Sampling Error

- CPI is based on a small share of goods
  - Broda and Weinstein (2007) find that the sample is less than 5 percent of available goods
- High underlying volatility of prices means that sampling error is large
  - 95 percent confident band around CPI is +/- 0.2 percent
Quality/New Goods Bias
Lebow and Rudd (2003) review the existing research on the quality bias and assess it to be 0.4 percent in the US in 2003.

- However, they admit that existing research provides them often with “little guidance” and that their estimates are largely judgmental.
- Indeed they only have a high degree of confidence in their estimates for 7 percent of the sample.

Lebow and Rudd (2003) estimate hedonics lower CPI inflation by 0.2 percent. We believe that the greater usage of hedonics in the US probably means that the Japanese CPI deviates by this amount from the US CPI.
New Goods Bias

- The most comprehensive study of quality upgrading for a wide range of products is Broda and Weinstein (2007)
  - We examine all barcode data in the US and find that the rates of new product creation are enormous.
  - Overall, 40 percent of all purchases of goods in their sample in a year did not exist four years earlier.
  - This implies substantial impacts from product creation on the price index.
  - Using CES and translog utility functions, we find that the upward bias from new goods is 0.8 percent per year between 1994 and 2003.
# Summing Up

## Table 4: Estimates of CPI Bias

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</tbody>
</table>

*Selected Goods includes Computers, Cellphones,*