A Note on the Movement in Median FCSU Expenditures from 2006 to 2007[1]

Thesia I. Garner, **DPINR, OPLC, BLS**

June 24, 2009

As a follow-up to: "NAS-Based Poverty Thresholds Using CE Interview Data: An Examination of Trends," presented at the Brookings Institution by Thesia I. Garner on June 10, 2009

The National Academy of Sciences (NAS) Panel, in the 1995 Report, recommended that new poverty thresholds for the U.S. should be based on U.S. Consumer Expenditure Survey (CE) data. Specifically the thresholds would be based on a percentage of median expenditures for a set of basic commodities that included food, clothing, shelter, and utilities (FCSU). Median expenditures were to be based on the distribution of the sum of FCSU expenditures by reference families. A multiplier would be applied to this percentage of the median to account for other basic needs not in FCSU.

Over the past several years, median FCSU expenditures have been increasing, tracking changes in total expenditures, and for the most part, changes in before tax money income. From 2003 to 2004, FCSU median expenditures increased 1.8%, from 2004 to 2005 by 3.2%, from 2005 to 2006 by 5.1%, and from 2006 to 2007 by 7.7%. Before tax money income increased 9.6% from 2006 to 2007. At first glance, the increase in the threshold compared to the increase in income seems to be in line. However, changes in the CE Interview instrument were introduced in 2007 quarter two that impact the levels and trends in FCSU medians. An analysis of the impact of these changes is the subject of this Note. Throughout this discussion I refer to the table and chart attached. Since the thresholds are a percentile of the medians, results are presented for medians only and not thresholds.

2007 Improvements in the CE Interview

Food Away from Home

- Prior to 2007Q2
  - The CE Interview survey collected the usual *monthly* expenditures for food away from home.
  - Cognitive testing indicated that, as a result of changes in spending patterns by American consumers, collecting the usual weekly amount results in more accurate data.
- Beginning with 2007Q2

[1] These results were produced by Thesia I. Garner, Research Economist, Division of Price and Index Number Research, Bureau of Labor Statistics for research purposes only using the Consumer Expenditures Interview Survey; data are from collection periods 20017Q2-2008Q1. These results are released to inform interested parties of ongoing research and to encourage discussion of work in progress. Decisions related to statistical, methodological, technical, and operational issues were made by the author and do not necessarily reflect official positions or policies of the U.S. Bureau of Labor Statistics.

  - The questionnaire was revised to collect usual *weekly* expenditures for food away from home.
  - The Interview data for food away for 2007 was more comparable with the Diary data for 2007 as compared to past years.

Mortgage Edits

- Prior to 2007Q2
  - Before 2006, Field Representatives (FRs) could not report a mortgage as an "interest only" mortgage.
  - In 2006, FRs were given the ability to report a mortgage as "interest only", but the information was not used in processing, therefore the mortgage payment for an "interest only" mortgage was applied partially to mortgage principal and partially to mortgage interest.
- Beginning with 2007Q2
  - The questionnaire was revised to better collect interest only mortgages.
  - Mortgage edit processing began utilizing the "interest only" designation, resulting in the application of the appropriate amount of an "interest only" payment to mortgage interest.

Methods and Analysis

For each threshold year, from 2003 to 2007, quarterly CE Interview data were used to produce median FCSU expenditures for this study. Quarterly Interview expenditure data were updated using the annual all items U.S. City average CPIs to the threshold year. For example, for threshold year 2007, data from 2005 quarter two through 2008 quarter one were used to produce the 2007 FCSU median. In order to examine the underlying trends in FCSU expenditures, an approximation of the FCSU median was estimated using the range of FCSU expenditures in the 47th to 53rd percentiles of the FCSU expenditure distribution. I refer to the median as the "average median" or the "median percentile range." Expenditures are defined not to include mortgage principal payments. All results are for Census reference families only.

Within the 47th to 53rd FCSU percentile range of expenditures, average expenditures for select components were produced. "Food away from home" and "mortgage interest payments" are of particular interest. Within the median percentile range, food away from home expenditures increased 22.6% with the question wording change. This is in contrast to an increase of 6.7% from 2005 to 2006 and 2.5% from 2003 to 2004. Mortgage interest payments increased by 11.7% with the mortgage edit change; this is in contrast to a 1.8% increase from 2005 to 2006 and 1.1% from 2003 to 2004.

In order to see what the impact would be without the CE improvements notes above, five different medians are produced following specific assumptions. The exercise is only conducted from 2007 using information from 2005 and 2006.

"Created" Medians

1. The first “created” 2007 median expenditures equal the 2006 median times the movement in the median from 2005 to 2006: 5.3%. This reduced FCSU “created” median expenditures by $543 for 2007 reference families FCSU expenditures in the 47th to 53rd percentile range.

2. The second “created” 2007 median equals the 2006 median times the change in the all items CPI U.S. City average: 2.48%. This reduced FCSU “created” median expenditures by $1,176 for 2007 reference families FCSU expenditures in the 47th to 53rd percentile range.

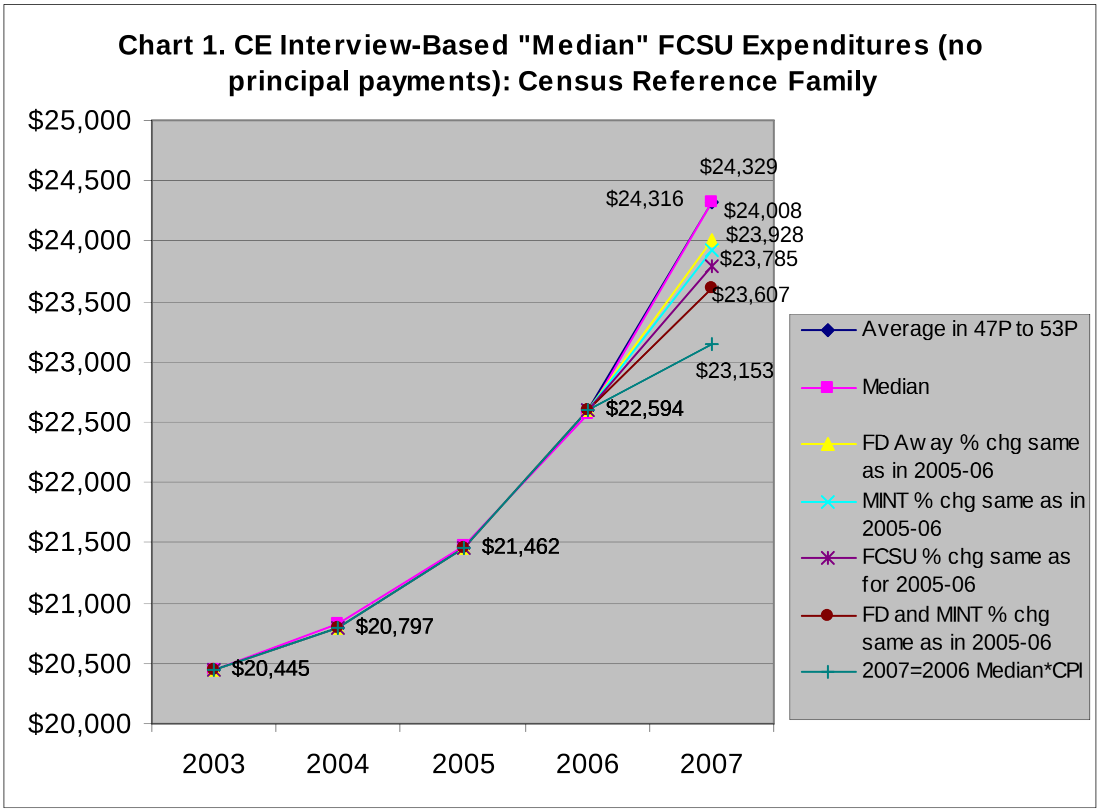
For the other three “created” medians, the distribution of 2007 FCSU expenditures stays the same relative to the median; only the median changes as expenditures on food away from home and mortgage interest payments change with the different assumptions. This distribution is assumed to hold regardless of the artificial changes that I make in the food away from home expenditures and mortgage interest payments. For each threshold year, I produce the average of food away from home and mortgage interest payments for reference families within the 47th to 53rd percentile range of FCSU expenditures. Next I subtract from FCSU average median expenditures the average expenditures for the food away from home or mortgage interest payments. Then I add average expenditures using a particular assumption. The three additional assumptions are listed below.

3. For 2007, food away from home expenditures changes by the same rate as they did from 2005 to 2006: 6.7%. This reduced food away from home from $457 to $136 for 2007 reference families with average median FCSU expenditures in the 47th to 53rd percentile range. By construction, FCSU “created” median expenditures fall by the same amount.

4. For 2007, mortgage interest payments changed by the same rate as they did from 2005 to 2006: 1.8%. This reduced mortgage interest payments from $473 to $$72 for 2007 reference families with average median FCSU expenditures in the 47th to 53rd percentile range. By construction, FCSU “created” median expenditures fall by the same amount.

5. For 2007, food away from home expenditures and mortgage interest payments change by the same percentages as they did from 2005 to 2006: 6.7% and 1.8%. These changes reduced FCSU average median expenditures by $722 in the 47th to 53rd percentile range. By construction, FCSU “created” median expenditures fall by the same amount.

Chart 1includes median, average median, and “created median FCSU expenditures.



The values presented in this Chart 1 ere produced by Thesia I. Garner, Research Economist, Division of Price and Index Number Research, Bureau of Labor Statistics for research purposes only using the Consumer Expenditures Interview Survey; data are from collection periods 2001Q2-2008Q1.