



Discussion on

**“Trend Inflation Estimates for Thailand from
Disaggregated Data”**

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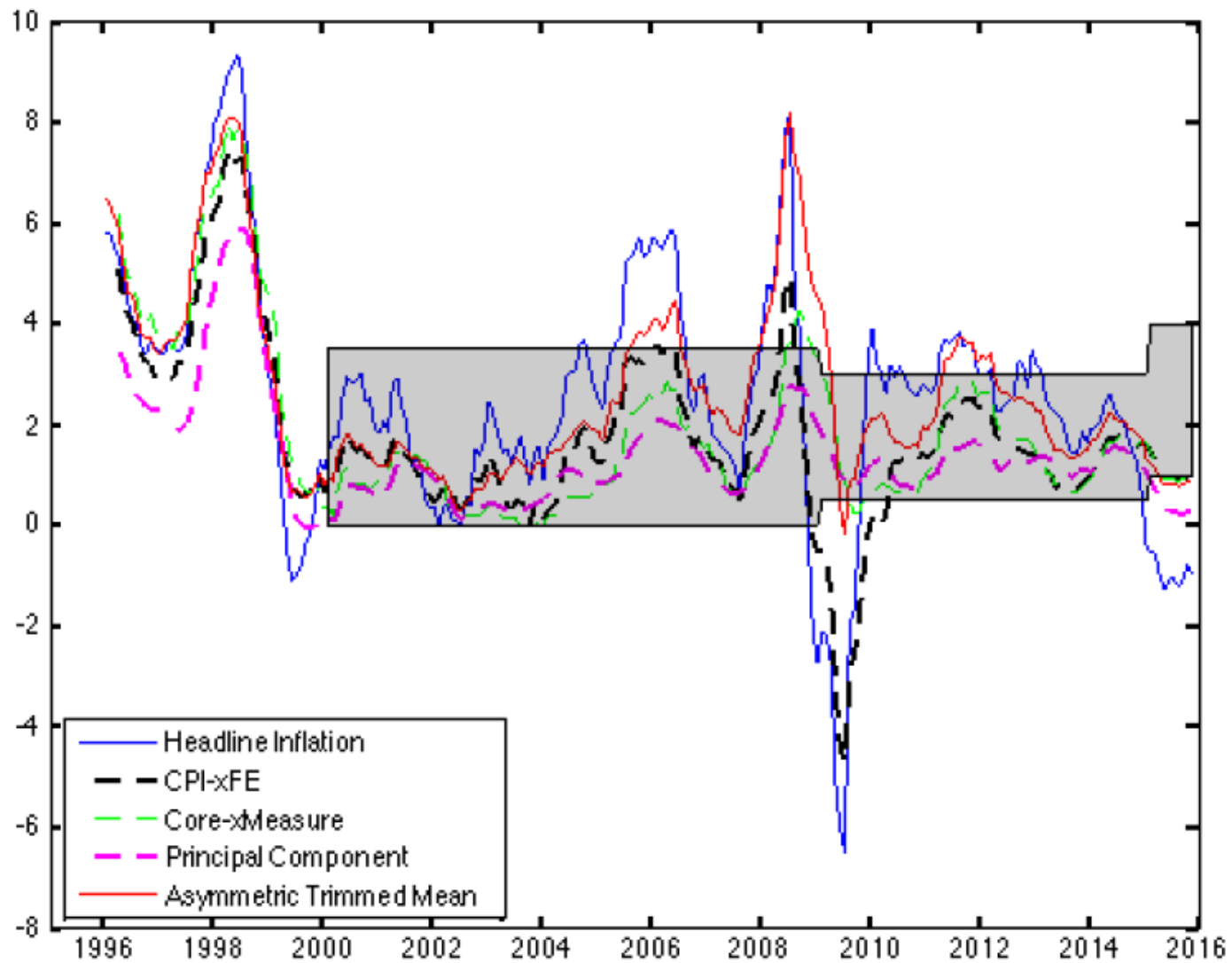
Recap the paper

- The paper estimates a new measure of trend inflation for Thailand using the Multivariate Unobserved Components model with Stochastic Volatility and Outlier adjustment (MUCSVO) as proposed by Stock and Watson (2015).
- The paper uses disaggregated data (3, 7, and 10 components) for estimations.
- Main findings:
 - i) The multivariate trend estimates are more precise than the univariate trend estimates.
 - ii) Trend inflation has become “well-anchored” since the adoption of an IT regime.
 - iii) The out-of-sample forecast inflation performs better than existing measures of trend inflation.

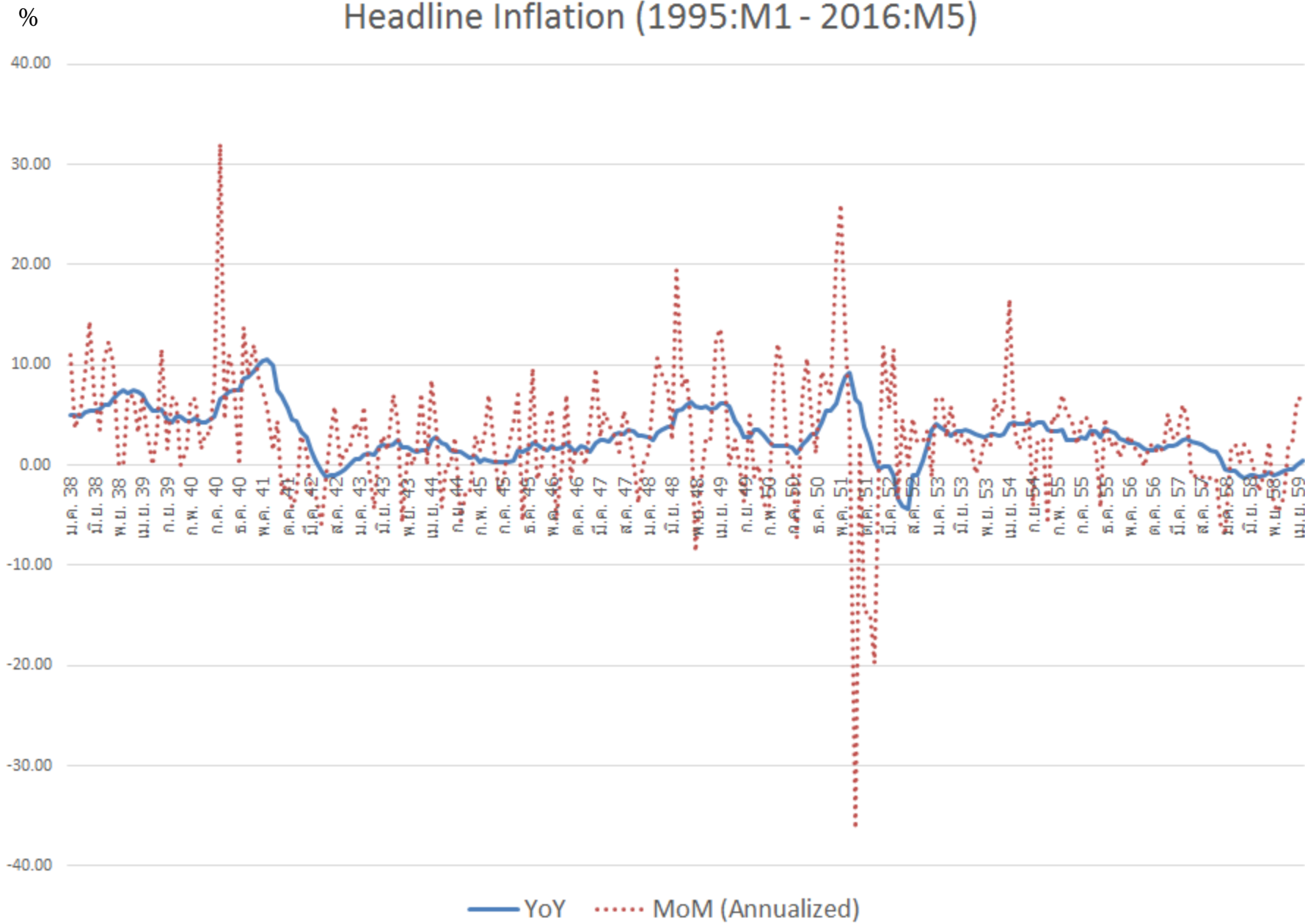
Discussion Point #1: Inflation Rates

- The dataset for estimation consists of quarterly data for the sample 1995Q1- 2015Q3...(p.10)
- ...Tables 2 and 3, which contain the standard deviation and persistence of the month-on-month sectoral inflation series....(p.11)
- Note (Figure 1): The inflation series are calculated as year-on-year changes in the consumer price index. (p.7)
- Figure 3 shows CPI inflation ..(p.15)
 - I plot inflation rates and find that Figure 3 is quarter-on-quarter headline CPI inflation (annualized).

Figure 1: Thailand headline and trend inflation measures

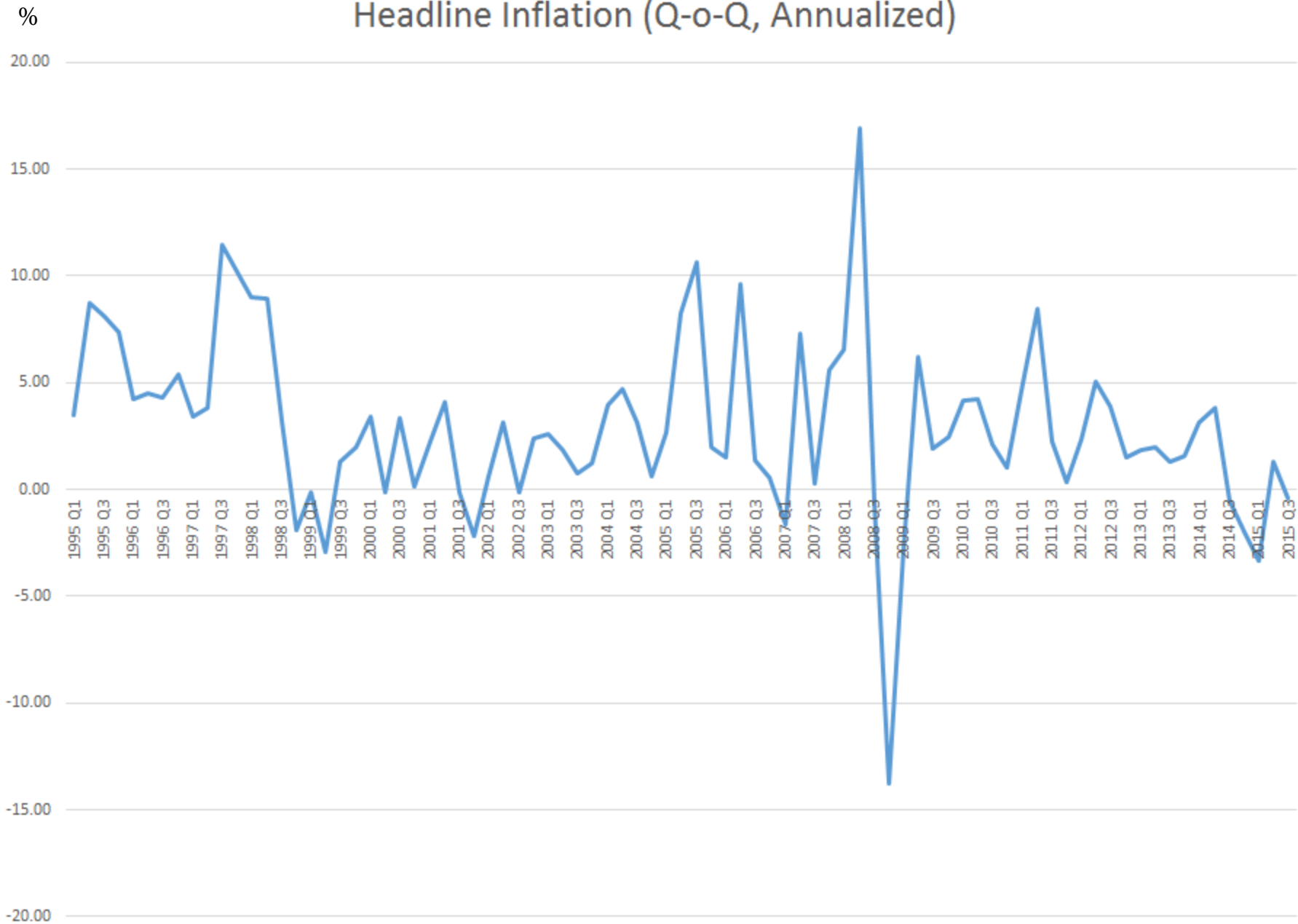


Headline Inflation (1995:M1 - 2016:M5)



Source: Ministry of commerce and my own calculation

Headline Inflation (Q-o-Q, Annualized)



Source: Ministry of commerce and my own calculation

Standard Deviation of Annualized Headline Inflation

	1995-1999	2000-2004	2005-2009	2010-2015
M-o-M	5.93	<u>3.83</u>	9.54	<u>3.63</u>
Q-o-Q	3.97	<u>1.81</u>	6.25	<u>2.52</u>

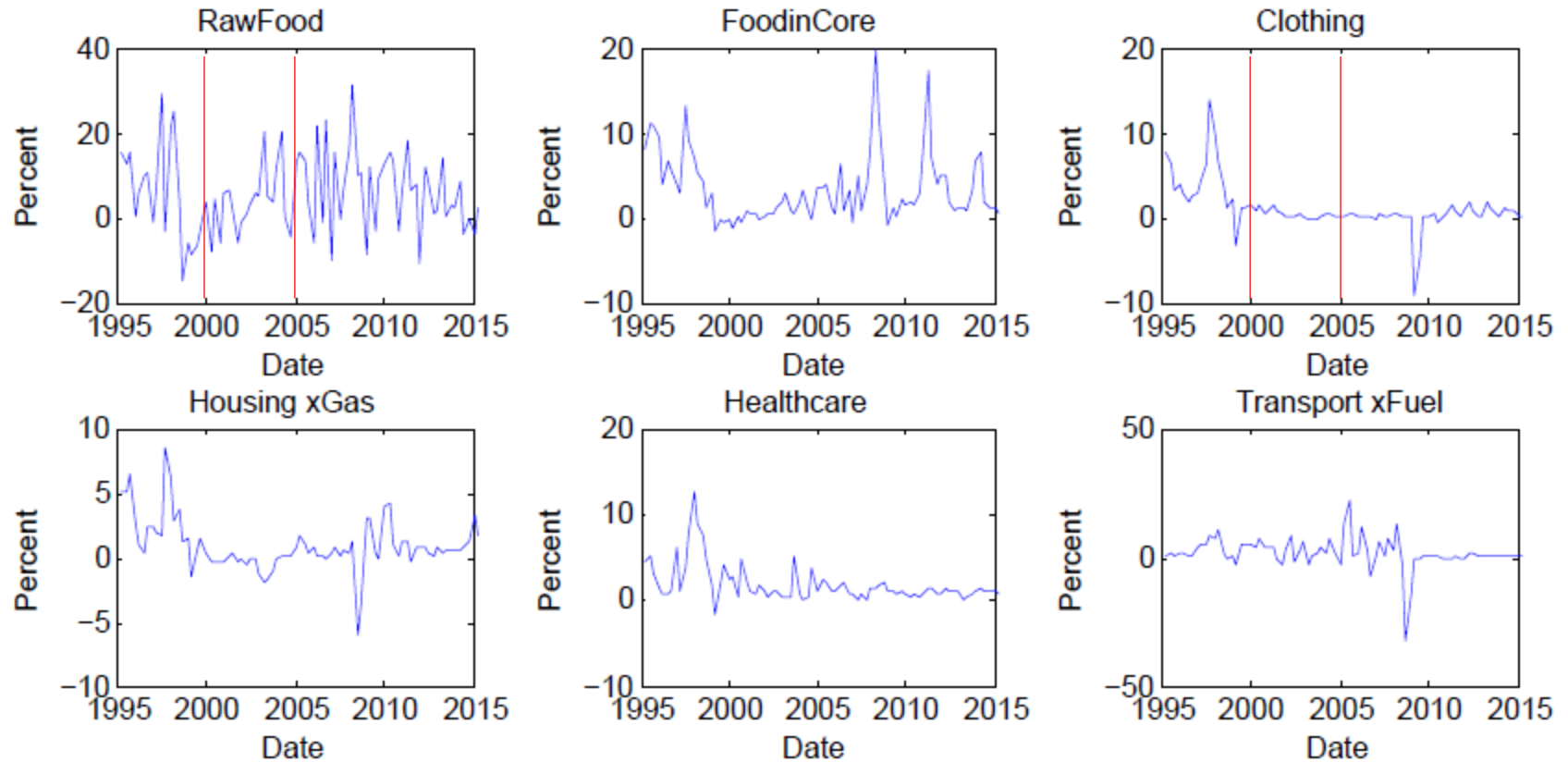
Source: Ministry of commerce and my own calculation

Table 3: Persistence as measured by the sum of AR(4) coefficients

	1995M1-1999M12	2000M1-2004M12	2005M1-2009M12	2010M1-2015M12
Raw Food	0.31	0.17	0.07	0.27
Food in Core	0.78	0.53	0.77	0.82
Clothing	0.82	0.71	-0.04	0.58
Housing x Gas, Elect	0.83	0.55	-0.21	0.46
Healthcare	0.83	0.42	0.81	0.89
Transport x Fuel	0.72	0.33	0.46	0.31
Recreation	0.61	0.14	0.01	0.55
Tobacco & Alcohol	0.43	0.05	0.34	0.45
Gas & Electricity	0.22	-0.06	0.01	0.35
Fuel	0.43	0.05	0.41	0.30

Manopimoke and Limjaroenrat (2016)

Figure 2: Sectoral inflation in Thailand



Manopimoke and Limjaroenrat (2016)

Discussion Point #2: Outlier Adjustment

Stock and Watson (2015)

- $S_t = 1$ with probability $(1 - p)$, and $S_t \sim U[2,10]$ with probability p . This mixture model allows for outliers in inflation – that is, large one-time shifts in the price level – which occur each period with probability p . (p.5)

This paper,

- $S_t = 1$ with probability p , which has a prior distributed Beta (α, β) . The prior parameters α and β are calibrated to reflect information that an outlier will occur every 4 years in a sample of the length 10 years. (p.13)

Figure 14: Healthcare

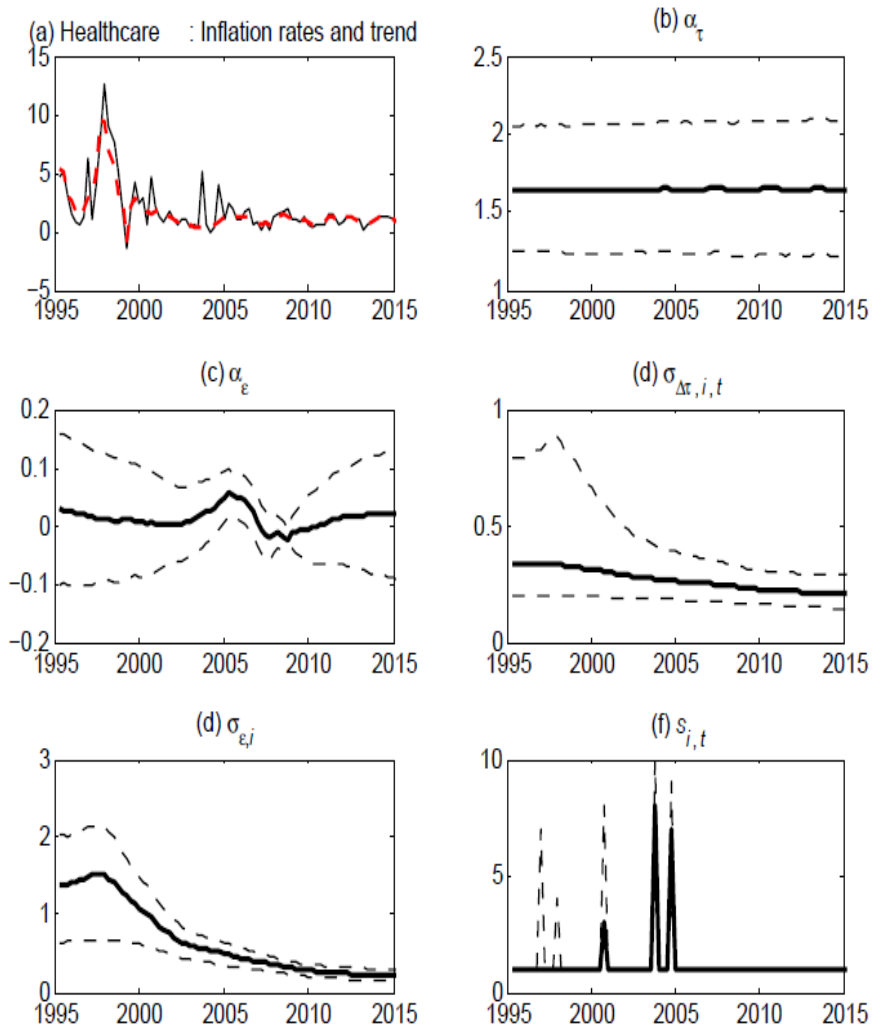
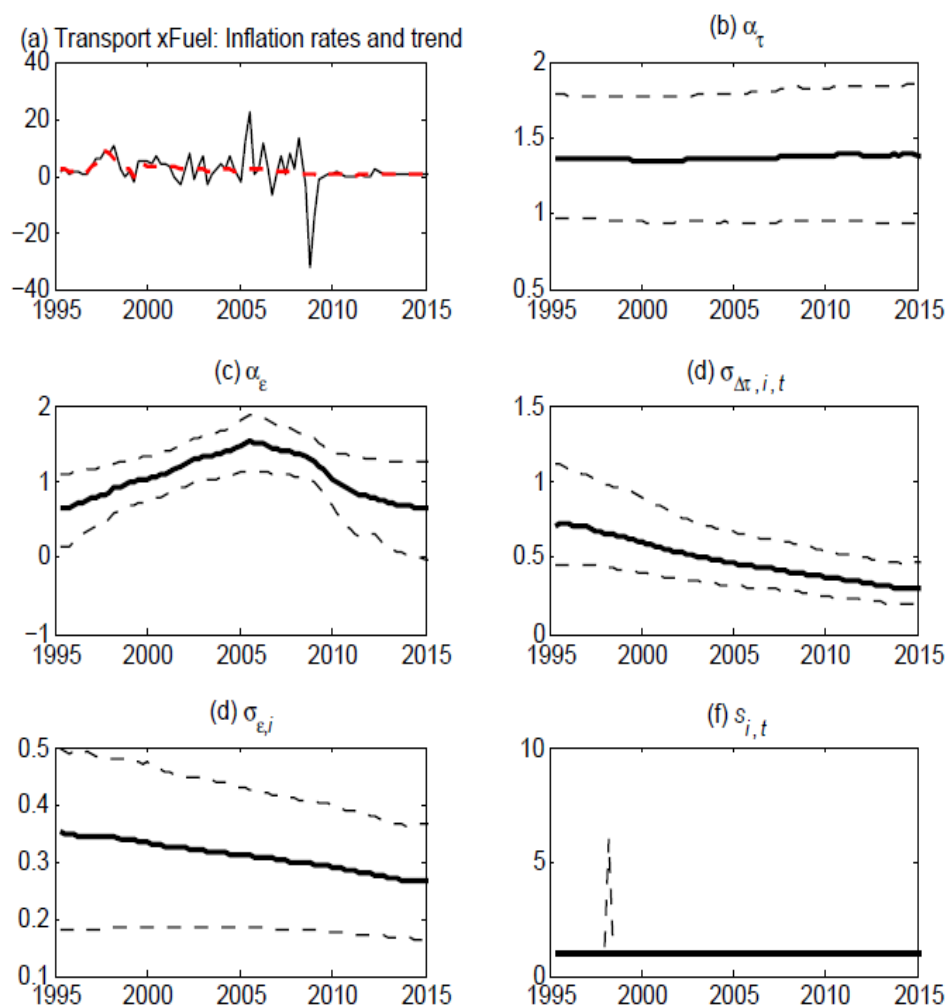


Figure 15: Transportation exclude fuel

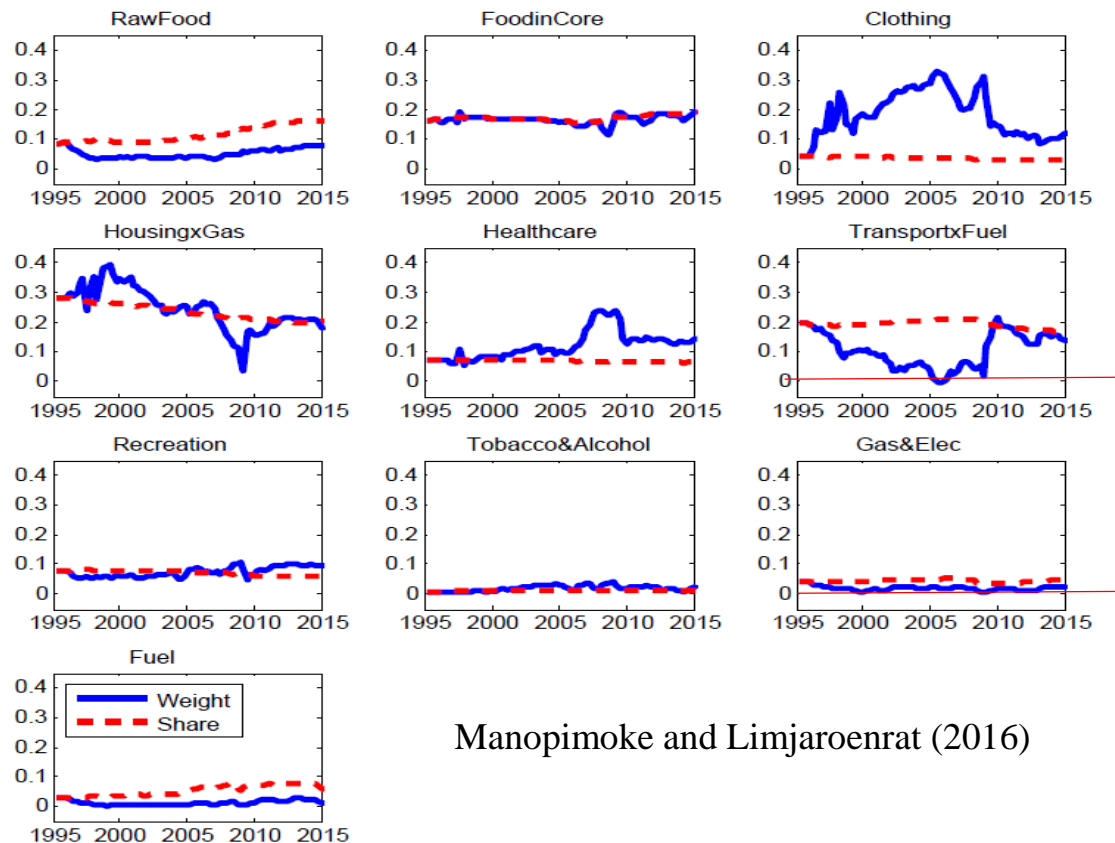


Manopimoke and Limjaroenrat (2016)

Discussion Point #3: Implied Weights

Figure 7: Implied weights in the filtered MUCSVO trend estimate and expenditure shares (10 components)

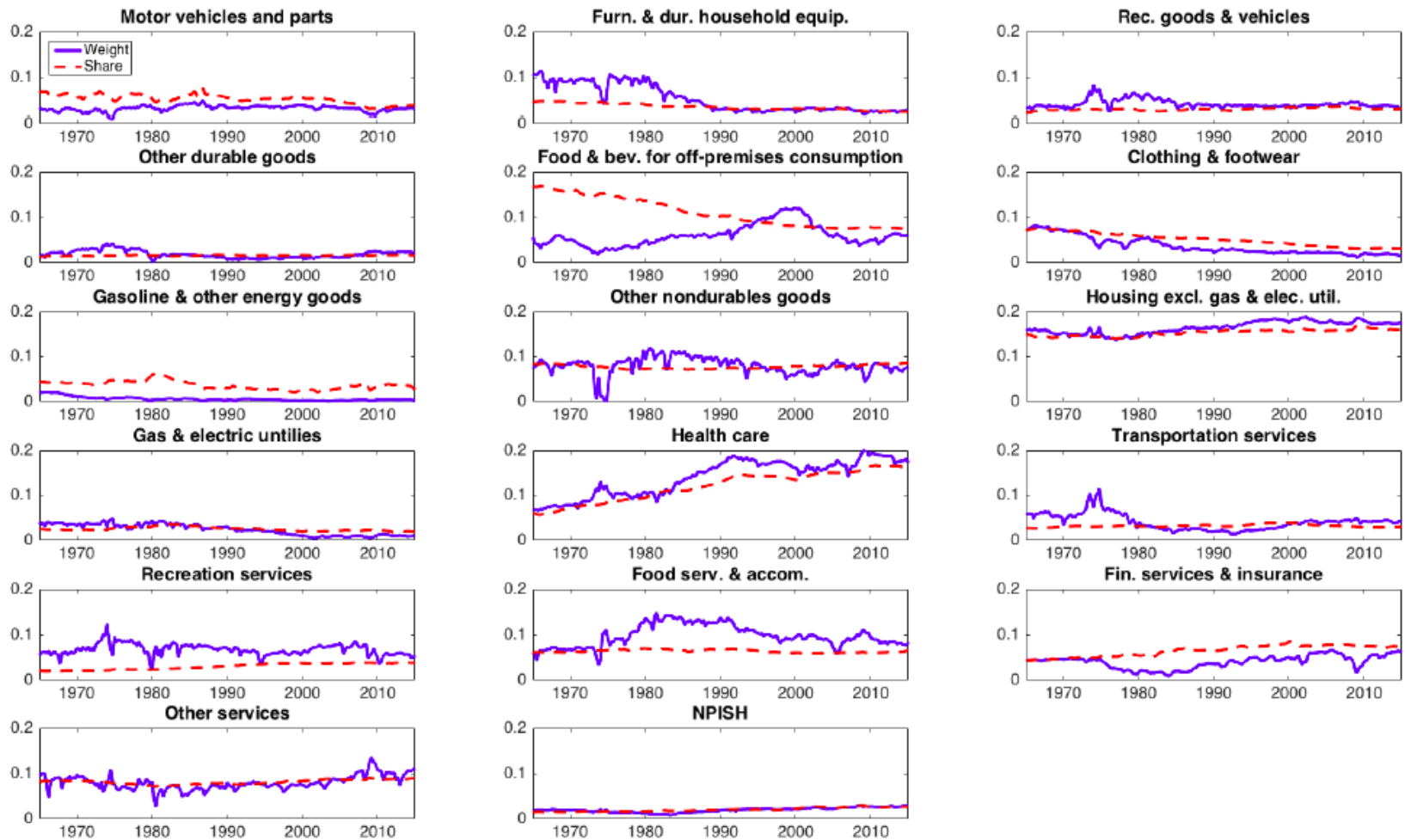
Could they
be less than
ZERO?



Manopimoke and Limjaroenrat (2016)

From Stock and Watson (2015)

Figure 5: Approximate weights for 17-component MUCSVO estimated trend and expenditure share



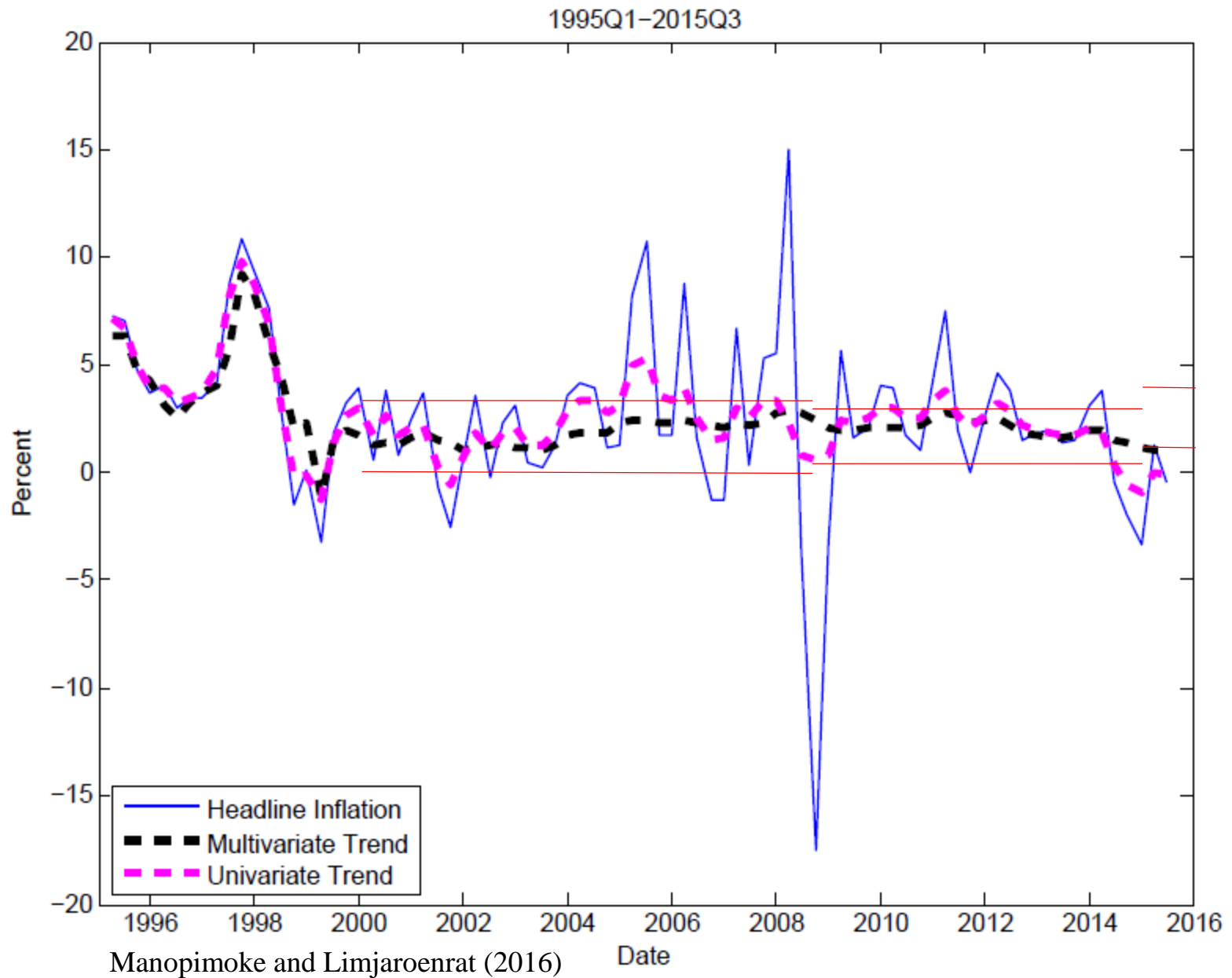
Discussion Point #4: Anchoring Inflation Expectations

Stock and Watson (2015) and this paper

Trend inflation = the long-term estimate of the inflation rate based on prices through the present.

- Figure 5 → UCSVO and MUCSVO trend inflation have become relatively stable since the year 2000 → success in anchoring of long-term inflation expectations
- How about Figure 1?
- Is the target or the target range relevant?

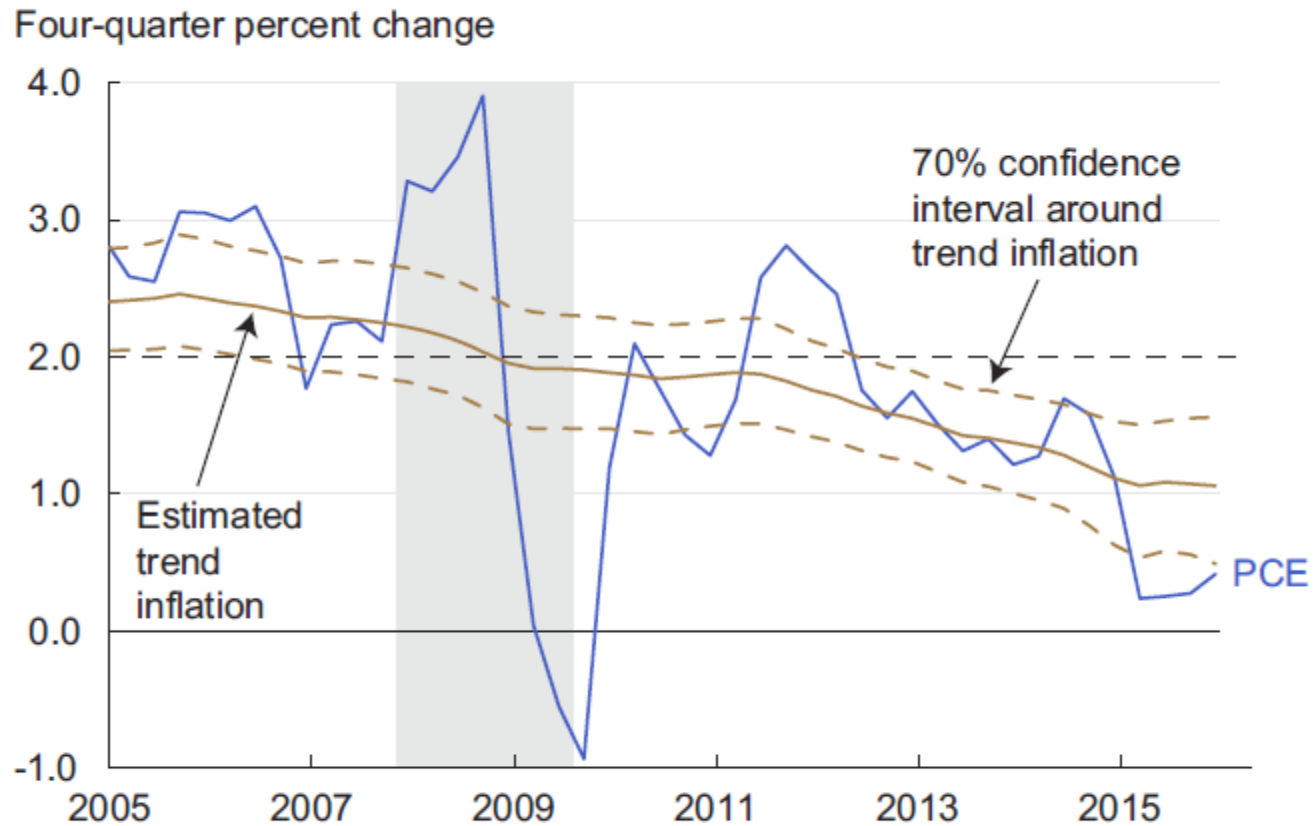
Figure 5: Multivariate trend inflation



Clark and Garciga (2016)

- *The Federal Reserve's Federal Open Market Committee (FOMC) has set a long-run objective for consumer price inflation, as measured by the price index for Personal Consumption Expenditures (PCE), of 2.0 percent.*
- *According to this method (Stock and Watson, 2007), the recent disinflation in PCE prices looks to be caused by both the decline in the trend and temporary deviation from it.*

Trend Inflation from Model 2: PCE

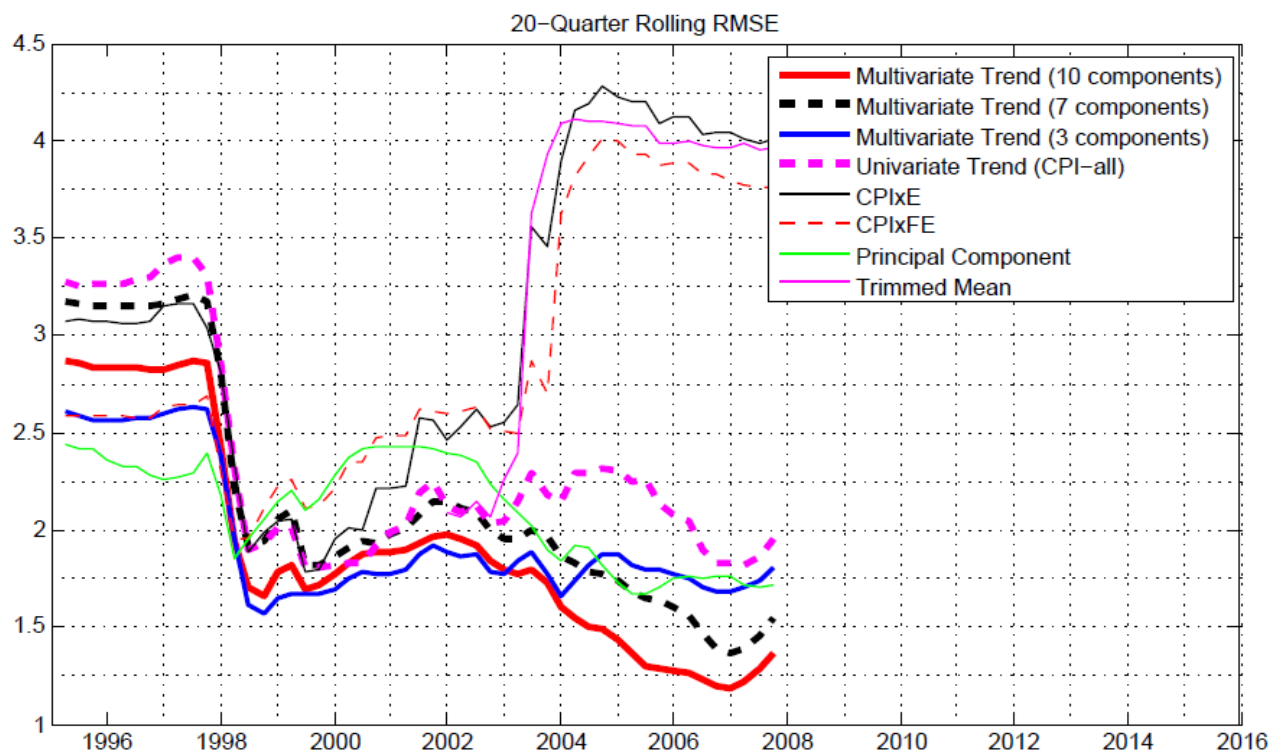


Note: Shaded bar indicates a recession.

Source: Bureau of Economic Analysis, authors' calculations.

Discussion Point #5: Inflation Forecasts

Figure 9: Rolling five-year RMSEs for 8-quarter ahead inflation forecasts



Note: Reported are the averages of the RMSEs based on a rolling five-year estimation window beginning in 1995Q1 for various trend inflation measures.

- It would be better to include the figure of inflation forecasts based on UCSVO and MUCSVO models (+ PCA?).

Forecasts of PCE Inflation



Bednar and Clark (2014)

References

- Bednar, W. and Clark, T. E. (2014) Methods for Evaluating Recent Trend Inflation, *Economic Trends*, Federal Reserve Bank of Cleveland, March 28, 2014
- Clark, T. E. and Garciga, C. (2016). Recent Inflation Trends, *Economic Trends*, Federal Reserve Bank of Cleveland, January 14, 2016
- Stock, J. H. and Watson, M. W. (2007). Has US Inflation become harder to Forecast? *Journal of Money, Credit, and Banking*, 39, 3-33.
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