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Food Safety: What is Economists' Value Added?

Julie A. Caswell

Department of Resource Economics

caswell@resecon.umass.edu

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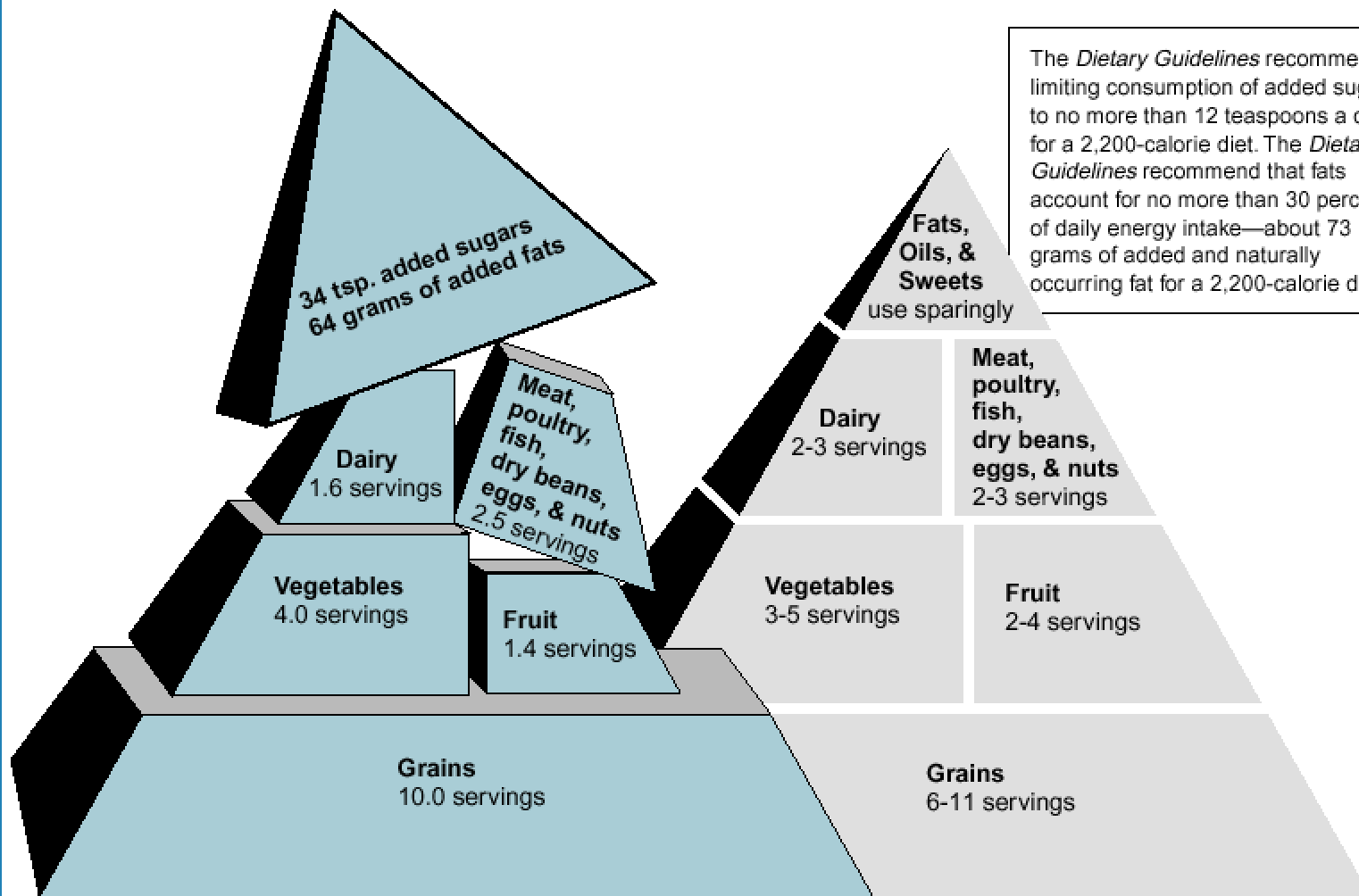


Food Markets

- **Safety and other quality attributes are more central features due to:**
 - **Income increases**
 - **Better technical knowledge**
 - **Higher trade volumes**

The Food Safety Landscape in the US

- **Foodborne disease levels remain significant**
- **Access to sufficient food remains a problem for some**
- **A key role for nutrition and diet issues**
 - **The “super sized” American**



The *Dietary Guidelines* recommend limiting consumption of added sugars to no more than 12 teaspoons a day for a 2,200-calorie diet. The *Dietary Guidelines* recommend that fats account for no more than 30 percent of daily energy intake—about 73 grams of added and naturally occurring fat for a 2,200-calorie diet.

Loss-Adjusted Food Supply Pyramid
Source: USDA's Economic Research Service

USDA/DHHS Food Guide Pyramid

Final Line of Defense for Food Safety

- **Demographic trends**
 - % of adult women in workforce is 60%
 - % of food dollar spent away from home is nearly 50%
- **Result: time pressed people or hired help are on the final line**



What Economists Are Contributing

- **Understanding of how markets for attributes work**

Dimensions of Quality

- **Intrinsic/extrinsic**
 - Intrinsic attributes (e.g., nutritional content)
 - Extrinsic indicators and cues (e.g., brand name) of those attributes

Intrinsic Quality Attributes

1. Food Safety

foodborne pathogens
pesticide residues

2. Nutrition

3. Sensory/Organoleptic

taste and tenderness
color

4. Value/Function

compositional integrity

5. Process

environmental, organic,
animal welfare, GMO use

Extrinsic Quality Indicators and Cues

1. Test/Masurement Indicators

quality management systems
certification (e.g., traceability)
labeling

2. Cues

price
brand name
store name
advertising
packaging



Dimensions of Quality

- **Intrinsic/extrinsic**
 - Intrinsic attributes
 - Extrinsic indicators and cues
- **Information environment**
 - Search, experience, credence
- **Vertically/horizontally differentiated**



What Economists Are Contributing

- **Understanding of how markets for food safety work**

For Example:

- **Food safety is partially a private good**
 - **Some market imperfections because information is:**
 - **Incomplete (frequently credence)**
 - **Often asymmetric (seller knows more than buyer)**
- **Also has aspects of public goods**
 - **Some market failure due to:**
 - **Externalities**
 - **Common goods**

In US, Food Safety Is

- **Premier attribute for consumers**
- **Vertically differentiated but little differentiation in the market**
- **Intrinsic because extrinsic indicators/ cues are relatively rare**
- **Largely credence in nature (at least in areas where regulators are active)**



The Economist's Value Added (So Far)

- **Demand analysis**
 - **Analysis of the marketability of food safety**

Assessing Consumer Demand for Quality

- **When quality attribute(s):**
 - **Are not currently sold in the market, set up **hypothetical markets** to value attributes**
 - Contingent valuation
 - Conjoint analysis (choice experiment)
 - Auction
 - **Are or can be sold in the market, look at **real markets** to value attributes**
 - Hedonic pricing models
 - Market trials

The Economist's Value Added (So Far)

- Estimation of **consumer level benefits** from risk reduction
 - Cost of illness + demand analysis

Lessons from the Benefits Side

- **Predominant emphasis is on measuring the value of avoiding adverse health outcomes**
 - **Highlights key importance of doing benefit measures**
- **Some efforts to count other benefits**

The Economist's Value Added (So Far)

- Estimation of **company level costs and benefits** of risk reduction
- Supply side analysis
- Incentives for QA adoption in supply chain

Benefits and Costs of QA for Firms

- **Benefits**
 - Price premia
 - Market share maintenance or growth
 - License to produce?
- **Costs**
 - Production costs
 - Transaction costs
 - Liability costs
- **How are benefits and costs shared?**

The Economist's Value Added (So Far)

- **Evaluation of alternative regulatory options**
 - **Process standards**
 - **Performance standards**
 - **Use of certification and labeling**
- **Benefits and costs**
- **Incentives**

Lessons from the Cost Side

- **Measuring costs of regulation is more difficult for foodborne risks because of mix of incentives**
- **Marginal cost of risk reduction is likely rising**
- **Flexible regulatory approaches that allow choice will likely be more cost effective**
- **Redistribution rather than level of costs is likely to be most prominent effect of regulations**

The Economist's Value Added (So Far)

- **Evaluation of trade issues related to food safety**
 - **SPS Agreement**
 - **More v. less developed countries**

The Economist's Value Added (To Do)

- **Better and more**

What is the impact of _____?

***What is the impact of _____
and _____, while doing _____?***



In the Public & Private Sectors

- **Risk reduction management**
- **Opportunity management**

Complex Environment



Choosing Effective Regulations is Difficult

- **Multiple risks**
- **Complex private incentives**
- **Many potential regulatory approaches**
- **Fragmentation of responsibility**

*Prioritizing Risk Reduction
Opportunities and Interventions*

Risk Assessment
(Causes & Incidence of Illness)

Risk Management I
(Evaluating Current Interventions)

Risk Management II
(Evaluating Potential Interventions)



Risk Assessment

- **Is the:**



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Risk Management

- **Is the:**



Risk Management Is Not Doing Enough to

- **Understand private/public incentives to reduce risk**
- **Set priorities for risk reduction using input from risk assessment**
- **Choose most effective regulatory mechanisms and organization**
- **Understand the benefits and costs of choices**



Role of Science (& Risk Assessment)

**“Science only gives you data.
Then you have to decide
between ConAgra and the
consumer.”**

Carol Tucker Foreman

Food Policy Institute

Consumer Federation of America

The Economist's Value Added (To Do)

- **Better and more**

What is the impact of _____?

***What is the impact of _____
and _____, while doing _____?***



Bi-Polar Disorders

- **At home, away from home food**
- **Farm, non farm**
- **FSIS/FDA**
- **US/EU**
- **Food safety/biosecurity**



Mad Cows-Mad Borders?

- **Border closings**

COOL or unCOOL?

- **Let's implement Country of Origin Labeling (COOL)**
- **But let's not think about:**
 - **How it's integrated into current tracking systems**
 - **Linking it to food safety traceability**

Defining Traceability

- **The ability to trace a product through all stages of production and distribution**
- **A traceability system is defined by:**
 - **The attribute(s) being traced (e.g., product origin, production practices)**
 - **The degree to which detailed information is communicated along the supply chain (i.e., internal v. external traceability)**

(United Kingdom Food Standards Agency 2002)

When to Trace ?


- **For product recall and remedial actions**
 - Safety-related
 - Fraud-related
- **For verifying product or process attributes that can' be tested for in the final product**
 - Organic production
 - Geographical source
 - Animal welfare practices
 - Freshness

Mandatory Traceability?

- **In United States**
 - May be where deemed necessary to assure food safety, aid in recall
 - Unlikely for any other type of quality assurance
 - But then there is COOL (Country of Origin Labeling)
- **In European Union**
 - Being built into all types of quality assurance schemes
 - Question of interaction with private programs

Who Is (Should Be) Responsible for Food Safety?

- **End the relatively free ride for farmers/ranchers**
- **Performance standards, enforcement teeth for processors & food service operators**
- **☺What about us?☹**



The U.S. Place in the World

- **Keeping our own house in order**
- **“Prudent” use of the WTO dispute process**

Overall Trends

- **Dominant approach to safety will be ratcheting up of regulatory standards**
 - **Although some segments will buy products further differentiated on safety attributes**
- **Private standards and accountability are also ratcheting up**



Directions for Future

- **HAVE to get more integrative in analysis**
 - **Across attributes**
 - **Across approaches to quality assurance**

Adding Value

- **It takes a lot of work to**
 - Understand what is happening
 - Predict what's going to happen
 - Evaluate what did happen
- **Need to do good risk management**
 - Public sector
 - Private sector
- **Economists need to play a bigger role**