# Implications of a “Healthier” U.S. Food Stamp Program

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# “Proposed Modifications to the Food Stamp Program: Likely Effects and their Policy Implications”

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# Outline

- Rising U.S. obesity – trends and linkages
- The U.S. Food Stamp Program (FSP)
- Proposed changes to the FSP
- Likely responses of consumers
- Potential market adjustments
- Likely nutrition consequences
- Conclusion: implications for the FSP

# Main Points

- Restriction of food stamps to only healthy foods may have unintended consequences
  - If constraint is not binding (because “healthy” food expenditure exceeds food stamp value) no effect
  - If constraint is binding . . . .
    - Reduced participation by some eligible households
    - Reduced consumption of “unhealthy” foods by some FSP households => induced price changes and increased consumption of “unhealthy” foods by non-participants
- Targets and instruments
  - Use food stamps to provide food for the poor
  - Use other policies to encourage a healthy diet

# Obesity in the United States

- Prevalence of overweight & obesity is high and rising
  - Children and adolescents – 5 % in 1976, 16 % in 2000
  - 66 % of all Americans in 2003-04 overweight (BMI > 25)
  - 33 % of all Americans in 2003-04 obese (BMI > 30)
  - Obesity rate doubled since 1971
- $78.5 billion in medical spending in 1998 attributable to overweight & obesity
- Obese or overweight individuals tend to be poor
  - Confounded with other demographic factors?
  - Link between obesity and poverty weakening?
  - Children from low-income households more likely to be overweight
  - Severity of overweight greater for low-income children

# The Food Stamp Program

- Established in 1930s to
  - Stimulate consumption of surplus farm commodities
  - Provide additional calories to the food poor
- Eligible households: income < 130% of poverty line
- 50 % of eligible individuals have participated
- 26 million participants (from ~11 m. households) in 2005
  - 50 % children under 17, 17 % elderly, 23 % disabled non-elderly
  - 46 % in households headed by white adults
- FSP spent $31 billion in 2005
  - $ 93 per participant per month
  - $200 per participating household per month
  - $300 per household per month for families with children

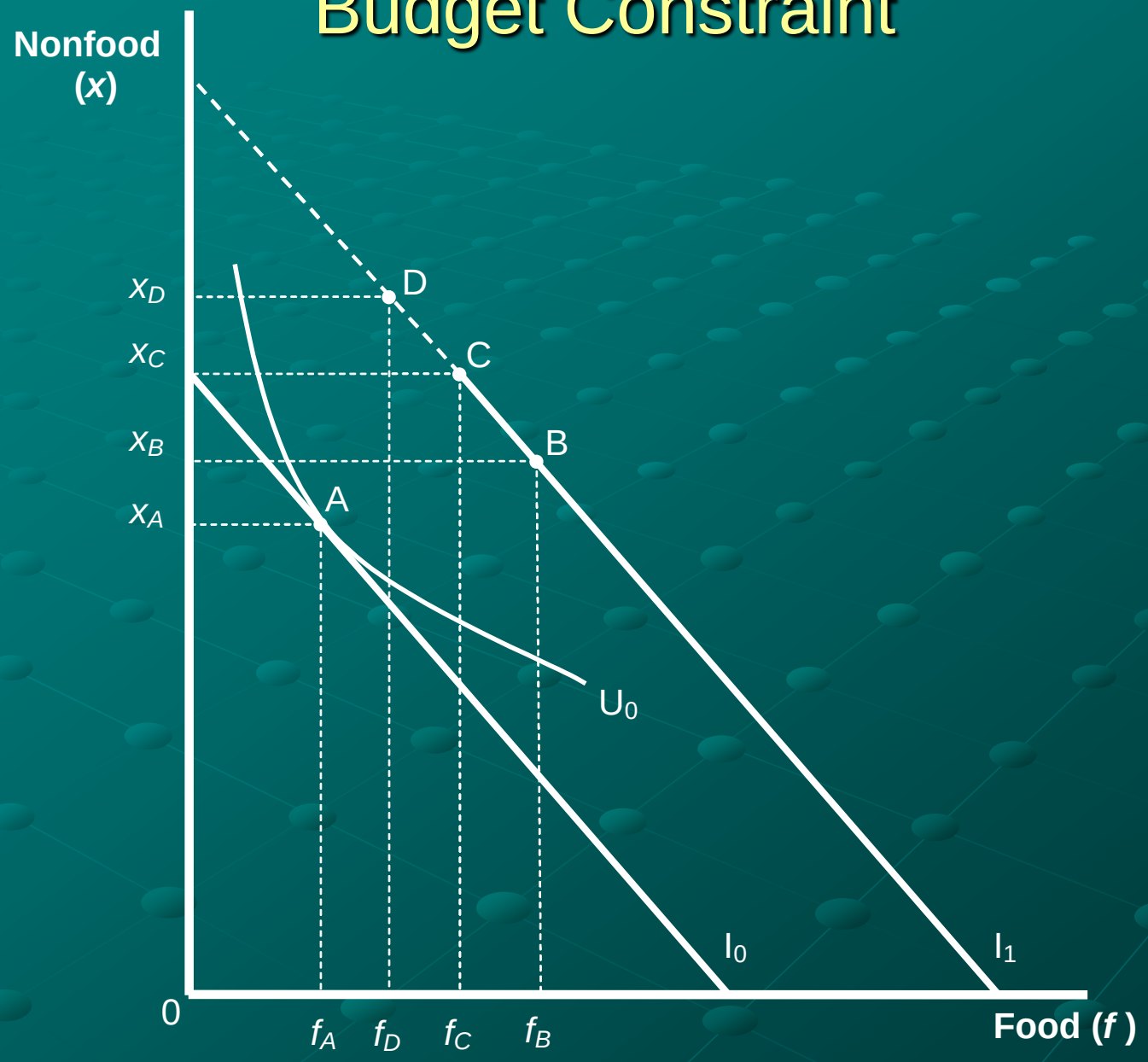
# Average Income, Benefits, and Household Size for FSP Participants, 2005

| Participant Group | Monthly Income | Monthly FSP Benefit | Household Size |
|---|---|---|---|
| | *$/household* | | *persons* |
| Total Participant Population | 648 | 209 | 2.3 |
| Households with Children | 768 | 300 | 3.3 |
| Elderly Individuals | 690 | 87 | 1.3 |
| Disabled Non-elderly Individuals | 802 | 145 | 2.0 |
| Other Households | 205 | 146 | 1.1 |

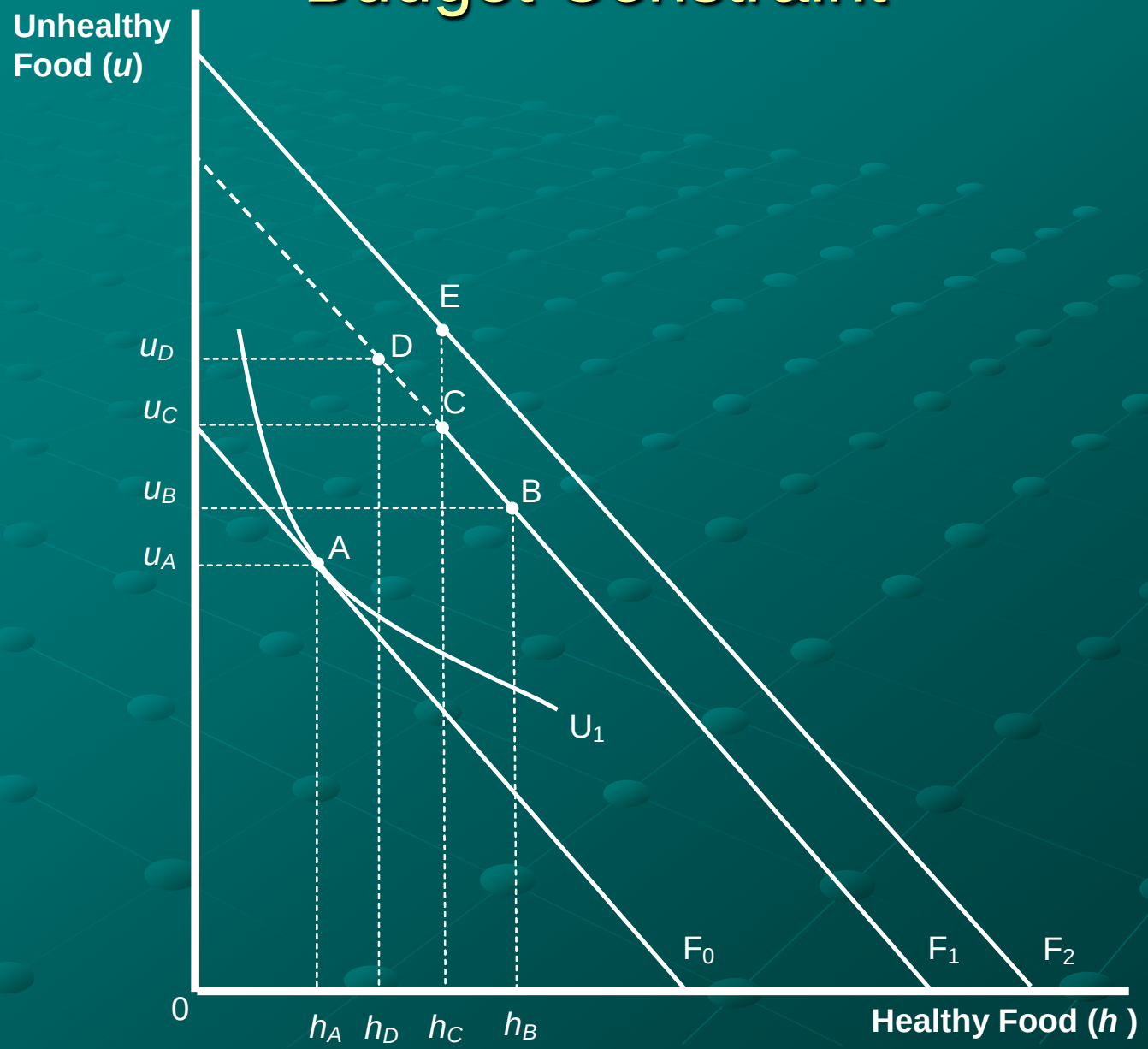
# Proposed Modifications to FSP

- Eliminate
  - White bread, cookies, cakes, muffins
  - Cream, cream cheese, whole milk, cheese
  - Fruit juice drinks, soft drinks, punch, sport drinks
  - Most mixed prepared foods (pizza, frozen dinners)
  - Savory snacks, sweet snacks
  - Breaded and fried fish
  - Fattier cuts of meat
- Keep
  - Wholegrain bread, pasta, hot and cold cereals
  - Milk < 2% fat, cottage cheese, yogurts
  - All forms of fruit and veg., 100% fruit and veg. juice
  - Mixed prepared foods meeting dietary guidelines
  - All beans and legumes, peanut butter
  - Fresh, frozen, canned fish
  - Low fat cuts of meat, eggs

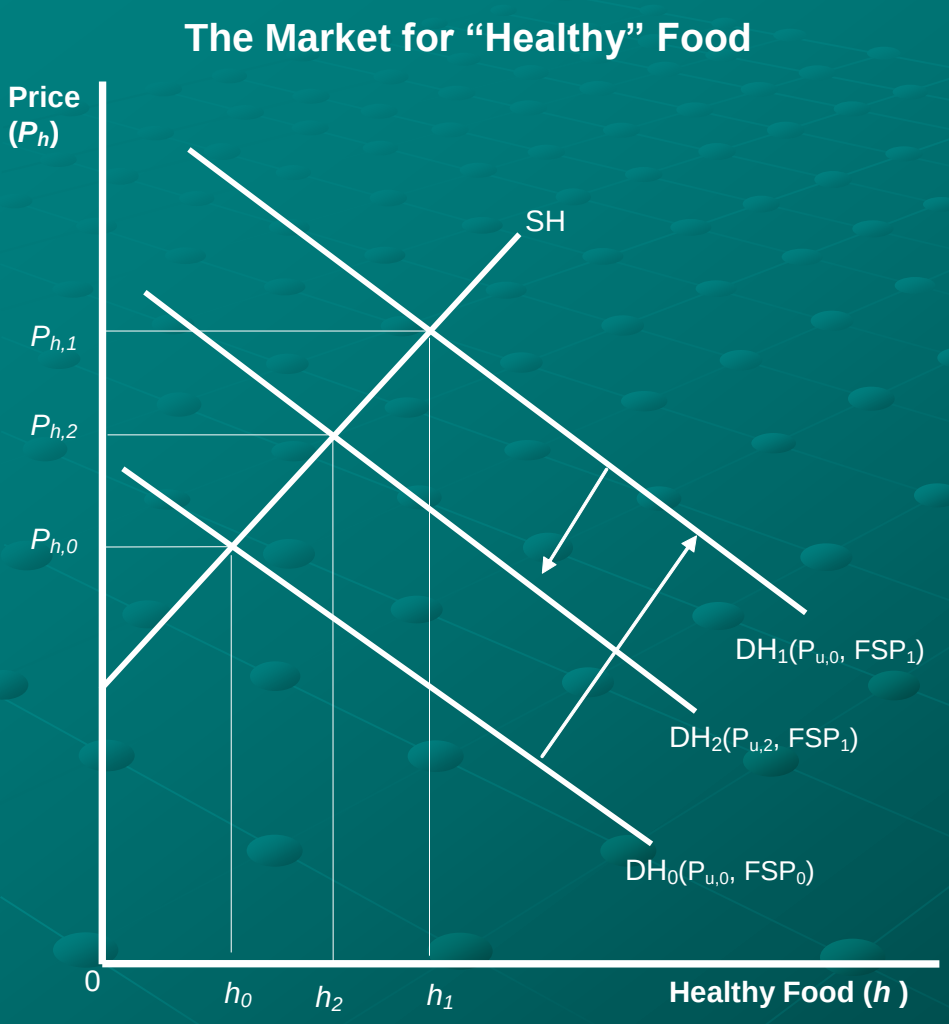
# Food Stamps and the Budget Constraint

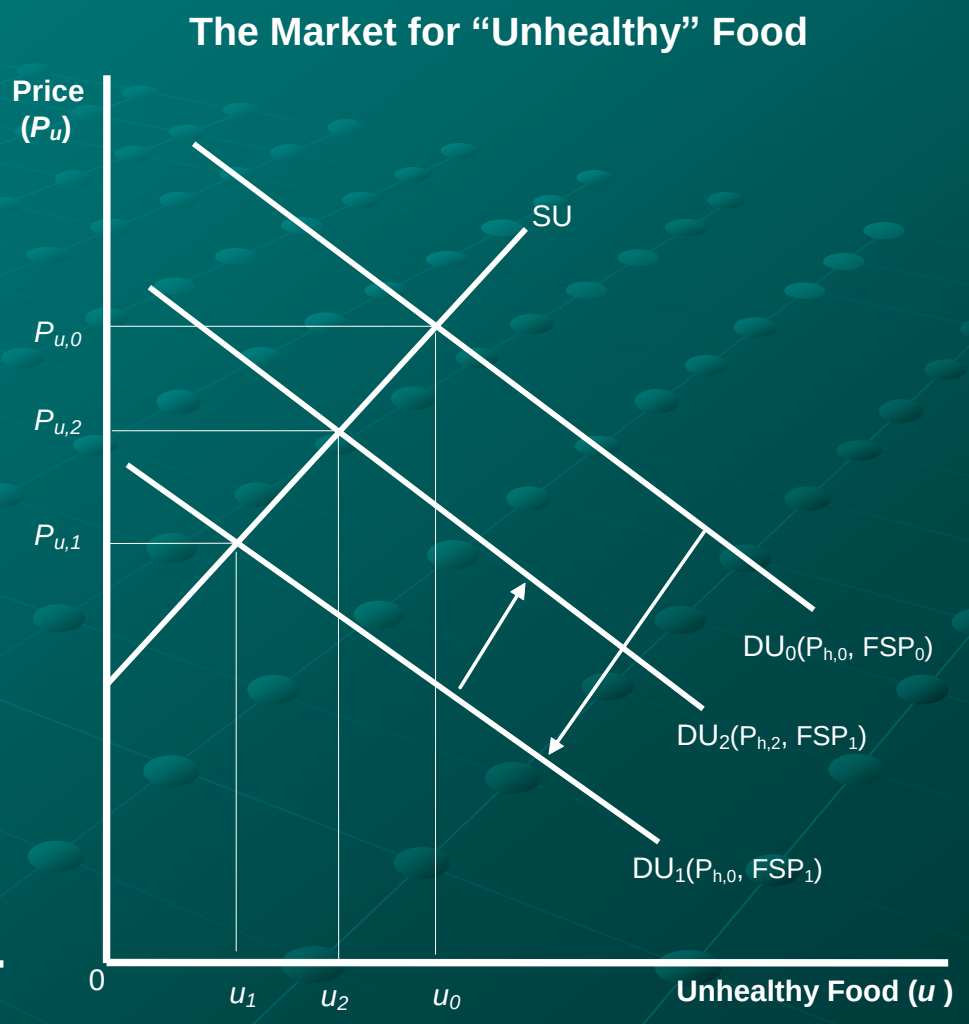


# "Healthy" Food Stamps and the Budget Constraint



# Supply Response to Policy Change



# Algebraic Model

- % changes in prices and quantities of healthy (H) and unhealthy food (U) as a function of
  - % increase in demand for healthy food by FSP participants ($\alpha_h$)
  - consumption of H and U by FSP participants ($H_f$ and $U_f$) and in total
  - budget shares of U for participants ($s_u$)
  - own and cross price elasticities of demand ($\eta$)
  - elasticities of supply ($\varepsilon$)

$$d\ln P_h = \left(\varepsilon_u - \eta_{uu}\right)\left(\frac{H_f}{H}\right)\frac{\alpha_h}{D} + \eta_{hu}\left(\frac{U_f}{U}\right)\frac{\alpha_u}{D}$$

$$d\ln P_u = \left(\varepsilon_h - \eta_{hh}\right)\left(\frac{U_f}{U}\right)\frac{\alpha_u}{D} + \eta_{uh}\left(\frac{H_f}{H}\right)\frac{\alpha_h}{D}$$

$$D = \left(\varepsilon_h - \eta_{hh}\right)\left(\varepsilon_u - \eta_{uu}\right) - \eta_{hu}\eta_{uh}.$$

# Simulation Results – $\alpha_h$ = 10%

| Elasticity of Demand | | Percentage Changes in Consumption | | | |
|---|---|---|---|---|---|
| | | Participants | | Non-participants | |
| Healthy Food ($\eta_{hh}$) | Unhealthy Food ($\eta_{uu}$) | Healthy Food ($d \ln H_f$) | Unhealthy Food ($d \ln U_f$) | Healthy Food ($d \ln H_n$) | Unhealthy Food ($d \ln U_n$) |
| -0.5 | -0.5 | 7.50 | -7.50 | -2.50 | 2.50 |
| | -1.0 | 7.73 | -6.82 | -2.27 | 3.18 |
| | -1.5 | 7.86 | -6.43 | -2.14 | 3.57 |
| -1.0 | -0.5 | 6.82 | -7.73 | -3.18 | 2.27 |
| | -1.0 | 7.00 | -7.00 | -3.00 | 3.00 |
| | -1.5 | 7.11 | -6.58 | -2.89 | 3.42 |

$\varepsilon_u = 1.0, \varepsilon_h = 1.0, \eta_{hu} = 0.5, \eta_{uh} = 0.5, U_f = 0.5U, H_f = 0.5H, s_u = 0.5.$

# Quantitative Speculation

- Dynamics of supply response matters
  - Second-round (price) effects smaller with increased length of run
- Differs significantly among main commodities and foods
  - Grains (annual)
  - Vegetables (annual)
  - Livestock (multi-year – meat, eggs, dairy products)
  - Fruit (perennial, many year)
- Interdependent among commodities
  - Through demand for land and other specialized factors
- Complex
  - Substantial change affecting multiple commodities together
  - Allowing for roles of policy and middlemen
- Direction of effects, mostly predictable (from simple model)
- Detailed magnitudes are harder, some are ambiguous

# Mixed Effects of Modified FSP

- Higher monitoring costs
  - Will reduce resources available for food subsidies
- More-binding constraints on purchases
  - Will result in reduced participation rates
- For continuing participants in the FSP
  - Improved dietary quality
    - lower overall caloric density
    - more frequent consumption of fruit and vegetables
  - MAYBE lower caloric intake and less future obesity

# Mixed Effects (continued)

- For an equal number of eligible non-participants (who will face higher relative prices of healthier foods, at least for a while), the converse
  - Lower dietary quality, with higher overall caloric density
  - MAYBE higher caloric intake and higher future rates of obesity
- For others who are not eligible for the FSP?
  - Similar (mostly undesirable) effects, as for eligible non-participants, but smaller

# Conclusion

- Many of the poor are obese, and increasingly so
- The food stamp program (FSP)
  - Has been effective at increasing food expenditure and reducing food insecurity among low-income households

  BUT
  - Allows participants to spend food stamps on calorie dense foods that have little nutritional value other than calories

  AND
  - May have contributed to obesity among the poor
- Little evidence is available on
  - The effects of the current FSP
  - The impacts of past changes in the list of eligible foods

# Conclusion (continued)

- It seems natural to limit food stamps to be used only for "healthy" foods

BUT

- Unintended effects may be important
  - Administration costs will increase, reducing available resources
  - Constraint will not bind on some participants => no effect
  - Constraint will bind on others, and participation will decline
  - Poorest will be most constrained and most affected
  - Converse effects on an equal number of eligible non-participants
  - Implications for obesity rates among the poor not clear

AND

- Other policies may be more effective at combating obesity without compromising other purposes of the FSP