

*Misconceptions about  
Consumer Price Indexes: the  
U.S. Experience*

John Greenlees and Rob McClelland  
Ottawa Group  
May 28, 2009

# Purpose

- To summarize our *August Monthly Labor Review* (MLR) article on Misconceptions about the U.S. CPI  
[www.bls.gov/opub/mlr/2008/08/art1full.pdf](http://www.bls.gov/opub/mlr/2008/08/art1full.pdf)
- To provide background on why and how the paper was written



# Agenda

- Who are the critics?
- What have they said?
- Determining how we should respond
- The specific CPI controversies, in turn
- The paper's release and its aftermath



# Motivation for the Paper

- Numerous critics have charged that the CPI seriously underestimates inflation
- That view spread widely through the investment community, the media, the blogosphere, and the general public
  - Crescendo in spring/summer 2008
  - Despite few adherents in academia
- But there has been little direct contact between BLS and those critics



# Why is the Criticism Occurring?

- Heterogeneous inflation experiences among consumers imply that some consumers face more price inflation than is reflected in a CPI.
- The prices of frequently purchased items, such as food and gasoline, have been rising more rapidly than the CPI as a whole.
- Price increases are more painful than the pleasure from identical price decreases.
- The CPI doesn't immediately reflect some announced price increases



# The Critics' Overall View

- BLS has made numerous methodological changes to the CPI in recent decades
- In each case the intent has been to suppress evidence of rising prices
- The BLS methods are not consistent with those used in other countries
- The changes have had a large impact on the rate of growth of the CPI



# The Inflation Context, June 2008

CPI-U 12-month changes, All US:

- All Items 5.0 percent
- All Items Less Food and Energy (“Core”) 2.4 percent
- Food at Home 6.1 percent
- Gasoline 32.8 percent
- Owners’ Equivalent Rent 2.6 percent



# Bill Gross

- Called "the nation's most prominent bond investor" by the [New York Times](#)
- Cofounder of PIMCO, author PIMCO newsletter
- Articles
  - “Haute Con Job,”
  - “Con Job Redux,”
  - “Hmmmmm”





# Kevin Phillips

- Well-known author and columnist
- Former advisor to President Nixon
- Book, *Bad Money*
- *Harper's* article, “Numbers Racket”



# Barry Ritholtz

- Widely read blog “*The Big Picture*”  
[www.ritholtz.com](http://www.ritholtz.com)
  - 2.2 million page views in February 2009
- CEO and Director of Equity Research at Fusion IQ



# John Williams

- Operator, *Shadow Government Statistics* website [www.shadowstats.com](http://www.shadowstats.com)
- Producer, SGS Alternate CPI
- Article, “Government Economic Reports: Things You've Suspected But Were Afraid To Ask!”  
[www.shadowstats.com/article/consumer\\_price\\_index](http://www.shadowstats.com/article/consumer_price_index)



# Other Venues of Criticism

- Magazines: e.g., *Fortune*, “The Great Inflation Cover-Up”
- Newspapers, e.g., *San Diego Union Tribune*, “The Fed's inflation gauge isn't realistic, critics say”
- Newsletters, e.g., *Schwab Investing Insights*



# How Should the BLS Respond?

- The recent critics are not academic or government researchers
  - Not on advisory committees
  - Do not participate in the conferences that BLS attends
- Letters to the editor are often ineffective
- BLS prefers to focus on explaining issues, not attacking individual critics



# Why an *MLR* Article?

- The *MLR* is a natural venue for an article aimed at a broader audience than mathematically-oriented researchers
- It is widely distributed among the public and economic commentators
- BLS can easily highlight and promote articles in the *MLR*



# Major Issues

- The Context
- The Criticism
- Quotes
- Our Response



# Substitution: The Context

- BLS began using geometric mean to compute most CPI basic item/area indexes in 1999
- Purpose was to reflect consumer substitution in response to relative price change
- In general, geometric mean yields lower index changes than arithmetic mean





# Substitution: The Criticism

- The BLS approach amounts to tracking a decreasing standard of living
  - When beef gets too expensive, people switch from steak to hamburger and BLS compares the price of steak to the price of hamburger
  - CPI reflects any switch from filet mignon to flank steak, but never the reverse



# Substitution: Quotes

Product substitution and geometric weighting both presumed that more expensive goods and services would be used less and substituted with their less costly alternatives: more hamburger/less filet mignon when beef prices were rising, for example.

*-Bill Gross*



# Substitution: Quotes

The Boskin/Greenspan argument was that when steak got too expensive, the consumer would substitute hamburger for the steak, and that the inflation measure should reflect the costs tied to buying hamburger versus steak, instead of steak versus steak. ... Cost of living was being replaced by the cost of survival. The old system told you how much you had to increase your income in order to keep buying steak. The new system promised you hamburger, and then dog food, perhaps, after that.

*-John Williams*



# Substitution: Quotes

When someone buys Chicken instead of Steak because meat has gone up in price, that's evidence of inflation. The substitution process fraudulently rationalizes this to eliminate inflation from the BLS basket. ...

Incidentally, the intellectually dishonest sleight of hand of substitution is courtesy of the Boskin Commission.

*-Barry Ritholtz*



# Substitution: *MLR* article

- Geometric mean ignores substitution between hamburger and steak because these are in different basic index cells
- Only affects answer if relative prices change— not if prices rise in parallel for all cuts of beef
- If flank steak rises by more than filet mignon, geometric mean *will* reflect substitution toward the more expensive cut
- Geometric mean is generally recommended and widely used outside the US



# Quality Adjustment: The Context

- When an item replacement occurs in the CPI sample, BLS makes a judgment about how much of the price difference is due to “quality”
- A variety of simple and complex, implicit and explicit methods are used for quality adjustment
- Starting in 1998, CPI expanded its use of hedonic models into a number of consumer durable components such as televisions and computers



# Quality Adjustment: The Criticism

- The BLS arbitrarily lowers the CPI by making subjective judgments about quality
  - When a product changes, BLS zeroes out any price change because it assumes quality has improved
  - In using hedonics, BLS is estimating the pleasure consumers get from a good
  - Only price decreases are counted



# Quality Adjustment: Quotes

The hedonic adjustment... is as hard to estimate as it is to take seriously.

*-Kevin Phillips*





# Quality Adjustment: Quotes

If hedonic quality improvement is anti-inflationary, what about corresponding drops in quality? The low, low price retailers sell cheap clothing, but subjectively speaking, the quality has been decreasing rapidly. Where's the Hedonic adjustment for that?

*-Barry Ritholtz*



# Quality Adjustment: Quotes

... the average person also tends to sense higher inflation than is reported by the BLS, because of hedonics, as in hedonism. Hedonics adjusts the prices of goods for the increased pleasure the consumer derives from them. That new washing machine you bought did not cost you 20% more than it would have cost you last year, because you got an offsetting 20% increase in the pleasure you derive from pushing its new electronic control buttons instead of turning that old noisy dial, according to the BLS.

- *John Williams*



# Quality Adjustment: Our Response

- BLS must make adjustments for quality change—e.g., for candy bar sizes
- Hedonics is just one method BLS uses
- We do not estimate “pleasure”; we measure prices of characteristics
- Hedonic modeling is widely recommended internationally



# Rental Equivalence: The Context

- Until 1980s, homeowner shelter costs were measured by new house prices, mortgage interest, and other out-of-pocket components
- In a high-inflation environment, this approach led to volatile, and questionable, index movements
  - The mortgage interest cost index rose 40.3 percent in the year ending March 1980
- CPI-U switched to rental equivalence (imputing owner costs from rents) in 1983, CPI-W in 1985



# Rental Equivalence: The Criticism

- The intent of rental equivalence was to suppress measured price increases
  - Because it excludes house prices, the CPI fails to reflect the true cost of housing
  - Argument more commonly made during bubble in U.S. house prices



# Rental Equivalence: Quotes

It was claimed that a measure based on what an owner might get for renting his house would more accurately reflect the real world – a dubious assumption belied by the experience of the past 10 years during which the average cost of homes has appreciated at 3x the annual pace of the substituted owners' equivalent rent (OER), and which would have raised the total CPI by approximately 1% annually if the switch had not been made.

- *Bill Gross*



# Rental Equivalence: Quotes

While the BLS was correct in assuming that this statistical ruse would fool the average citizen into believing that inflation was only 2 percent (and therefore be willing to accept a meager 4 percent return on his bank savings), what is remarkable is that the ruse also fooled the bond traders, and apparently continues to do so...

- *Robert Hardaway*



# Rental Equivalence: Our Response

- Economic theory says durable goods prices should be measured using a flow-of-services approach (user cost or rent)
- A house is an investment asset, not just a consumption good.
- There is no evidence that rental equivalence understates homeowner costs in the long run
- It has been supported by academic economists and all the prominent panels and agencies that have reviewed the CPI
- It is the most common method used in other countries





# Methodology Impacts: The Context

- Three major methodological changes to the CPI have been noted by critics
  - Geometric mean, 1999
  - Expansion of hedonic quality adjustment, 1998-present
  - Rental equivalence in housing, 1983

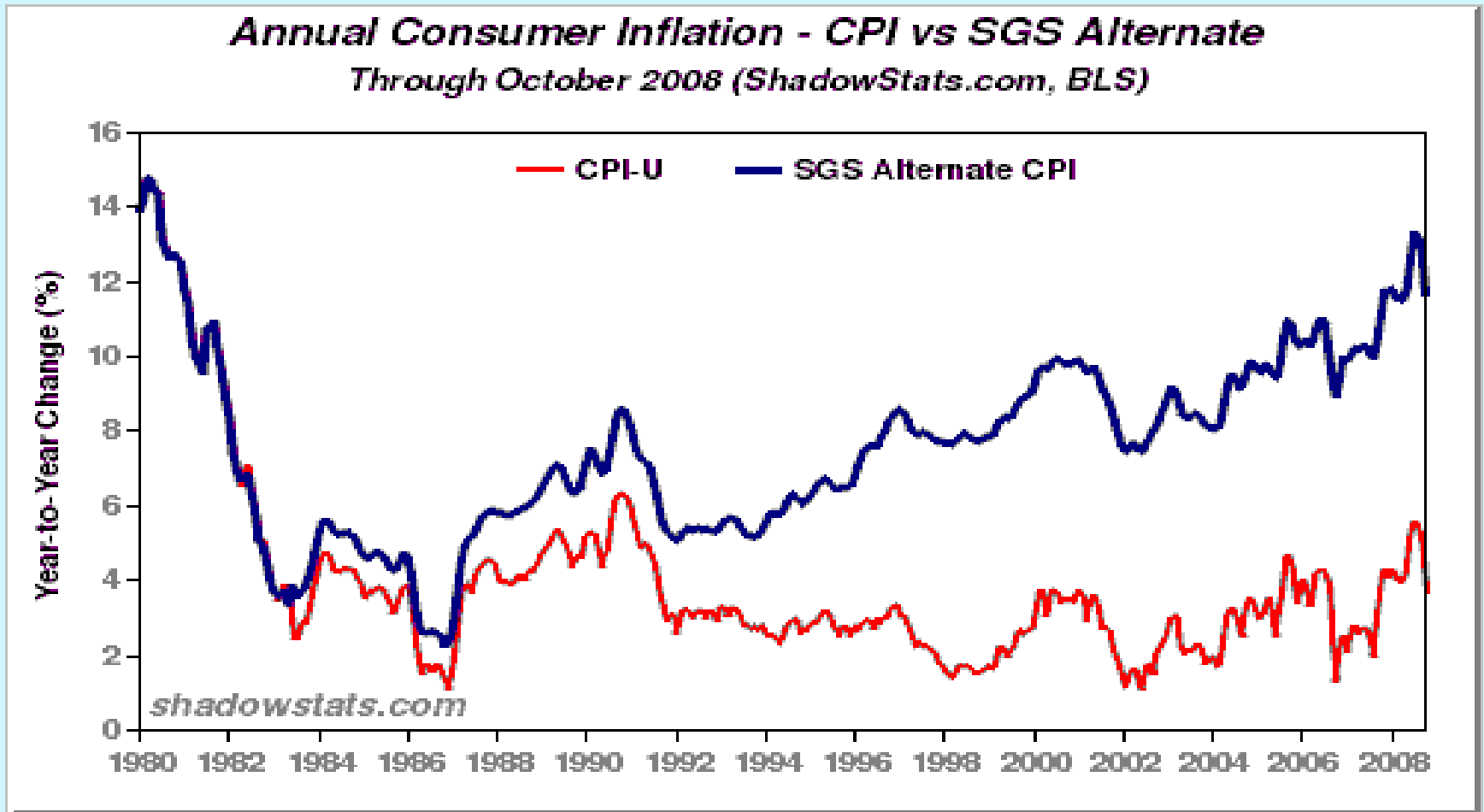


# Methodology Impacts: The Criticism

- According to Shadowstats, CPI inflation would be much higher if the BLS used older methods:
  - Using 1990 methods, the 12-month inflation rate would now be about 7 percent per year (not 3.7 percent)
  - Using 1980 methods, the inflation rate would now be almost 12 percent
- Shadowstats' John Williams claims to have “reverse engineered” the BLS changes



# SGS Alternate CPI



# Methodology Impacts: Quotes

There are obviously many many factors that are coming into play in today's credit crisis - but I can draw a direct line from the Boskin Commission (who IMO, falsely claimed CPI overstated Inflation by 1.1%) to the Greenspan 1% FOMC rate, to the residential mortgage backed derivatives, to the Bear Stearns collapse.

- *Barry Ritholtz*



# Methodology Impacts: Quotes

The current subprime credit crisis can be directly traced back to the BLS decision to exclude the price of housing from the CPI.

- *Robert Hardaway*



# Methodology Impacts: Quotes

Undermeasurement of inflation ... hangs over our head like a guillotine.

- *Kevin Phillips*



# Methodology Impacts: Our Response

- The geometric mean impact is only .28 percent annually
- The aggregate impact of new (1998 and later) hedonic models is near zero
- Currently, use of an asset-based method for homeownership would *reduce* the CPI
- The SGS estimates are implausible
  - They imply unrealistic changes in prices and real incomes



# Release of the MLR Article

- BLS highlighted the article on its website
  - A news advisory was issued September 4
  - A banner headline pointed to a Q&A feature
  - We alerted prominent bloggers
- The article was immediately picked up by blog sites such as the *Econbrowser*, *The Economist*, and *Business Week* sites
- September saw about 5,000 BLS website hits for our article, and 17,000 for the Q&A page





# Usefulness to BLS

Aside from changing minds, the article and Q&A have value in two ways:

- They serve as a detailed reference when BLS staff members respond to questions from the public
- They provide a readily-available summary of the BLS view when reporters or analysts address issues of CPI accuracy

