

How Well Does "Core" CPI Capture Permanent Price Changes?

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Discussion

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Summary

- a "core" measure of inflation is important for monetary policy
- the most widely used measure of core inflation is constructed from a price index that excludes food and energy prices
- food and energy prices are excluded because they are believed to be temporary (volatile) movements in the overall price level
- does *Core CPI* capture permanent price changes?

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The paper analysis the time-series properties of:

- 1 Core CPI (less Food and Energy)
- 2 Food CPI
- 3 Energy CPI

Summary

- by using the KPSS stationarity test it is shown that all series are stationary in first difference, indicating that prices are $I(1)$
- this already indicates that excluding Food and Energy CPI is problematic
- each series is then decomposed into a permanent and transitory component
- it is found that all series have significant permanent and transitory components
- thus neglecting the permanent components in Food and Energy CPI leads to a measure of core inflation that does not reflect **all** permanent changes in the overall price level

Summary

- to study the importance of neglecting Food and Energy CPI the paper decomposes *Headline CPI* (weighted average of all three components) into permanent and transitory component
- it is shown that the permanent components of Headline CPI (called long-run inflation) and Core CPI differ significantly
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neglecting Food and Energy CPI leads to a biased measure of core inflation

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- the UC model allows for a structural break in the drift term of all CPI series
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- the UC model allows for a structural break in the drift term of all CPI series
- all CPI's drift terms are allowed to break at the break dates of the individual series
- the finding of significant breaks in the drift term
 - question the finding of stationary inflation rates (for two out of three CPI's the drift is monotonically increasing or decreasing)
 - suggests that all CPI's are $I(2)$ implying that inflation is $I(1)$

- the finding of all CPI's being $I(1)$ is crucial
- are structural breaks in the mean of inflation are needed to ensure stationarity of inflation?
- the non-stationary components in the UC model can also be interpreted as permanently breaking means
- the only difference is the frequency of mean shifts
- if the focus is on permanent movements then even a single break is a permanent movement

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- if the focus is on permanent movements then even a single break is a permanent movement
- the modeling of the drift (constant, breaking constant, random walk) will probably affect the smoothness of the permanent component
- the fact that the sum of the AR parameters is close to one suggests that there might be another permanent component
- as a robustness check why not allowing for a random walk drift