



JSPS Grants-in-Aid for Creative Scientific Research

Understanding Inflation Dynamics of the Japanese Economy

# デフレ脱却に向けて

渡辺 努

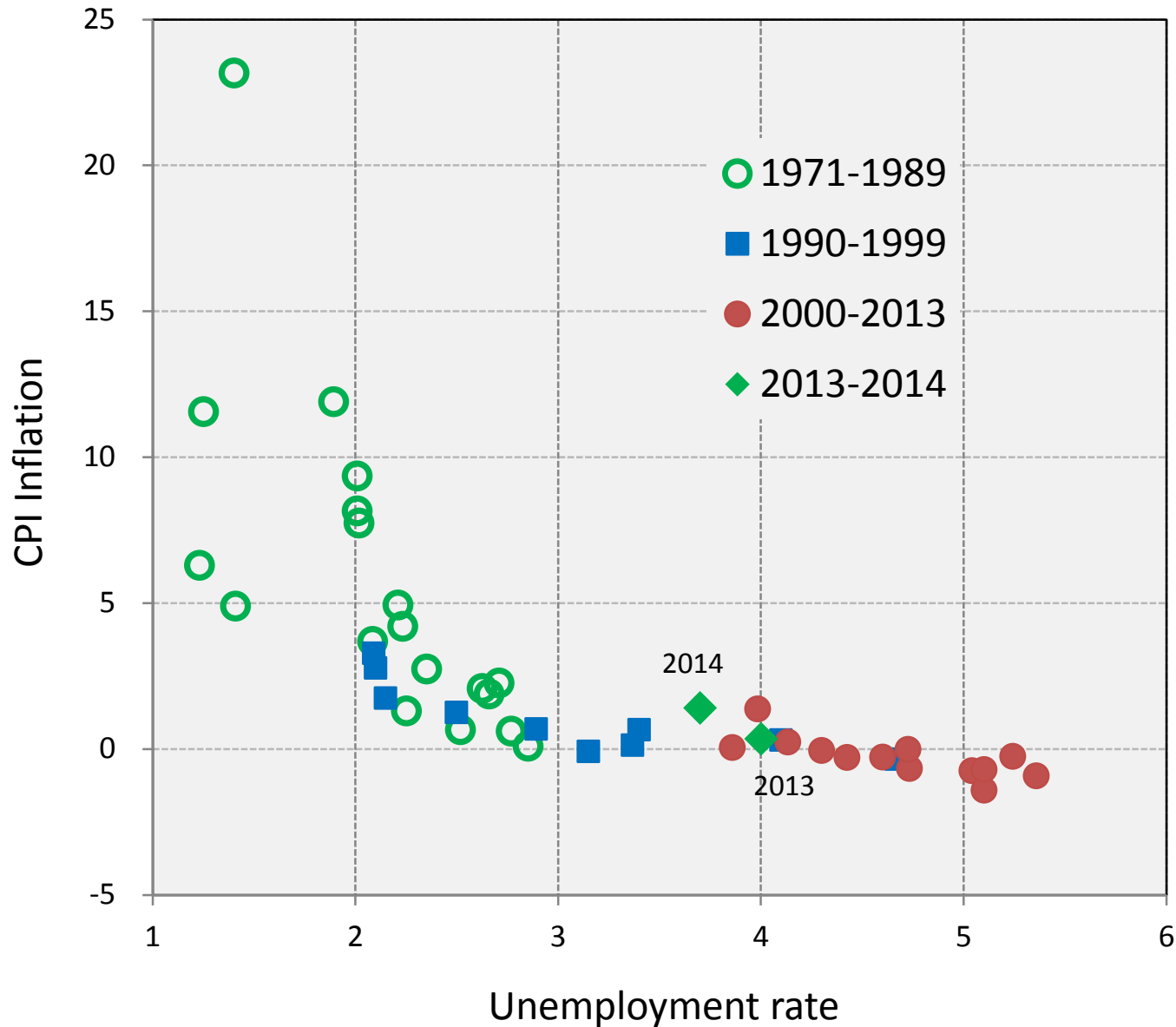
「東大日次物価指数」プロジェクト

[http://www.cmdlab.co.jp/price\\_u-tokyo/](http://www.cmdlab.co.jp/price_u-tokyo/)

<https://sites.google.com/site/twatanabelab/>

2014年5月24日

# Low responsiveness of inflation to unemployment



# UTokyo Daily Price Project

The Daily Index for the most recent period has been updated on 2014-02-24

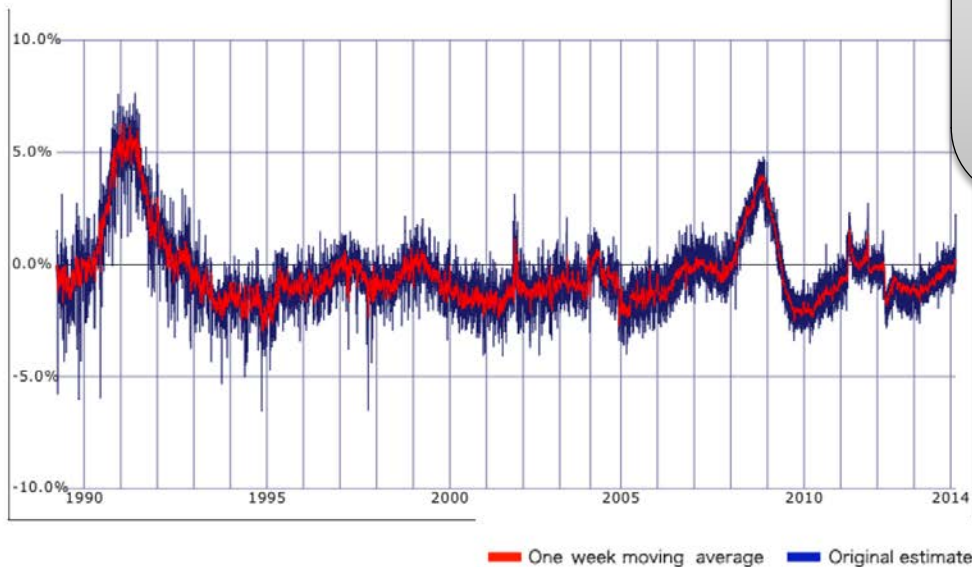


Daily Index

Monthly Index

FAQ

Daily Index > Nationwide



- Prices are collected every day from **300 supermarkets** sampled from all over Japan.
- Updated every day only with a **three day lag**.
- Covers **17 percent** of the official CPI

Original estimate:	-0.23%
One week moving average:	0.11%
Year-to-year inflation rate for 2014-02-21	

The current and historical data are downloadable. Free!



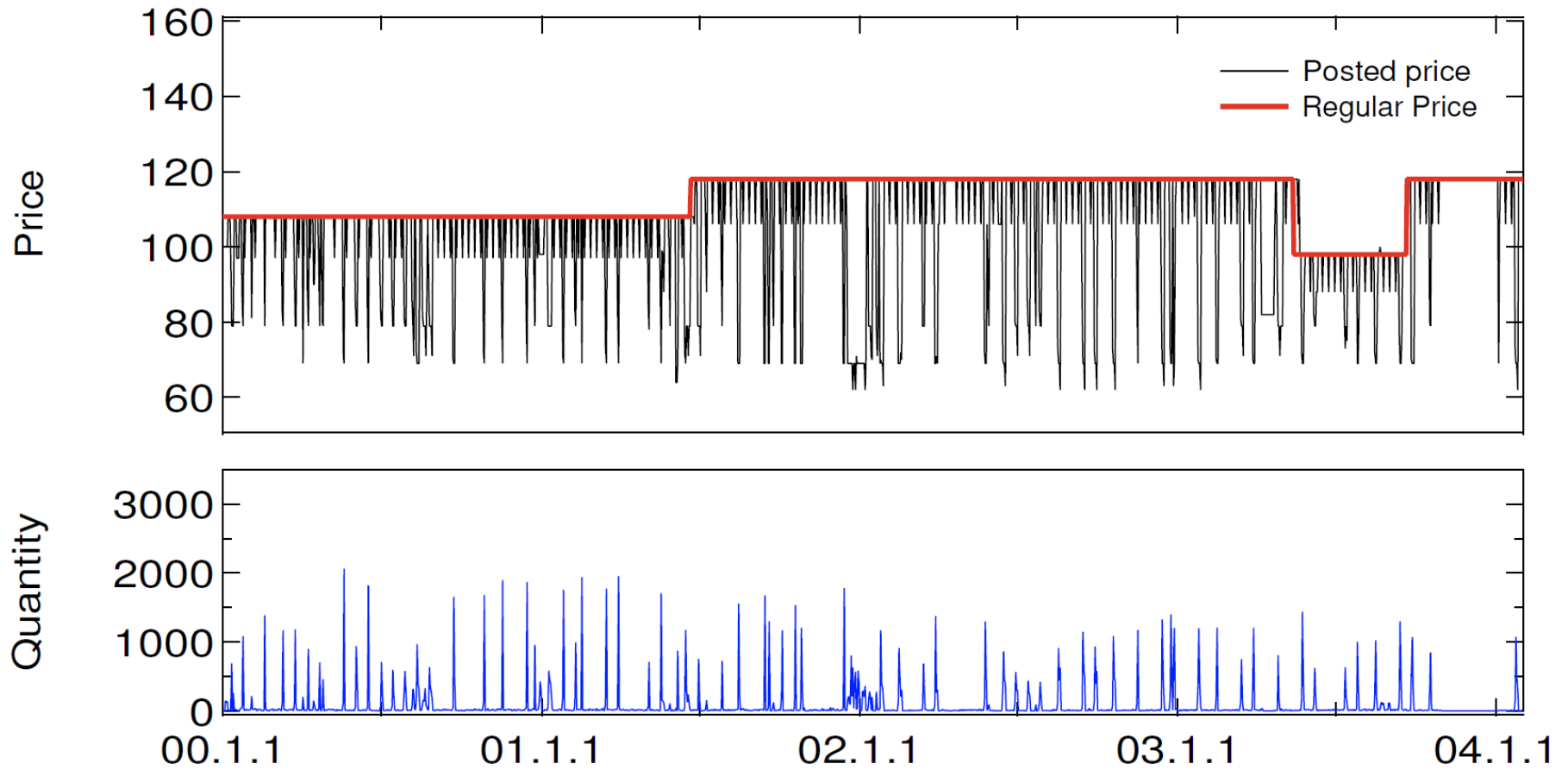
[http://www.cmdlab.co.jp/price\\_u-tokyo/dailys\\_e](http://www.cmdlab.co.jp/price_u-tokyo/dailys_e)

# How is the UTokyo Daily Price Index calculated?

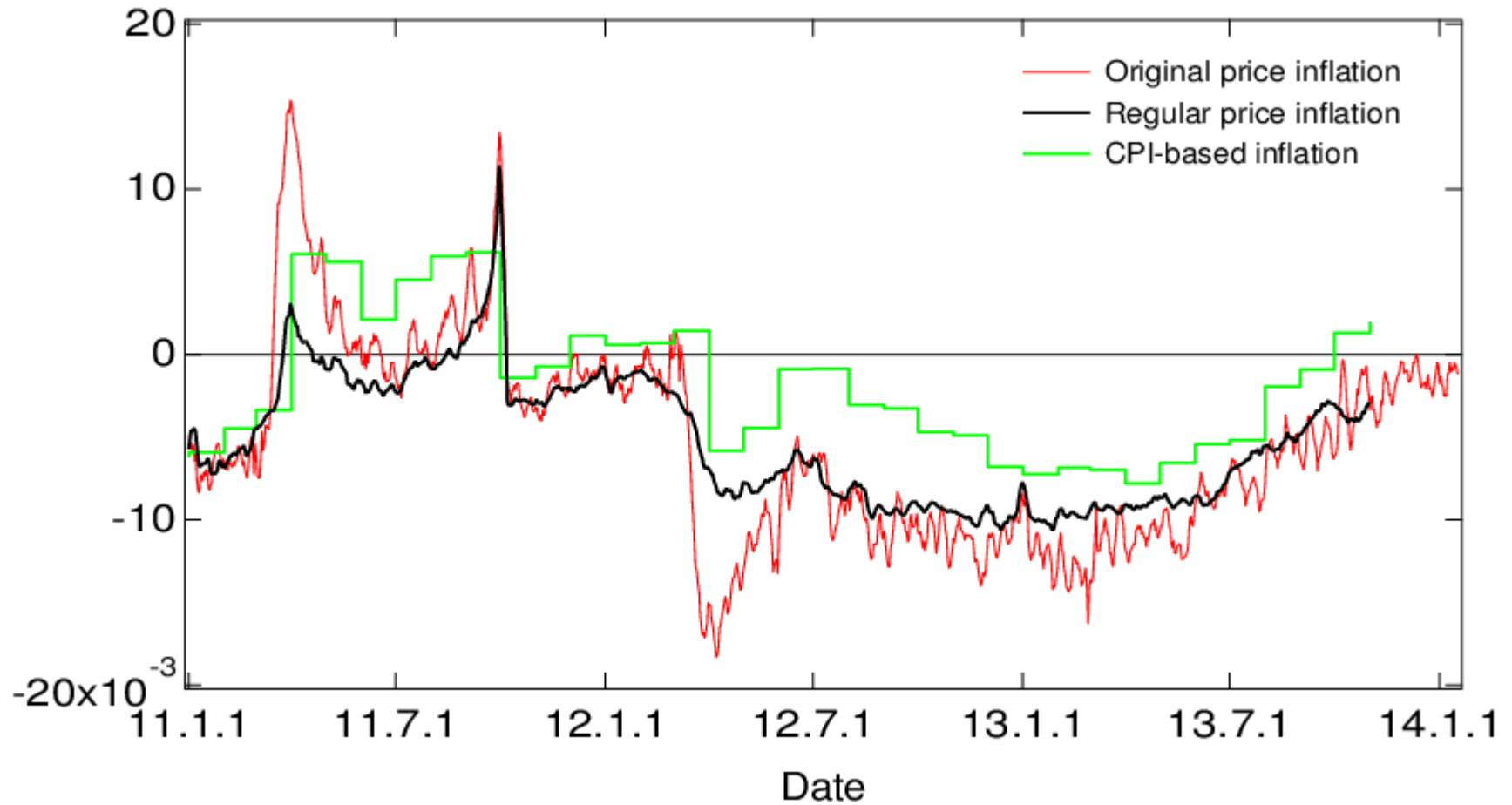
- The UTokyo Daily Price Index is **a daily version of the Törnqvist index**, which is known as one of the **superlative price indexes**.
  - CPI Manual released by ILO: “Many different kinds of mathematical formulae have been proposed over the past two centuries. While there may be no single formula that would be preferred in all circumstances, most economists and compilers of CPIs seem to be agreed that, in principle, the index formula should belong to a small class of indices called superlative indices.” (Consumer price index manual: Theory and practice, 2004, p.2)
- **Price relatives**: The daily inflation rate is calculated as the weighted geometric mean of price relatives across products, which are defined as the price ratios **between today and the same day of the previous year**.
- **Weights**: The weight for a product is given by the average of the sales shares of the product today and the sales share of the same product on the same day of the previous year.

$$\pi_{t,t-dt} = \sum_i \frac{s_{i,t} + s_{i,t-dt}}{2} \ln \left( \frac{p_{i,t}}{p_{i,t-dt}} \right)$$

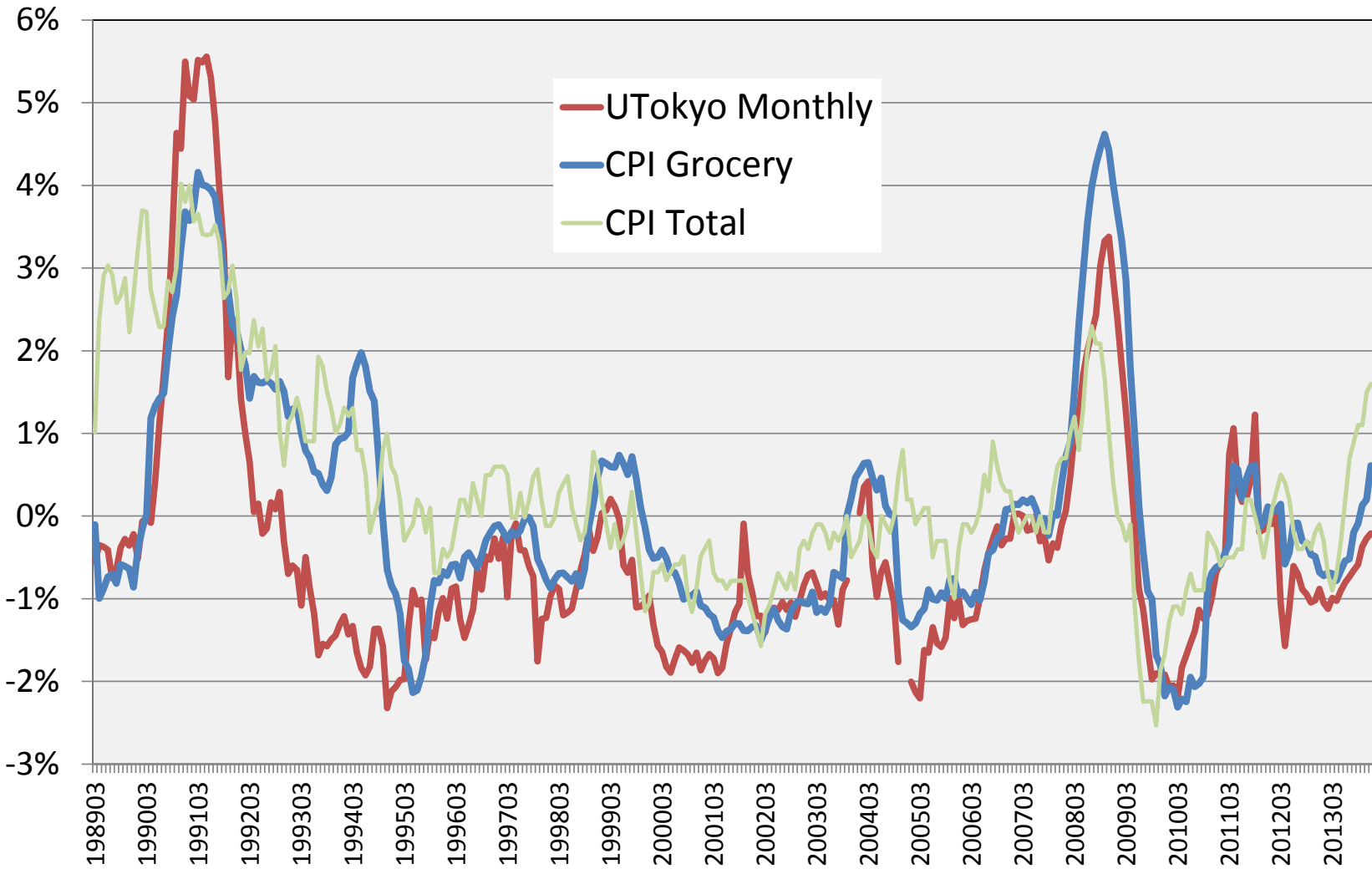
# Sales price and quantity sold for a particular product at a particular retailer

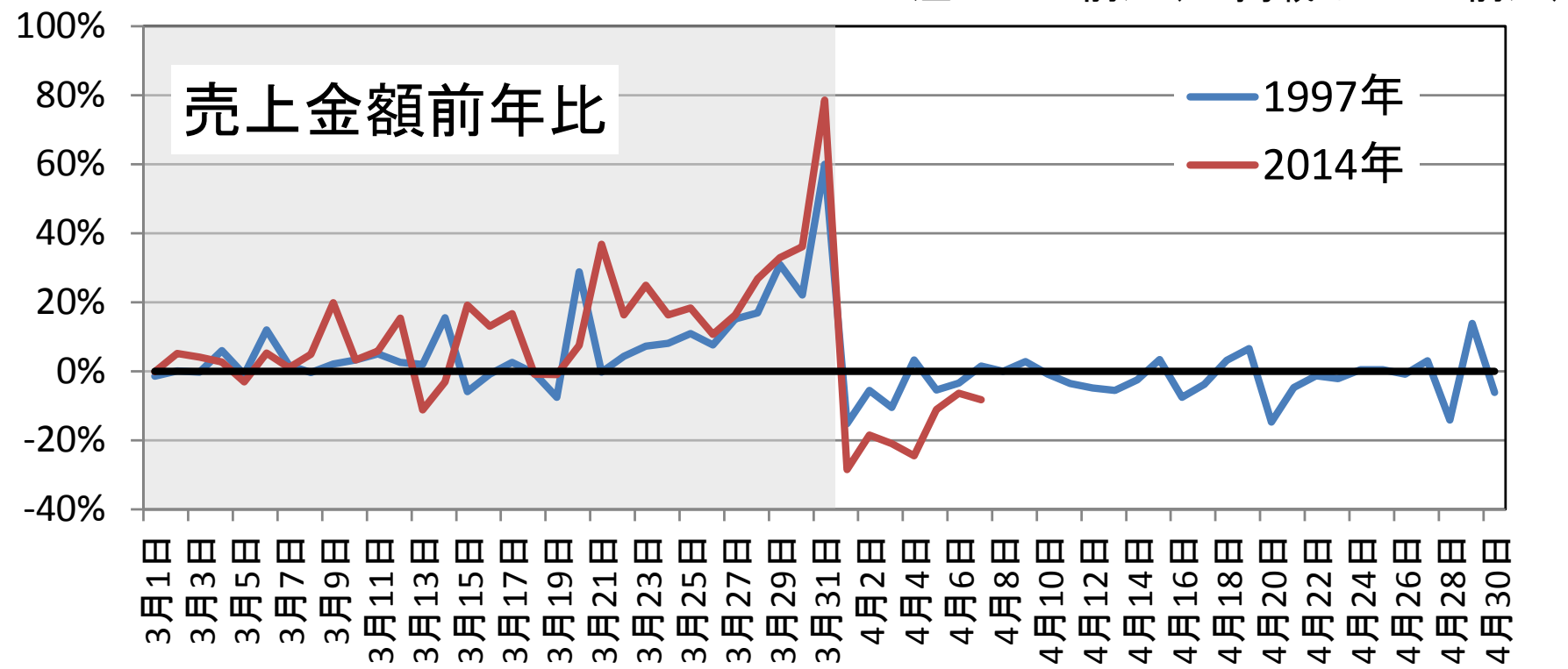
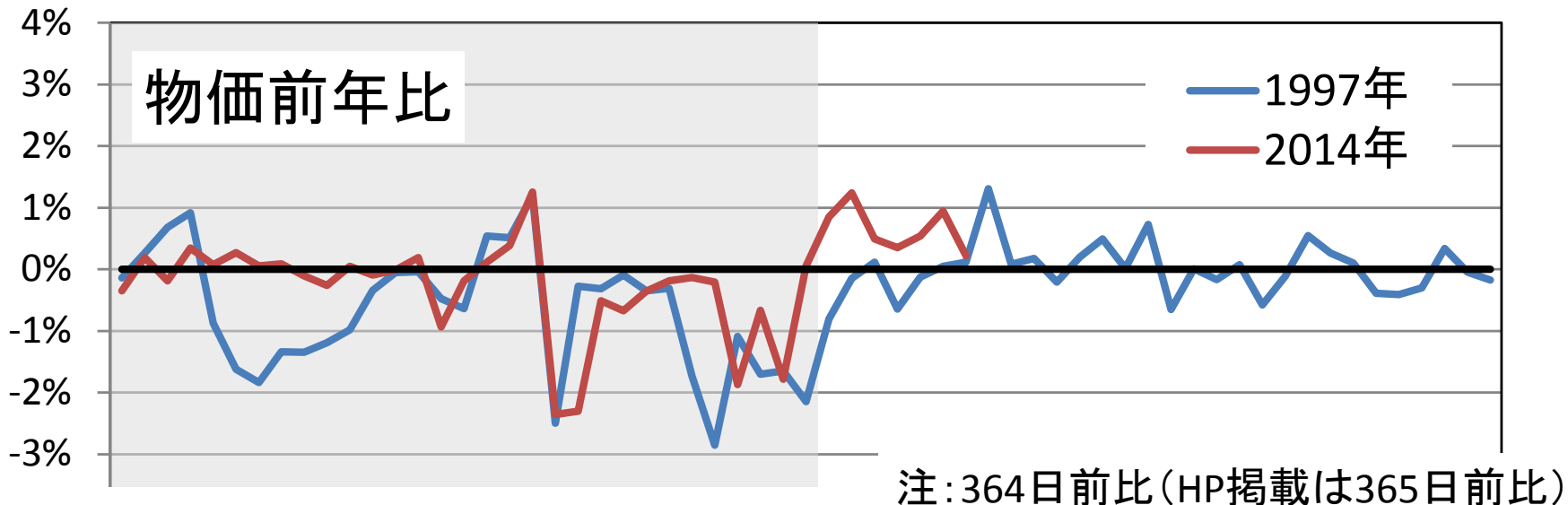


# Decomposition of daily inflation fluctuations into regular and sale price changes



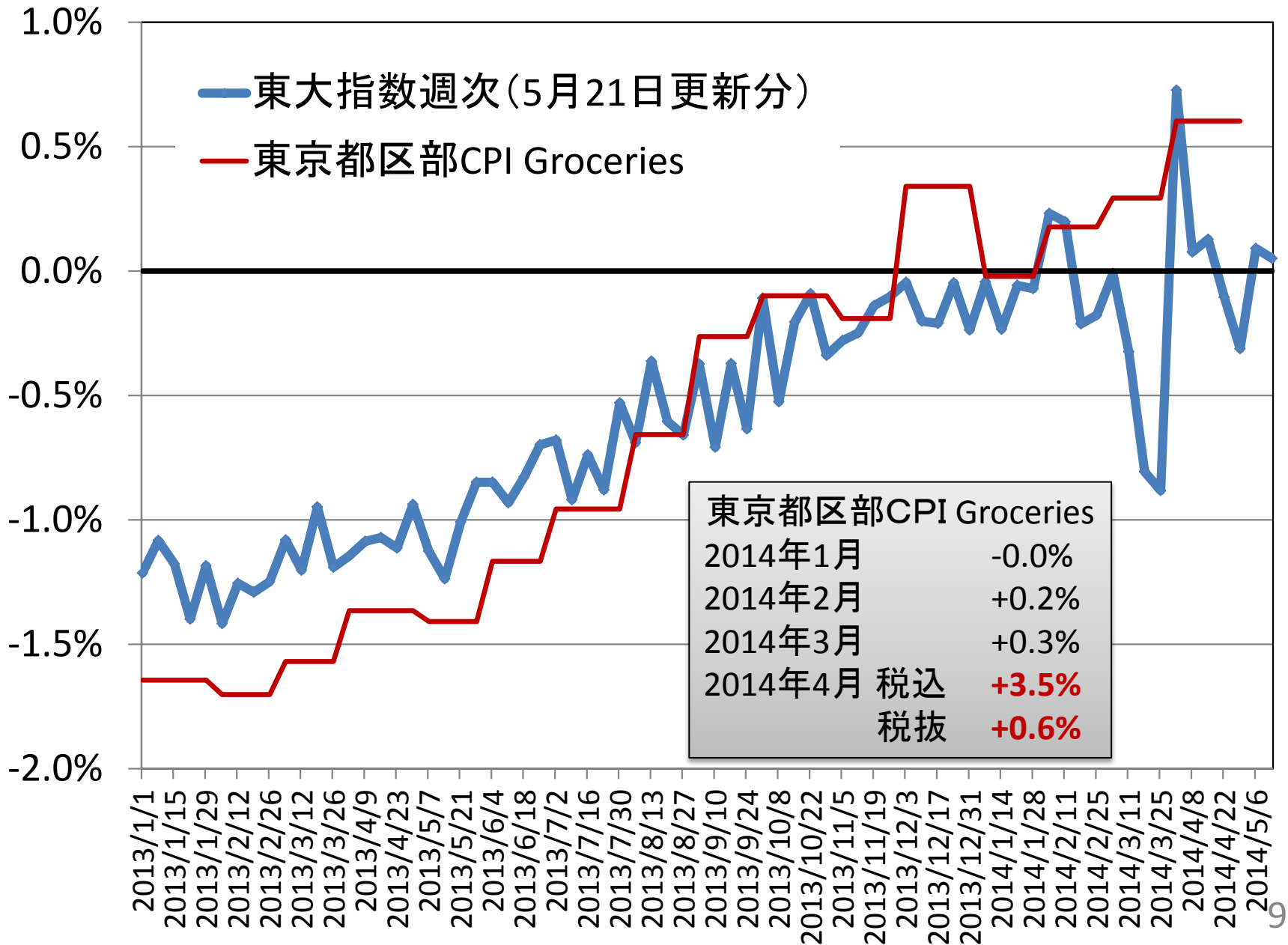
# UTokyo Monthly Index vs. CPI for 1989-2014







# 東大物価指数と東京都区部CPI



# 物価上昇を予想する人の割合 年齢別

