


# The Role of Housing in Poverty Thresholds: 1993-2003



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# Key in Development of a Poverty Measure



- Determine threshold
  - Calculate resources
- ❖ Goal: Consistently measure thresholds and resources

# National Academy of Sciences Recommendations (1995)



⌘ 2.1-2.4 A poverty threshold with which to initiate a new series of official U.S. poverty statistics should be derived from Consumer Expenditure Survey [CE] data for a reference family of four persons (two adults and two children).

- ☒ Basic bundle
- ☒ Percentage of median expenditures
- ☒ Multiplier for other needs
- ☒ Updating
- ☒ Real growth in consumption

⌘ 3.1 Adjustments

*The NAS recommended a Procedure.*

# This paper...

## builds on NAS Workshop 2004



### ⌘ Threshold

- ☒ Concept and measure
- ☒ Definitions
- ☒ Adjustments

### ⌘ Data

### ⌘ Results

- ☒ Time series: 1993-2003
- ☒ Relationship to other economic data
- ☒ Price adjustment and number of years of data for estimation

### ⌘ Conclusions

# Concept Underlying Threshold?



⌘ Input (e.g., housing)

⌘ Costs of inputs (dollars)

# Costs Measures Used to Define Thresholds

## ⌘ Spending

- ☑ Official poverty threshold
- ☑ NAS threshold, basically

## ⌘ Consumption

- ☑ What people think about
- ☑ For housing in particular, spending does not equal consumption (e.g., subsidized housing, owned housing)
  - ☒ Treat the shelter consumption needs of owners and renters consistently – services valued as rent

Costs of inputs

# Thresholds Defined in Terms of...

## **Food, Clothing, Shelter, Utilities, Medicare Care FCSUM**

*using U.S. Consumer Expenditure Survey data*

### ⌘ Spending

☑ Out-of-pocket (OOP) expenditures: [FCSUM-OOP](#)

### ⌘ Spending and Consumption

☑ Expenditures adjusted for select consumption/needs (e.g., housing): [FCSUM-R](#)

# FCSUM-OOP (Out-of-Pocket Spending) Threshold

## ⌘ Out-of-pocket spending on

- ☒ Food
- ☒ Clothing
- ☒ Utilities (includes telephone)
- ☒ Medical care
- ☒ For renters, shelter expenditures

## ⌘ For *homeowners*, non-vacation shelter expenditures that include

- ☒ *Principal repayments*
- ☒ Mortgage interest payments
- ☒ Prepayment penalties
- ☒ Property taxes
- ☒ Maintenance, repairs, insurance and other related expenditures



# FCSUM-R (Shelter Consumption) Threshold

## ⌘ Out-of-pocket spending

- ☑ Food
- ☑ Clothing
- ☑ Utilities (includes telephone)
- ☑ Medical care
- ☑ Rent of renters

## ⌘ Value of consumption

- ☑ Food as pay
- ☑ Rent as pay
- ☑ Rental equivalence of owners

## ⌘ Expected spending

- ☑ Adjustment for the medically uninsured using CE data

# Caution....



- ⌘ For a consumption based threshold, would also need
  - ☒ Rent controlled or government subsidized housing
  - ☒ School breakfast, school lunch, WIC, energy assistance
  - ☒ Medical consumption not financed out-of-pocket
  - ☒ Goods and services received as gifts (“net” value of gifts)
- **And** implicit values of these would be added to resources for consistency

# Computing the Thresholds



- ⌘ Use three years of quarterly CE data (update to most recent year using CPI-U All Items)
- ⌘ Determine median expenditures for bundle for reference “family” (2 adults with 2 children)
- ⌘ Apply three-parameter equivalence scale to food, clothing, shelter, and utilities part and medical spending equivalence scales to medical part
- ⌘ Update over time using change in median expenditures of bundle

# Equations for Thresholds

$$(1 - s_{\text{medical}}) \frac{(1.15 * P_L * M) + (1.25 * P_H * M)}{2} +$$

$$(s_{\text{medical}}) \frac{(P_L * M) + (P_H * M)}{2}$$

➤ Used the midpoints of the percentages and multipliers

# Three-Parameter Equivalence Scale Applied to $(1 - S_{medical})$ Part

## ☒ **one and two adults**

$$[\text{adults}]^{0.7}$$

## ☒ **single parents**

$$[\text{adults} + 0.8 * 1\text{st child} + (0.5 * \text{other children})]^{0.7}$$

## ☒ **all other families**

$$[\text{adults} + 0.5 * \text{children}]^{0.7}$$

# Medical Expenditure Equivalence Scale



⌘ Number of family members

⌘ Ages of family members

☑ < 65 years of age

☑ ≥ 65 years of age

⌘ Health insurance status of family members

☑ No insurance

☑ One private policy

☑ One person covered by public insurance and no private coverage

# Data

⌘ U.S. Consumer Expenditure Interview Survey

⌘ Amount of data/time period

☒ 3 years of data

☒ Threshold year minus one (t-1)

☒ e.g., for 1993 threshold,  $t=1993$  so last year of data used in calculation of threshold would be primarily for 1992

☒ 1993 Threshold

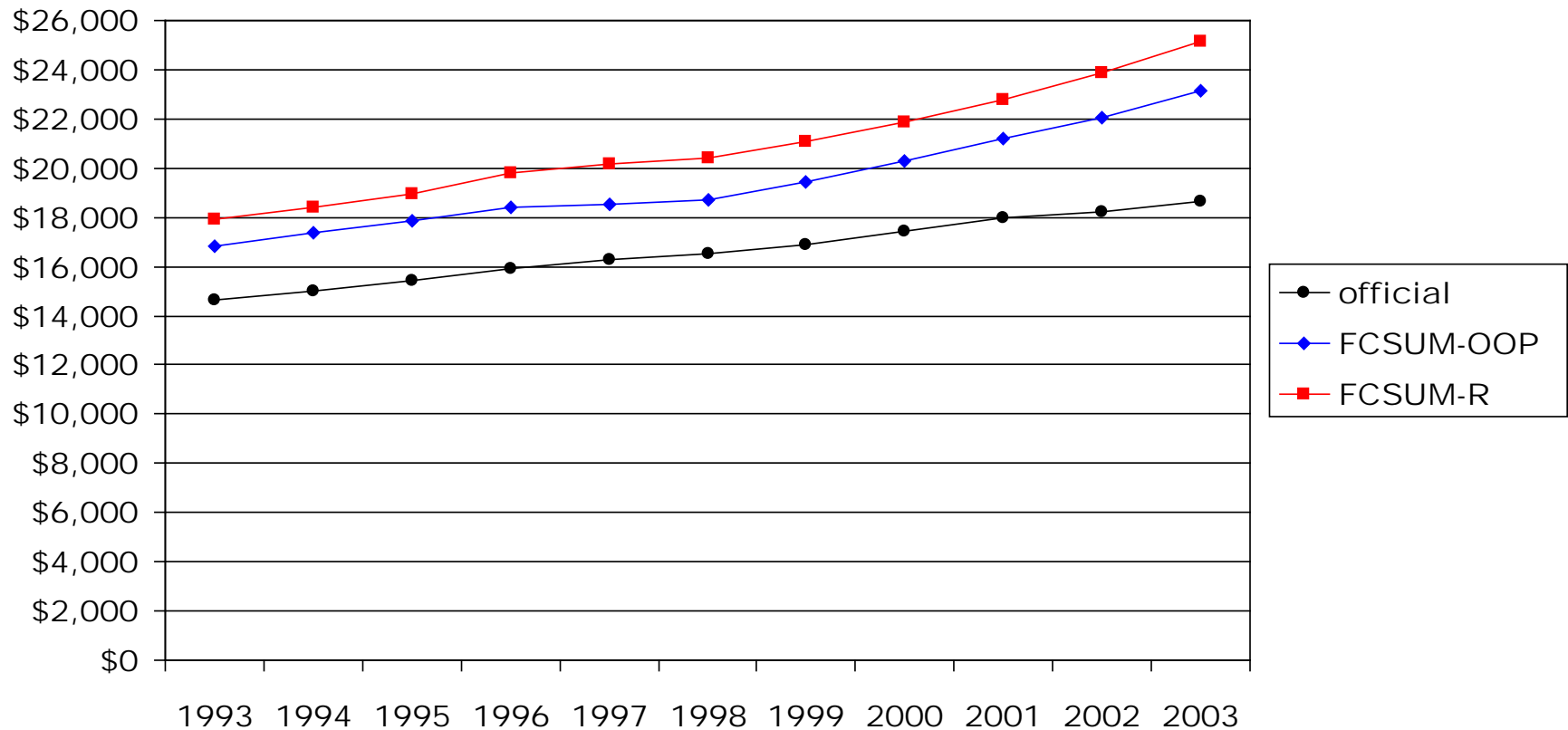
- Collection quarters: 1990 Q2 – 1993 Q1

☒ 2003 Threshold

- Collection quarters: 2000 Q2 - 2003 Q1

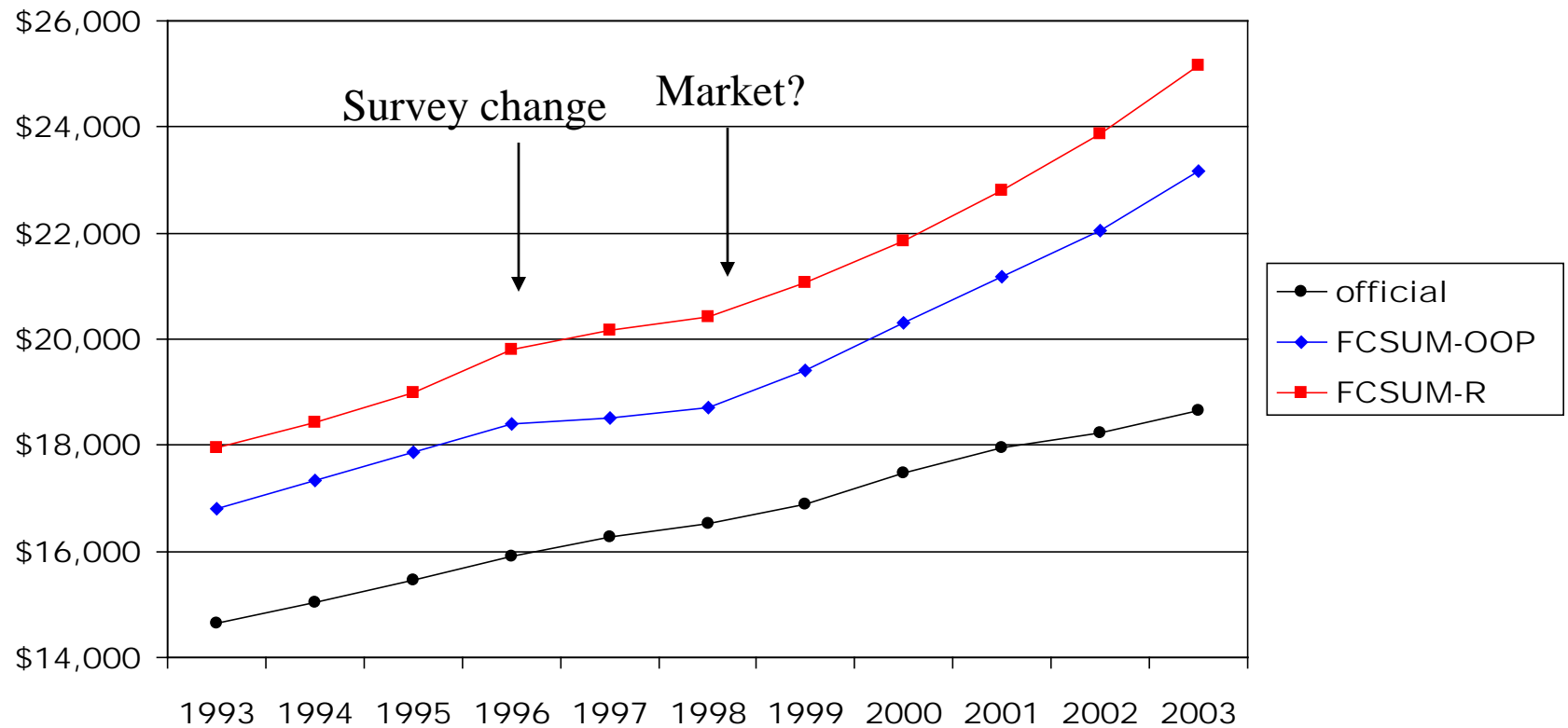
⌘ Assume quarters are independent

# Experimental Thresholds

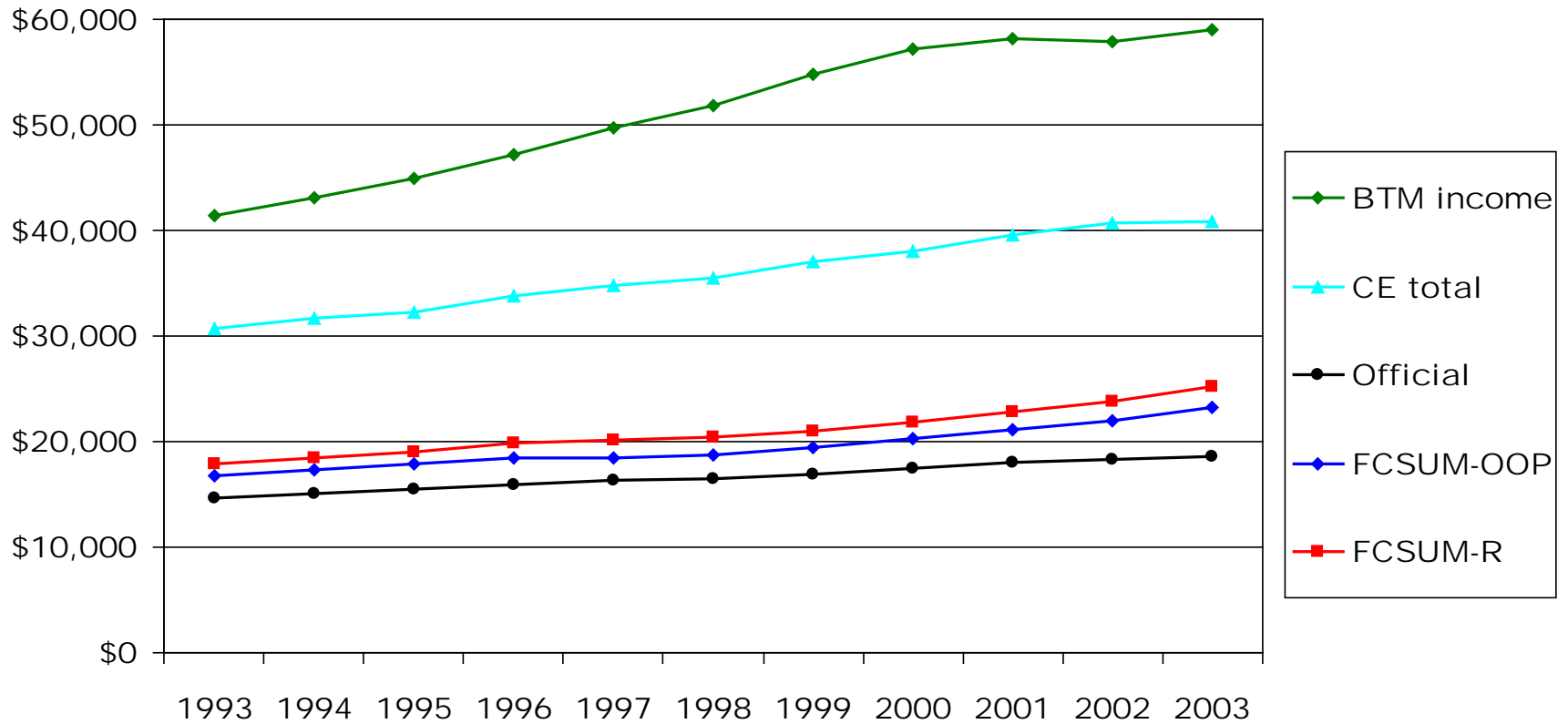




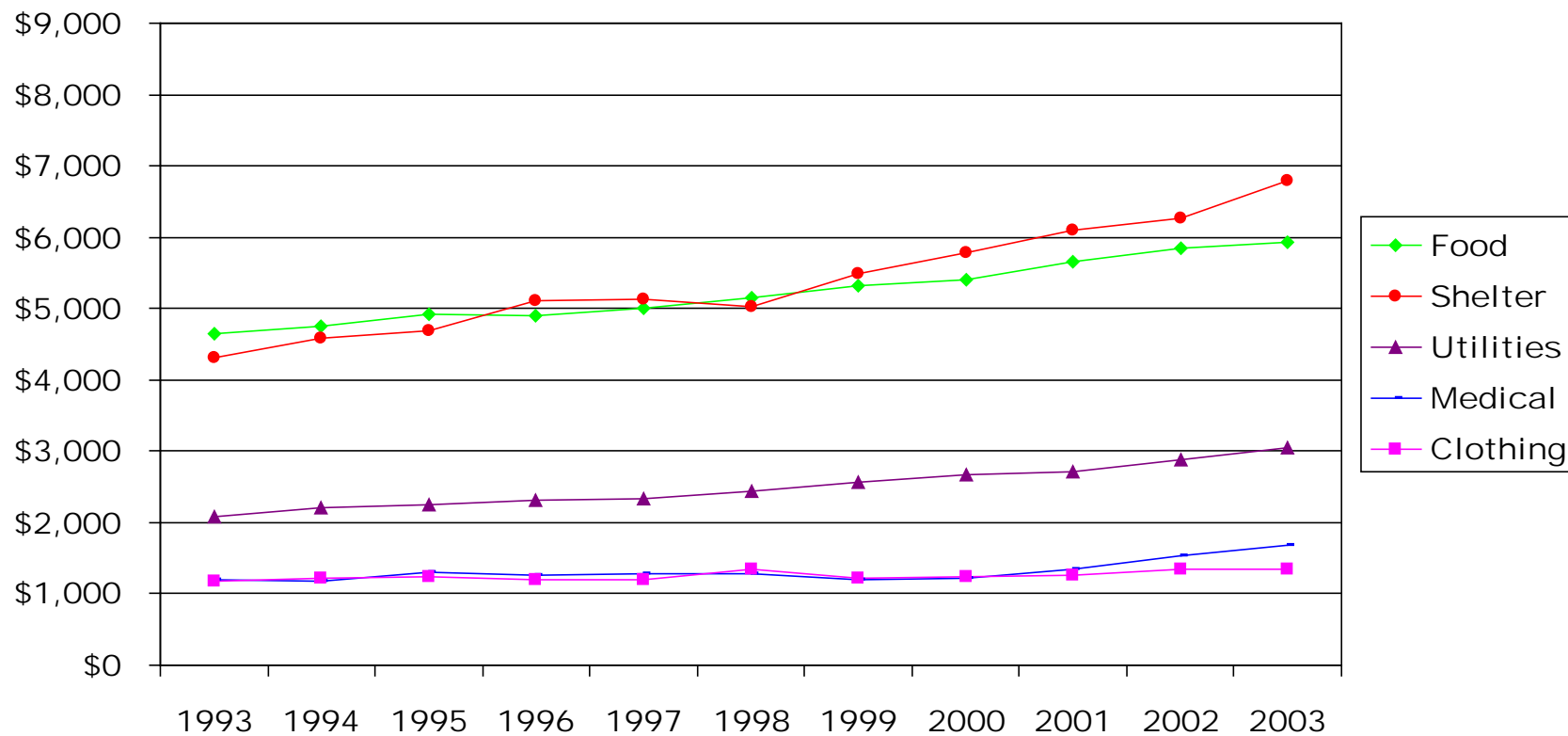
# Experimental Thresholds



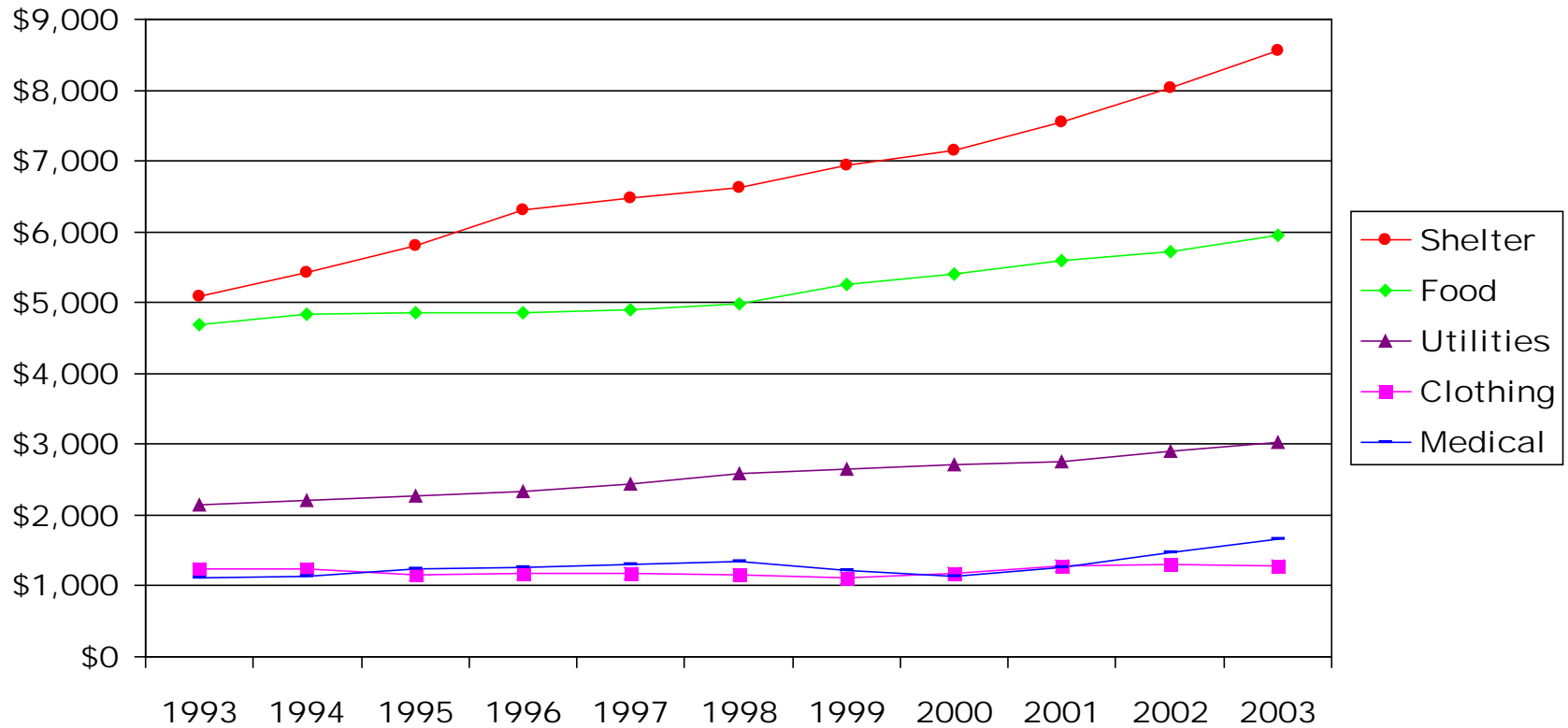
# Average Annual CPS Household income, CE Expenditures, and Thresholds



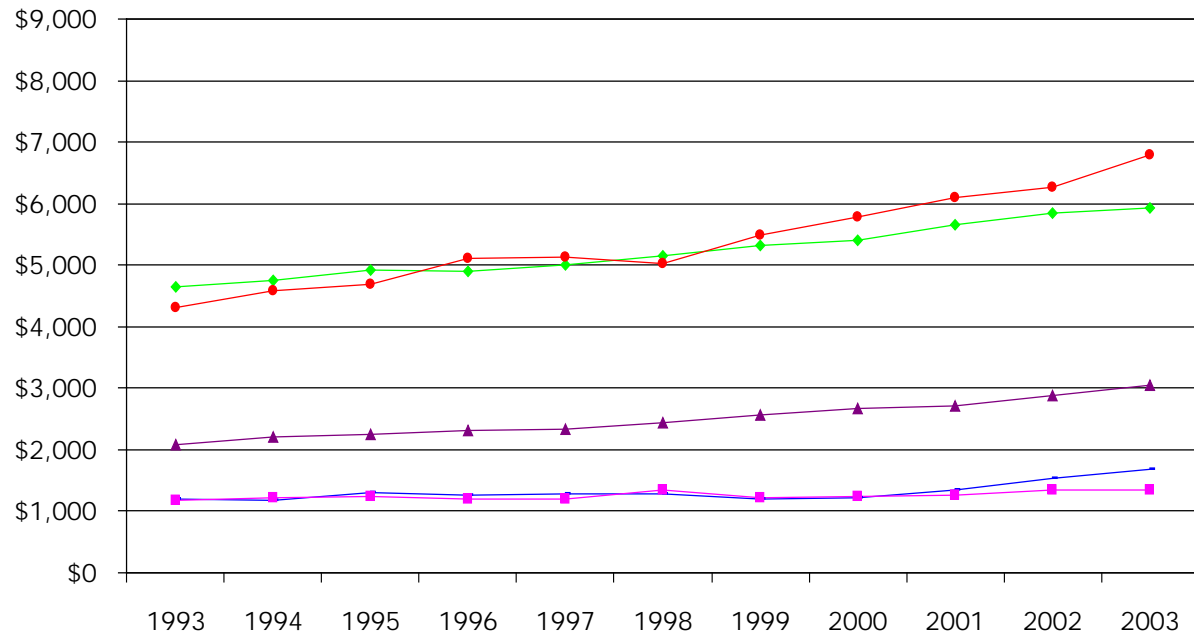
# Reference Family Annualized Spending in the 30<sup>th</sup>-35<sup>th</sup> Percentile for FCSUM-OOP



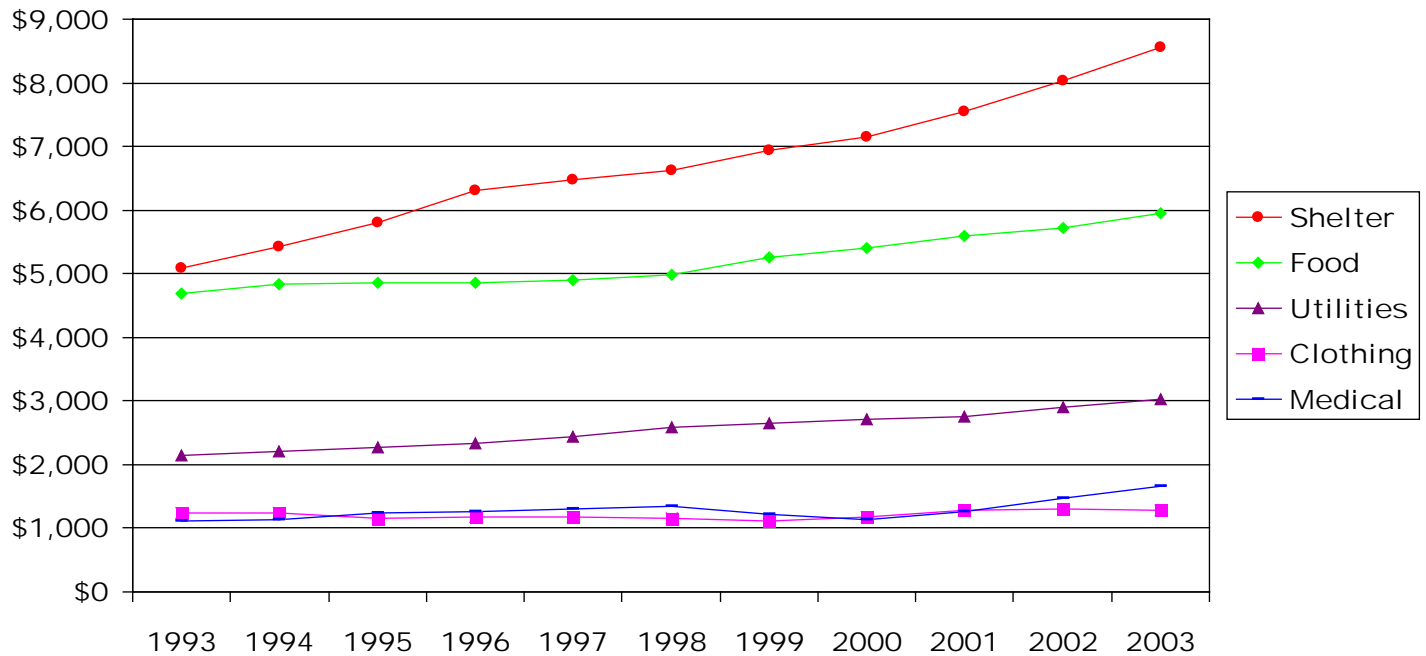
# Reference Family Annualized Spending/Owner Consumption in the 30<sup>th</sup>-35<sup>th</sup> Percentile for FCSUM-R



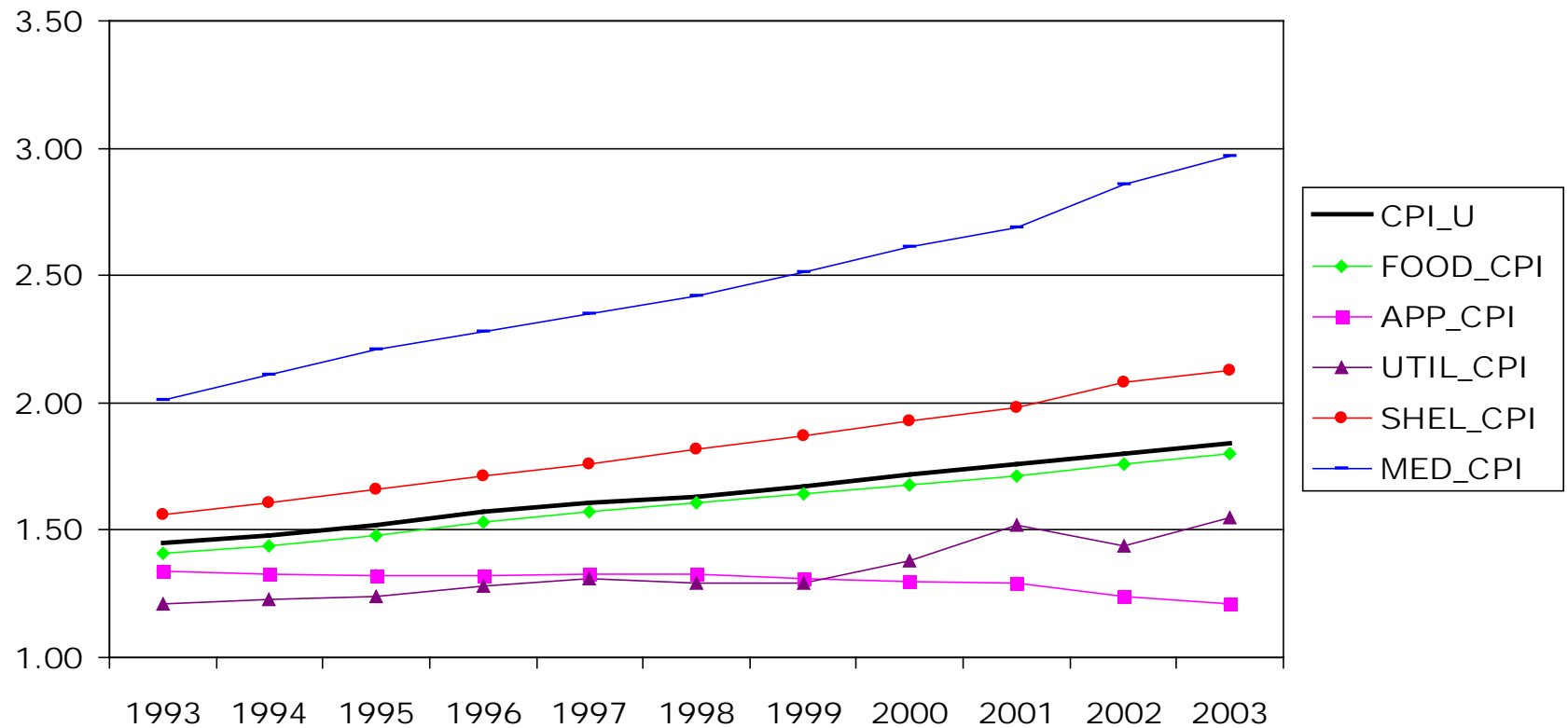
# FCSUM -OOP



# FCSUM -R

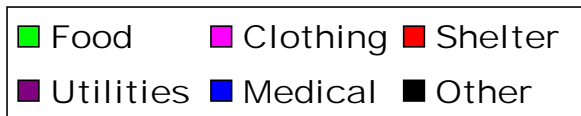
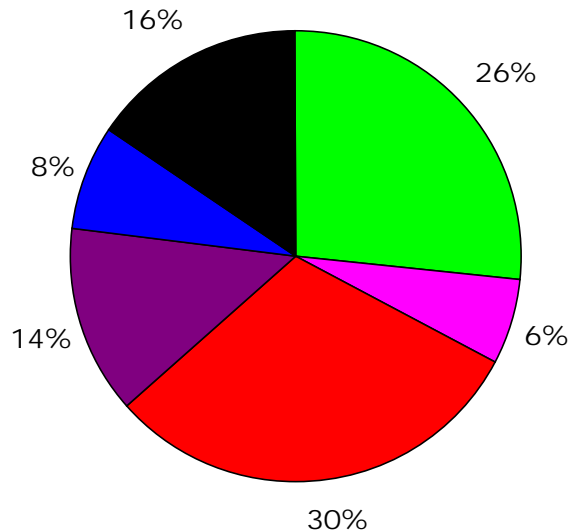


# CPI-U for All Items and Selected Categories

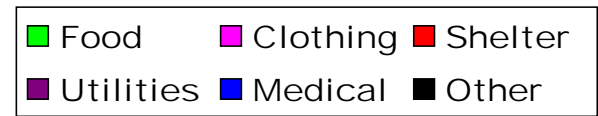
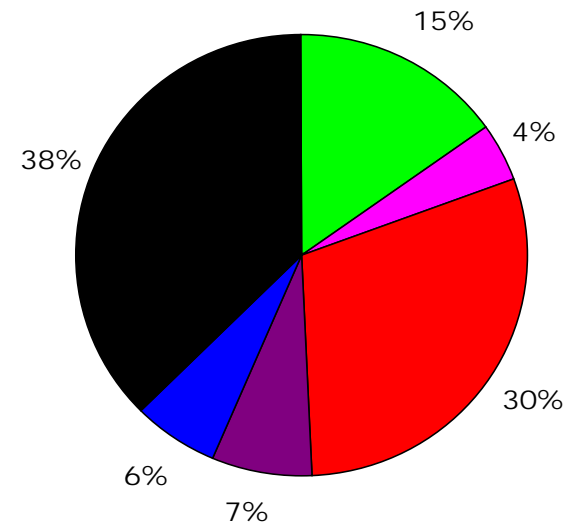


# Threshold Shares and CPI-U Relative Importances: 2003

FCSUM-OOP Threshold

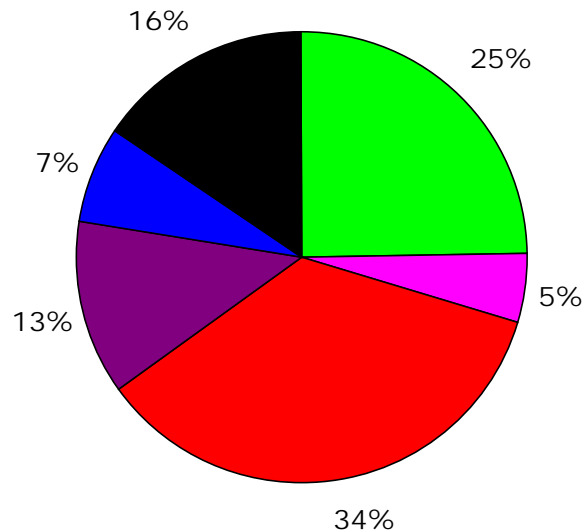


CPI-U

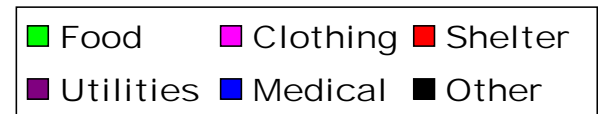
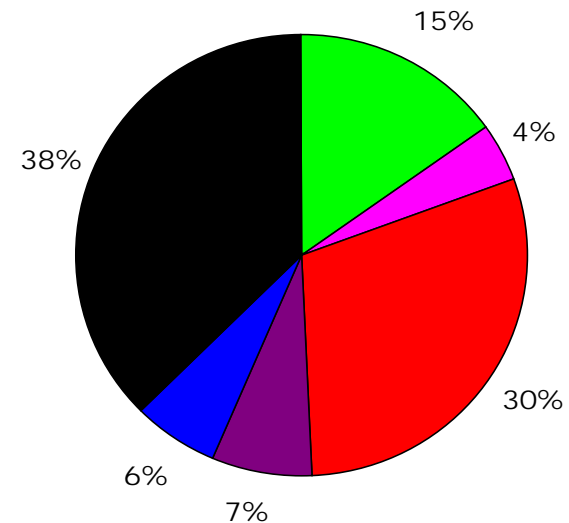


# Threshold Shares and CPI-U Relative Importances: 2003

FCSUM-R Threshold



CPI-U





# Price Adjustment and Years of Data



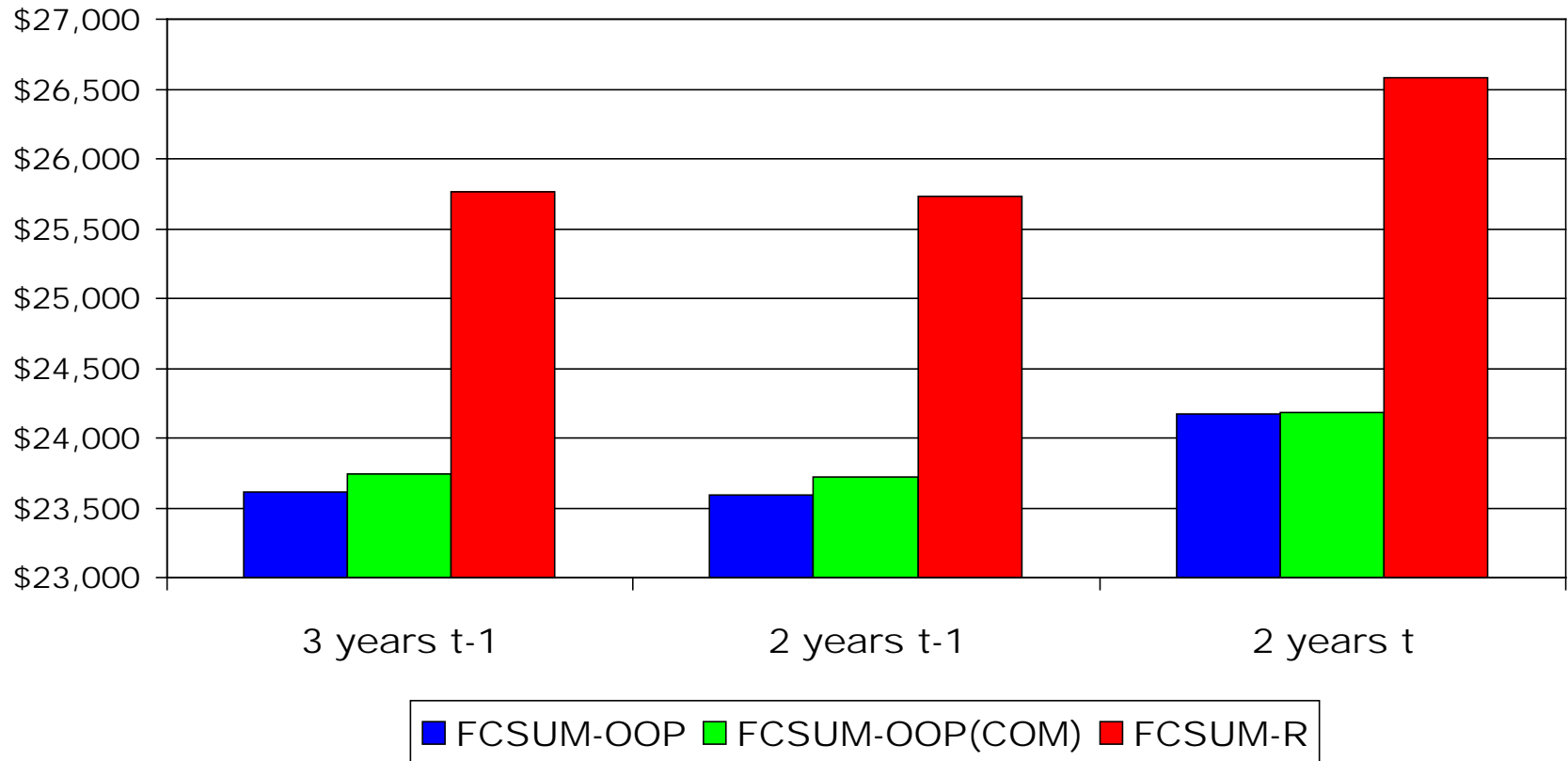
## ⌘ Which CPI-U?

- ☑ CPI-U All Items to update sum of FCSUM
- ☑ CPI-U for each item (i.e., food, clothing, shelter, utilities, medical care)

## ⌘ Which years of data?

- ☑ 3 years,  $t-1$
- ☑ 2 years,  $t-1$
- ☑ 2 years,  $t$

# Price Adjustment and Years of Data: Threshold 2004



Reference Families n=8,280

n=5,576

n=5,410

# Conclusions

- ⌘ Thresholds that account for
  - ⌘ Medical care expenditures
  - ⌘ Shelter consumption
- ⌘ Trends
  
- ⌘ Updates to reflect
  - ⌘ Whose experience?
    - ⊗ “Average” urban consumer
    - ⊗ Reference family
  - ⌘ Which goods and services?
  - ⌘ Time period
  
- ⌘ More research
  - ⌘ Equivalence scales
  - ⌘ Data collection
    - ⊗ Medical care
    - ⊗ Consumption-based measures

# Contact



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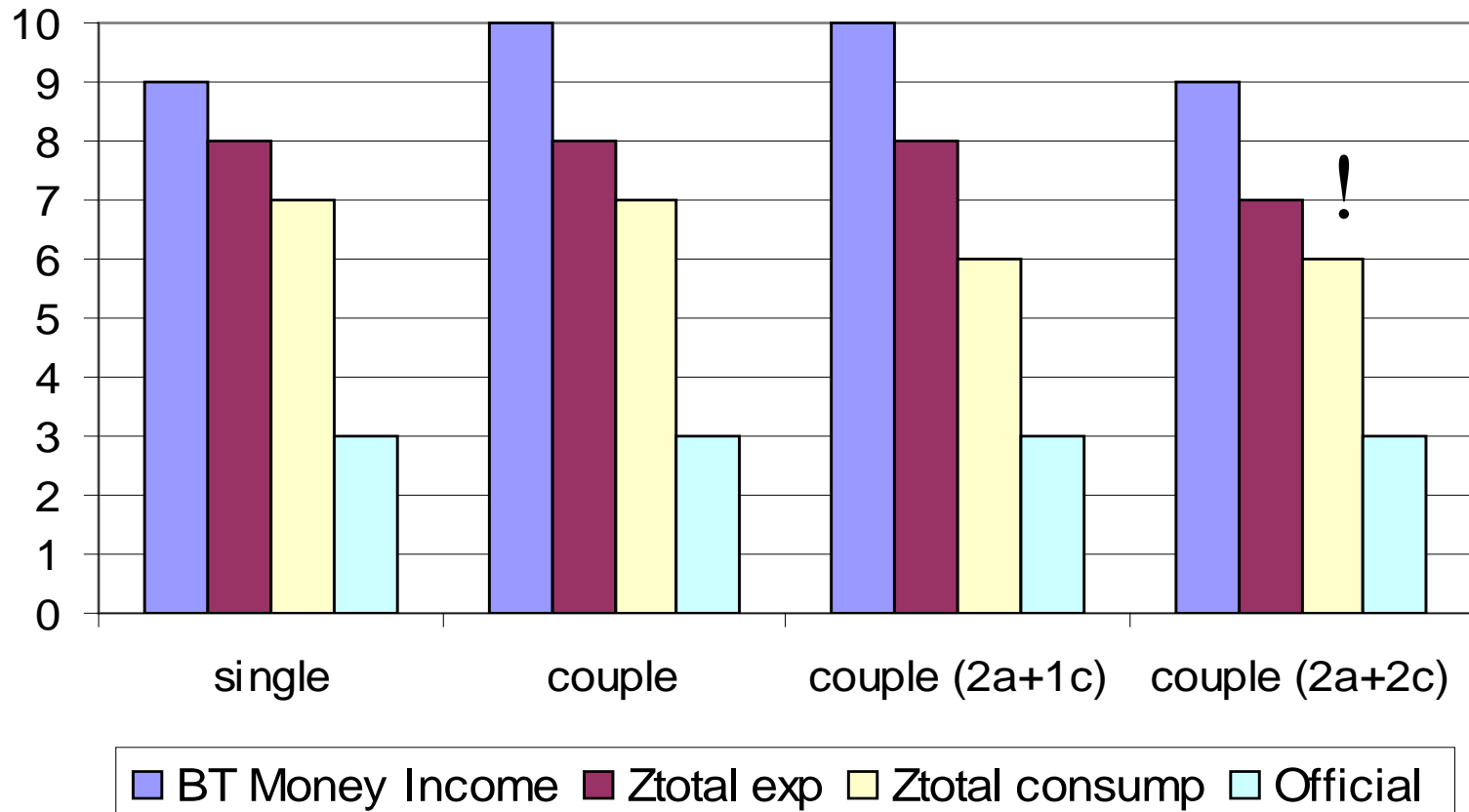
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## Food Shares as a Percentage of Total Using 2003 CE Data



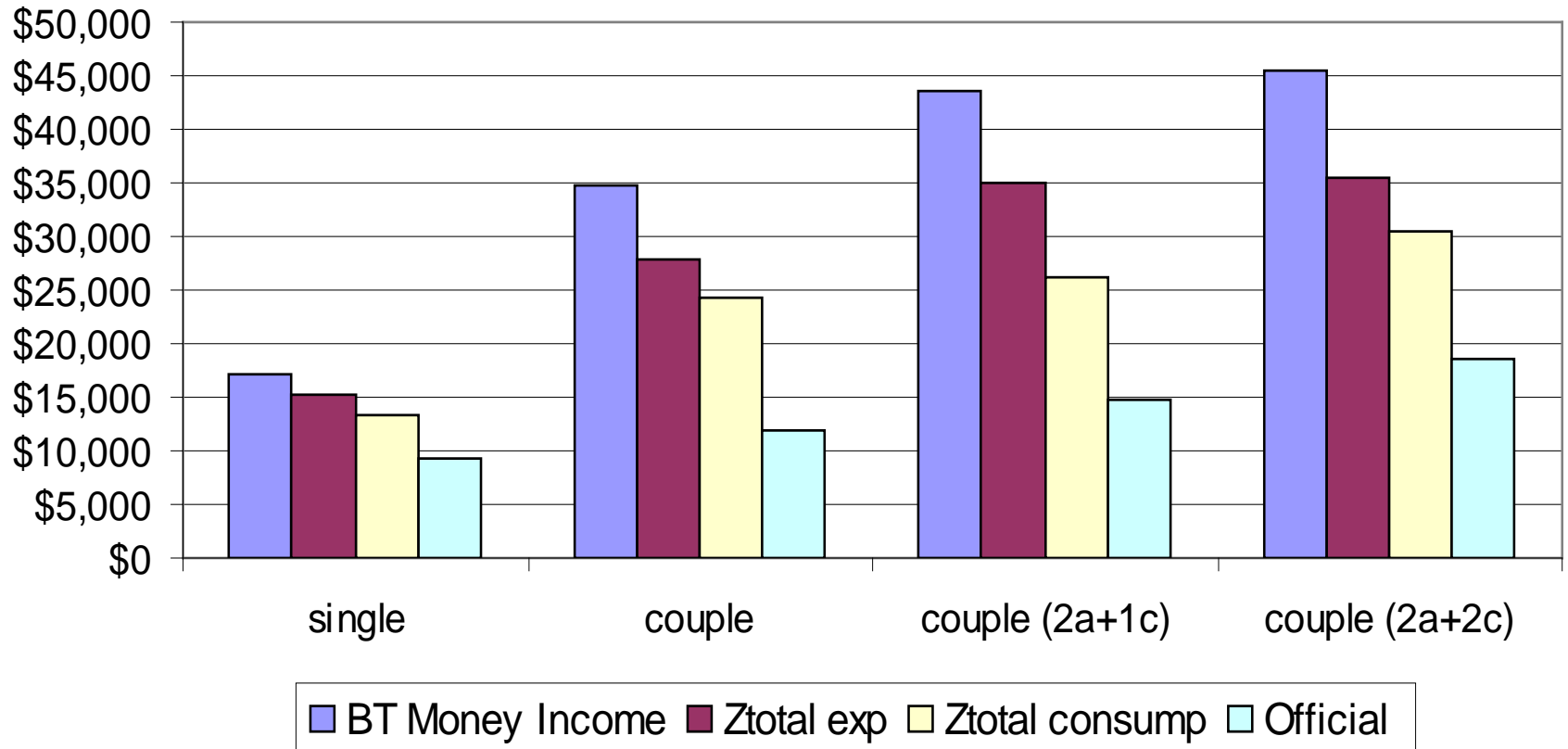
Source: CE data 2003 Q1-2004Q1

## Food Share Multipliers Using 2003 CE Data



Source: CE data 2003 Q1-2004Q1

# Poverty Thresholds Based on Food Share and Thrifty Food Plan for 2003



Source: CE data 2003 Q1-2004Q1