separating trend from white noise



Note. The CPIF, annual percentage change.

Source: Statistics Sweden

Statistical methods:
Separating trend from white noise

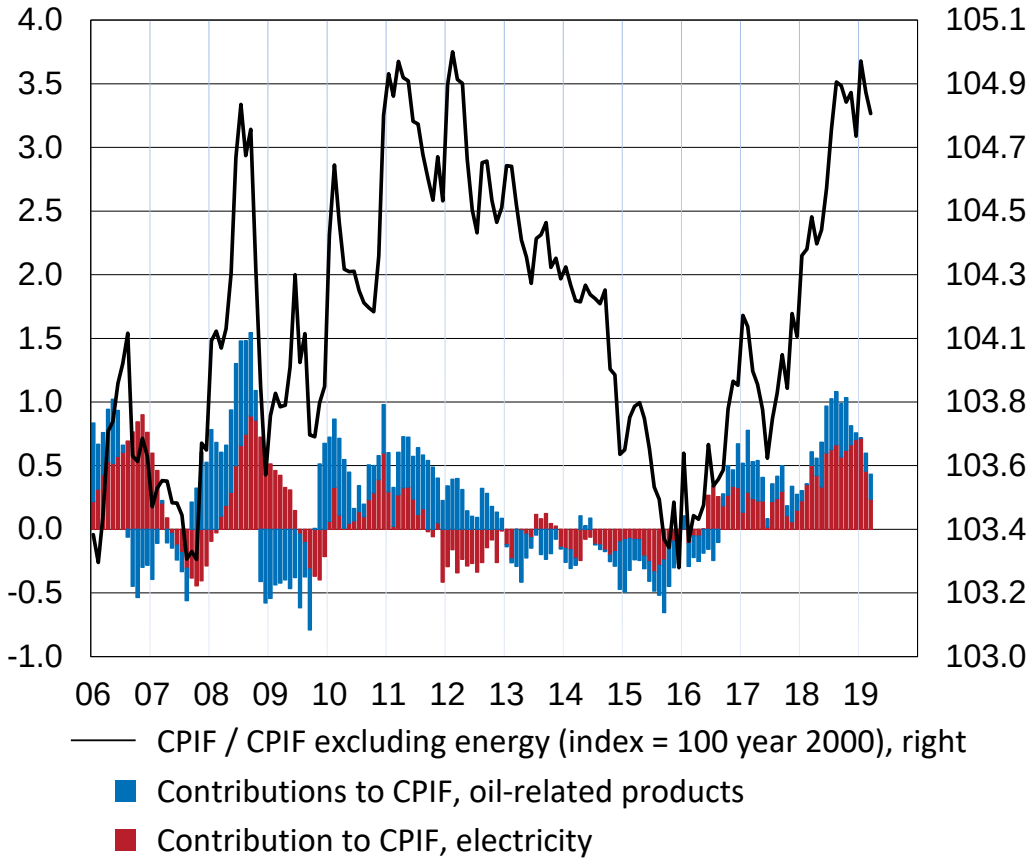


Note. The CPIF, annual percentage change, 12-month moving average.

Sources: Statistics Sweden and the Riksbank

Exclusion:
CPIF inflation and energy prices

Annual percentage change



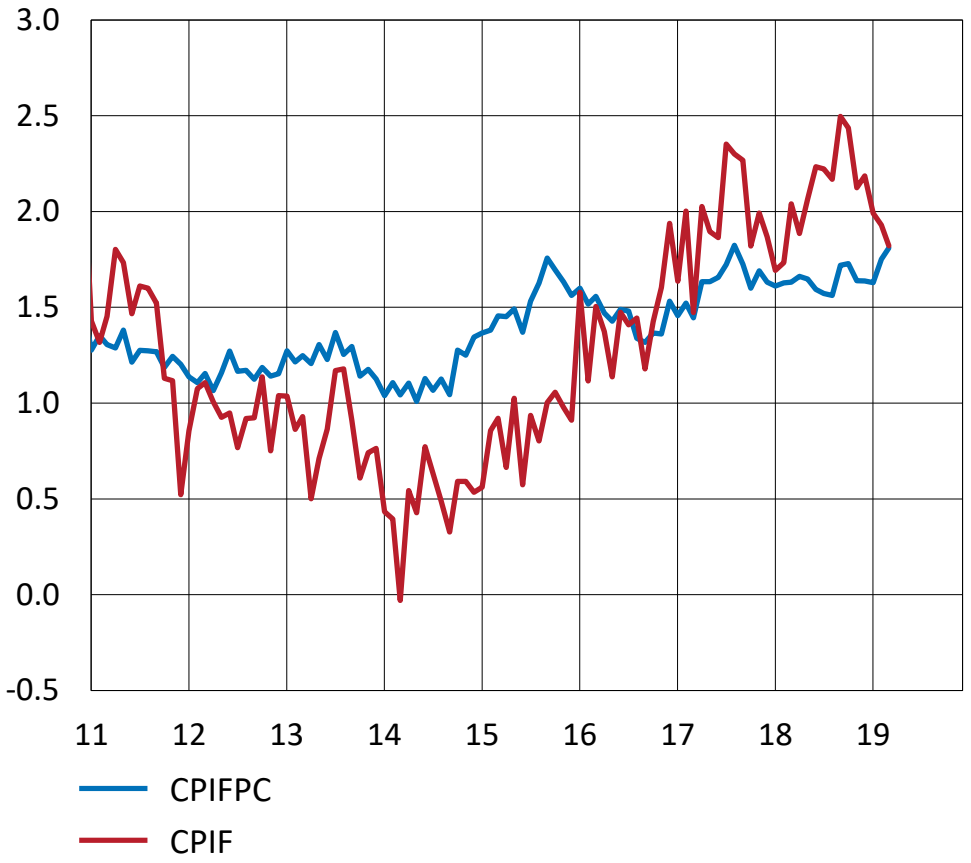
Sources: Statistics Sweden and the Riksbank

Desirable properties

- Should have the same *average* as the actual rate of inflation.
- Covary with the trend in actual inflation and should have lower *volatility*
- Should say something about the *future* actual inflation rate
- Should covary with *factors* that are important to the development of the actual inflation rate
- The measure of underlying inflation should be easy to *understand*

Best in test:
Principal component analysis

Annual percentage change



Sources: Statistics Sweden and the Riksbank

Which consumer prices should be excluded?

Components of the CPIF with the highest volatility 1995-2019

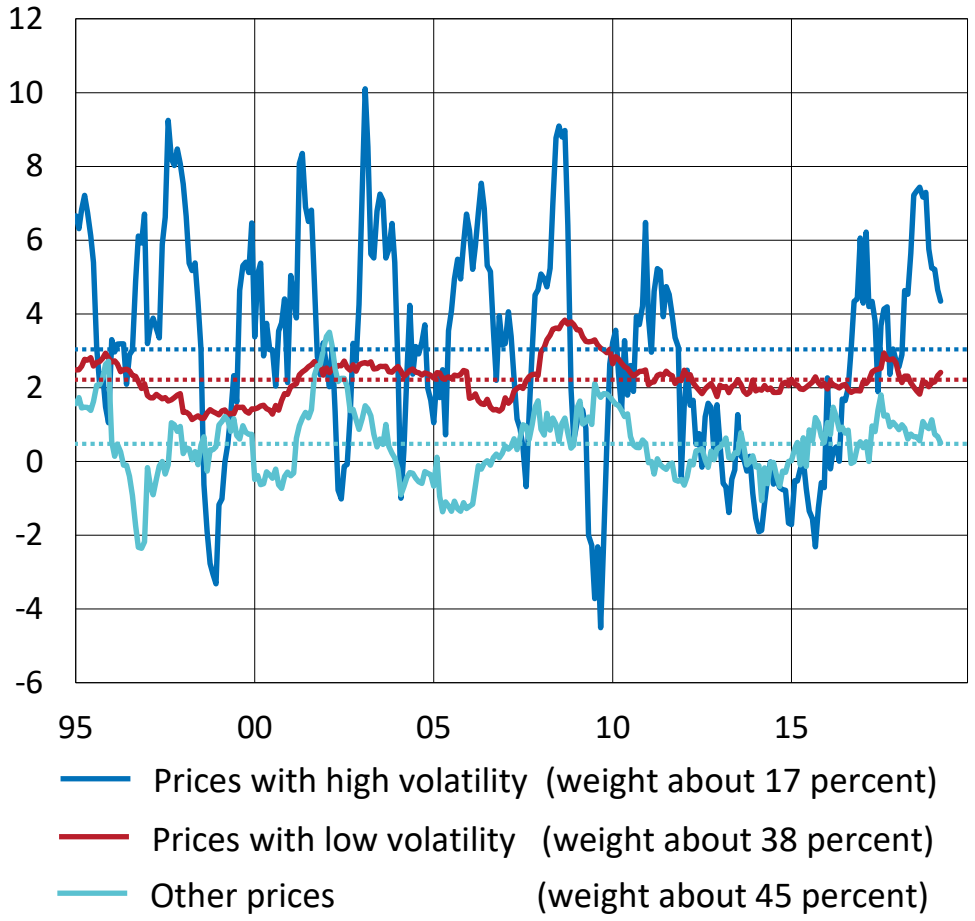
Sub-index of the CPIF	Standard deviation	Average	Weight
Coffee, tea, cocoa	12.6	1.8	0.4
Owner-occupied housing: freehold, prop-	11.5	1.5	0.7
Fruit and vegetables, Swedish	10.7	2.2	0.3
Owner-occupied housing: heating excluding	10.0	5.6	0.5
Owner-occupied housing: electricity	8.5	4.2	2.8
Pharmaceuticals	8.5	3.5	1.2
Tobacco products	8.0	4.7	1.6
Cameras, film	7.8	-7.4	0.1
Gold products	7.8	4.2	0.3
Owner-occupied housing, apartments: repa-	7.3	2.0	3.0
Fuel	7.2	3.2	2.5
Gas and electricity, rented and tenant-	7.2	4.4	1.1
Fruit and vegetables, imported	6.3	2.8	0.7
Dental fees	6.3	4.8	0.9
Books	6.3	1.6	0.4

Components of the CPIF with the lowest volatility 1995-2019

Sub-index of the CPIF	Standard deviation	Average	Weight
Rent	1.0	1.9	9.6
Alcohol, restaurant visits	1.2	2.3	1.0
Personal hygiene (services)	1.3	3.3	1.8
Garage costs	1.3	2.1	0.2
Water and sewerage, refuse collection,	1.3	2.7	1.0
Food (outside the home)	1.4	2.6	5.4
Lottery, pools[20]	1.4	1.3	1.1
Alcohol, purchased in store	1.5	1.1	2.1
Fizzy drinks, light beer	1.5	0.9	0.8
Entertainment and recreation	1.6	2.0	3.5
Personal hygiene (goods)	1.7	1.0	1.3
Capital stock[21]	1.9	4.6	3.3
Funeral, home insurance, bank, education	2.0	2.8	2.6
Diverse leisure goods	2.0	0.3	0.5
Furniture, carpeting and lighting	2.0	0.2	2.0

Prices with high and low volatility respectively in the CPIF

Annual percentage change



Sources: Statistics Sweden and the Riksbank

Underlying measures and monetary policy

The first conclusions:

- There are measures that are better or worse with regard to fulfilling the criteria for important properties.
- There is no measure that is unequivocally better than *all* the others.
- The measure that is systematically better than other measures; some are great in many respects, others terrible in many respects.

Underlying measures and monetary policy

- Problems for responsible monetary policy decision-makers:
  - *Need to approach existing data with caution and to regard them from different perspectives*
  - *But at the same time, need to be clear and transparent with regard to the objective for monetary policy*
- The conflict becomes particularly clear if one chooses to use measures of underlying inflation that systematically *deviate* from the actual rate of inflation.

Underlying measures and monetary policy

Handelsbanken Capital Markets, June 2018:

"The Riksbank's focus on CPIFXE in connection with the April meeting resulted in questions on whether the Riksbank was changing target variable or rudder once again. This is not the case."

Nyhetsbyrån Direkt, September 2018:

"CPIFXE inflation (the CPIF excluding energy), the measure on which the Riksbank is currently focusing a lot, …"

What have we learnt?

- There are different types of decomposition of the development of inflation, but they give no essential explanations for it.
- Inflation is the result of a very large number of economic agents' individual decisions to change prices.