

Discussion of
Robert J. Gordon
“Apparel Prices and the
Hulten / Bruegel Paradox”

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Index Concepts and Measurement,
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Carol Corrado, Federal Reserve Board

Gordon asks:

- Can apparel (a “style good”) be a source of downward bias in the CPI – and thus resolve the H/B paradox ?
- Why should matched-model and hedonic price indexes for apparel be so different?

Main Findings

- Sears MM price indexes for women's and men's apparel are compared with CPI indexes.....most of them increase **less rapidly than the CPI**.
- **Similar to the CPI**, The index for women's clothing increases less rapidly than the index for men's clothing.
- Sears hedonic price indexes for women's dresses increase **much more** rapidly than Sears MM indexes (**but only** in the post-WWII era).

Gordon and Sears catalog price data

- In the raw Sears price data:
 - The 1993/1914 ratio of the median price of dresses sold by Sears in each year is about 33.
 - For the least expensive ones, which may be a more comparable grouping, the price ratio is about 60.
- Selected 1993/1929 ratios of NIPA data:
 - Personal disposable income, 60
 - Expenditures on all apparel, 24
 - Expenditures on womens' and children's apparel, 27

Matched-model and hedonic results: What determines a match?

- Gordon's matches for matched-model indexes are based on visual characteristics, including type of fabric.
- But, what if new styles in successive years—no matter how different—are the appropriate “like with like” comparisons?
- Compute an index number after first sorting data into groups according to newness.

What explains price in the hedonic regressions?

- Gordon's results use physical characteristics, such as weight, type of fabric, number of pieces, and the like, to explain the cross-sectional variation in prices in adjacent years.
 - But, what if these features don't capture what clothing really "does" for the purchaser?
 - Newness or "age" of the style is needed as a characteristic (Wycoff 2003; Corrado, Dunn, and Otoo 2004).
- Gordon does not have information on quantities, which would be needed to quantify the welfare change from some key developments in the post-WW II period:
 - The move to synthetics/read-to-wear in the 50s and 60s.
 - The availability of increased variety in the 70s and 80s.

Changes in fashion markets

- A **fashion good** is a product whose price decline over a “season” is due to product obsolescence.
- The market for fashion merchandise expanded broadly in the post WWII era and appears related to technical advances (Pashigian, et. al. 1995).
 - Electronic weaving/knitting machines drastically reduced downtime to implement design changes.
 - Earliest use was by an American firm in 1970.
- Pashigian and Bowen (1991) suggest the growing importance of fashion in women’s apparel has increased the seasonality in women’s apparel prices.
- Women’s apparel prices start higher at the beginning of the season relative to the season’s average and end lower than do men’s apparel prices.

Implications of changing supply conditions on apparel prices:

- Uncertainty about willingness to pay for new styles is greater for fashion goods.
- As a result, retailers charge higher prices for at the beginning of a season.
- Retailers then determine which items in a line have lower reservation prices -- and will need to be sold at a markdown to clear inventory.

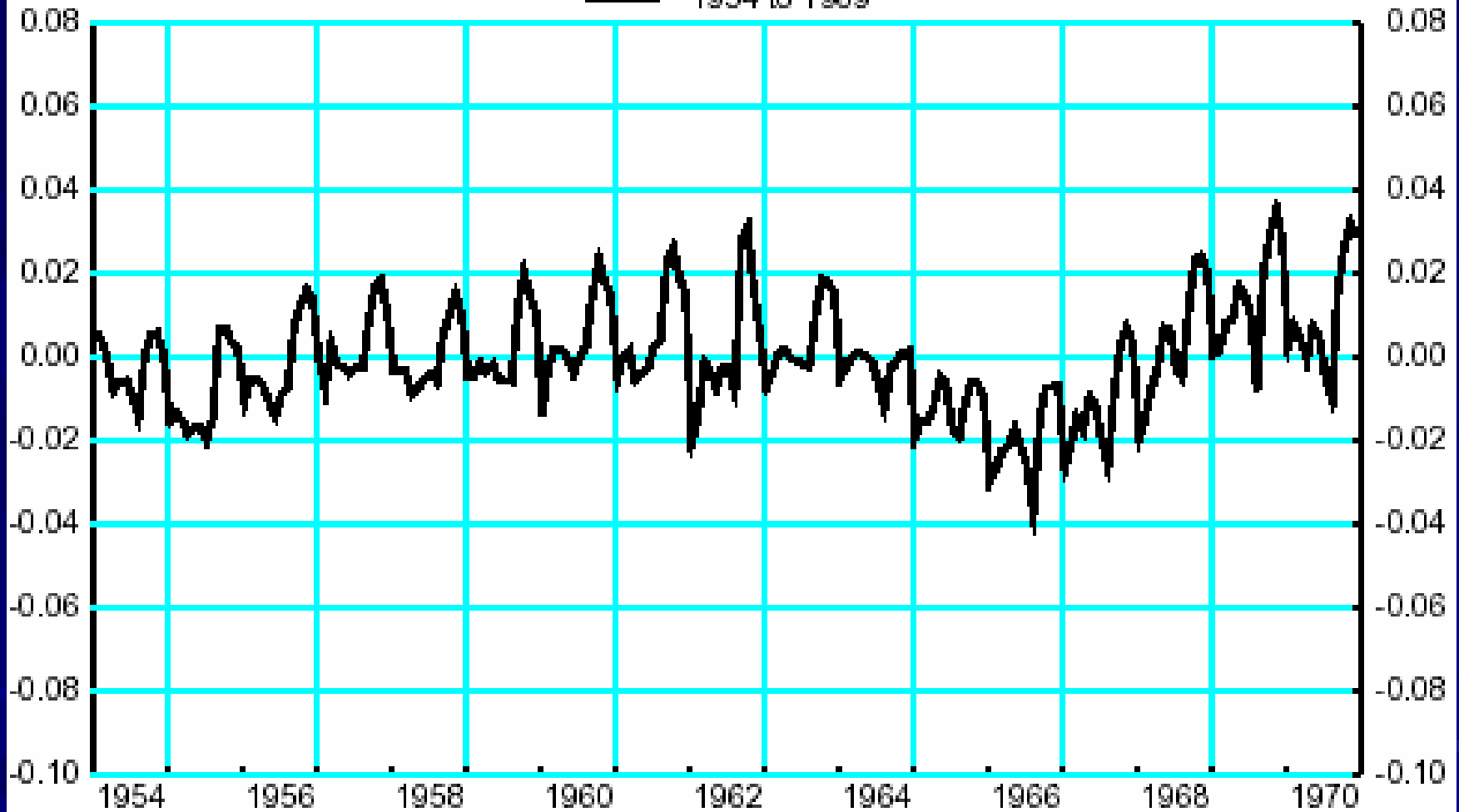
The next four slides show that the seasonal in women's apparel prices has continually increased since the mid-sixties.

Three charts show 15 years of the monthly NSA Women's Apparel CPI (detrended with the HP filter).

The next just shows the upward trend in the October values. This may be why Gordon's prices are rising over time.

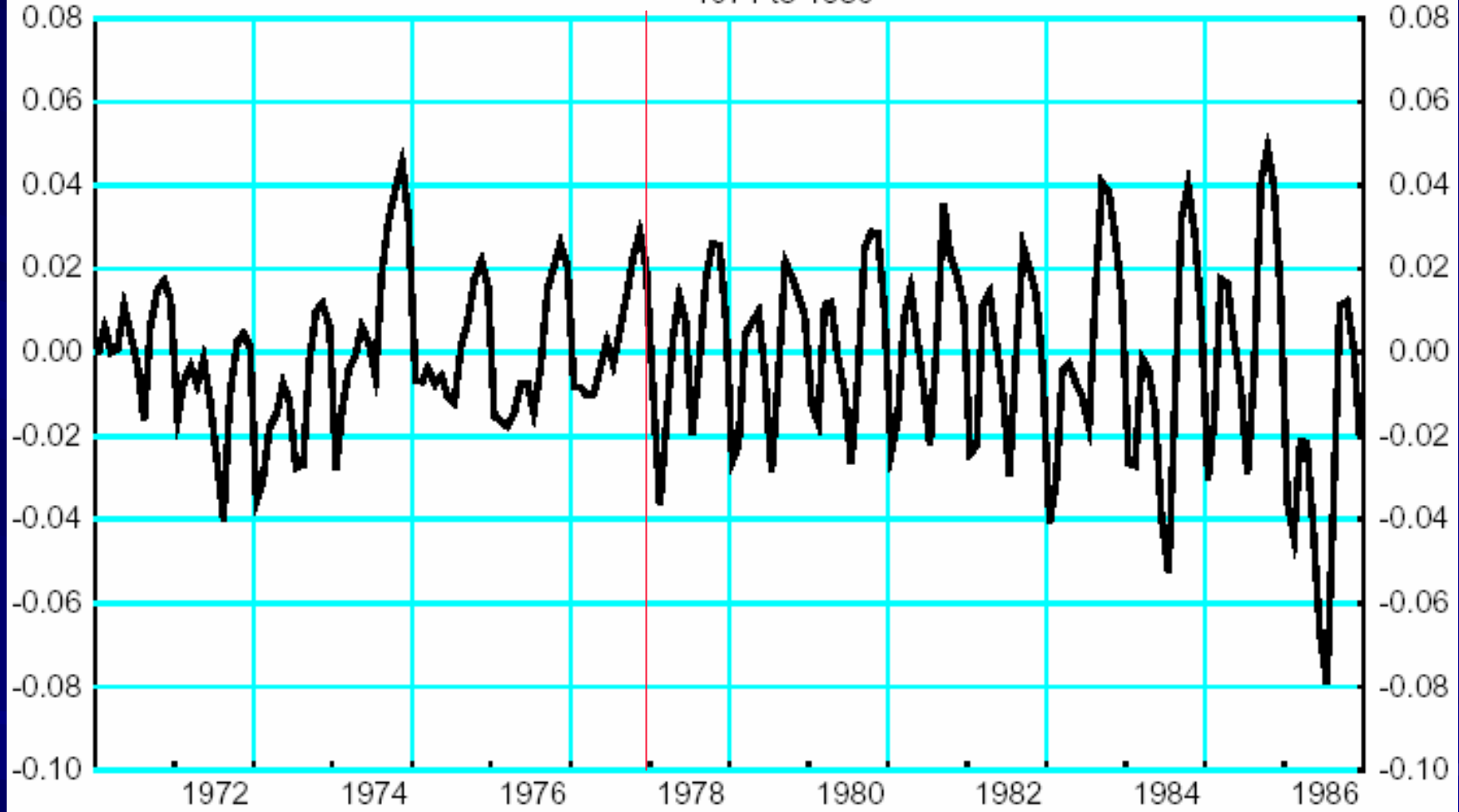
Detrended NSA CPI for Women's Apparel

— 1954 to 1969



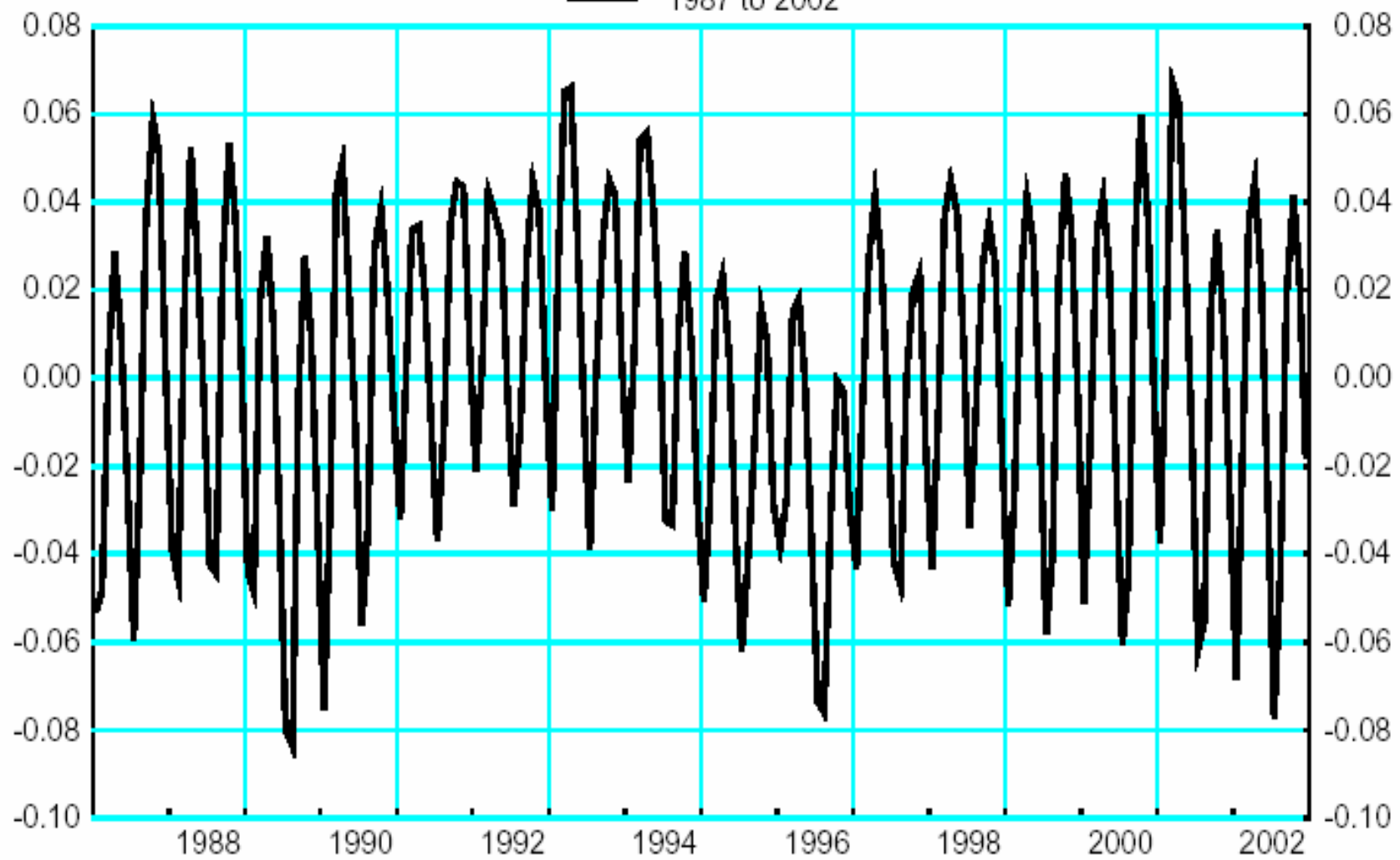
Detrended NSA CPI for Women's Apparel

— 1971 to 1986



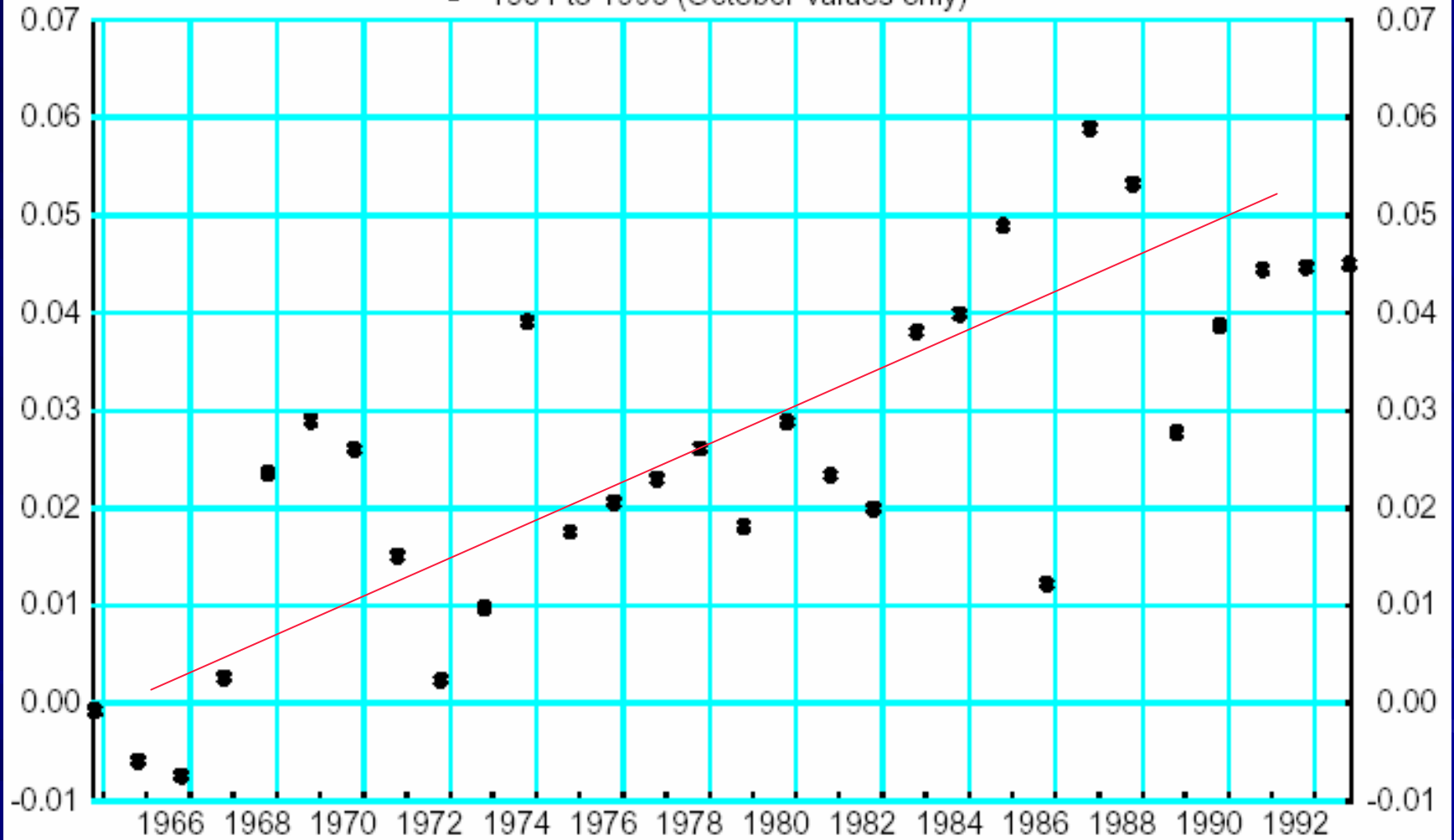
Detrended NSA CPI for Women's Apparel

— 1987 to 2002



Detrended NSA CPI for Women's Apparel

● 1964 to 1993 (October values only)



Conclusions

- Gordon has consistent evidence for the pre-WW II period. But, both his MM and hedonic indexes increase less rapidly than the CPI and thus don't resolve the Hulten/Bruegel paradox!
- The introduction of synthetics and the broadening of the fashion market (made possible by technical change) are not well handled by Gordon's data/approach.
- But, as long as one properly accounts for "newness" as a demand characteristic and/or uses a Diewert/Balk seasonal index number, I believe Gordon is more right than wrong in suggesting that raw price change for particular types of apparel may be the best measure of price change for these difficult-to-measure goods.

Selected PCE Shares, 1929 to 2003

