

Can Advertising and Media Health Coverage Mitigate the Consumer Effects of Food Safety Occurrences: The Case of Meat in Canada?

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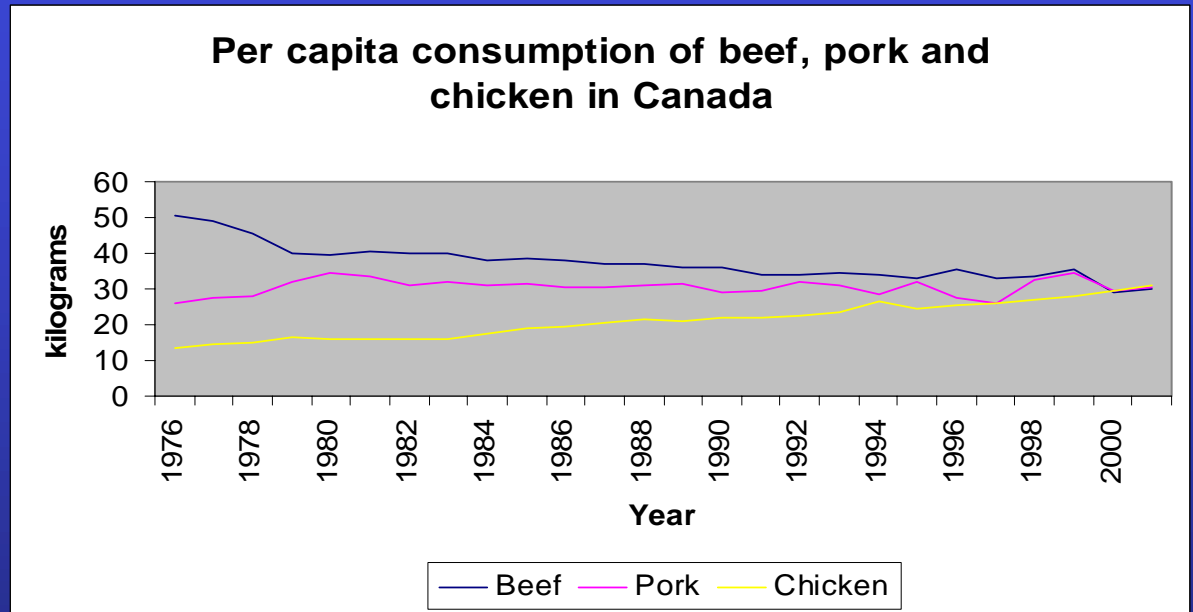
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Introduction

- Dramatic increase of food safety incidences in the past decade.
- Meat product contaminants: Listeria monocytogenes, E. Coli, salmonella, BSE, dioxins, hormones and antibiotics.
- It is practically impossible to completely eradicate them from the supply chain.
- Depending on their effect in every country there are ameliorating tools that could help in reducing the impact of such negative information.

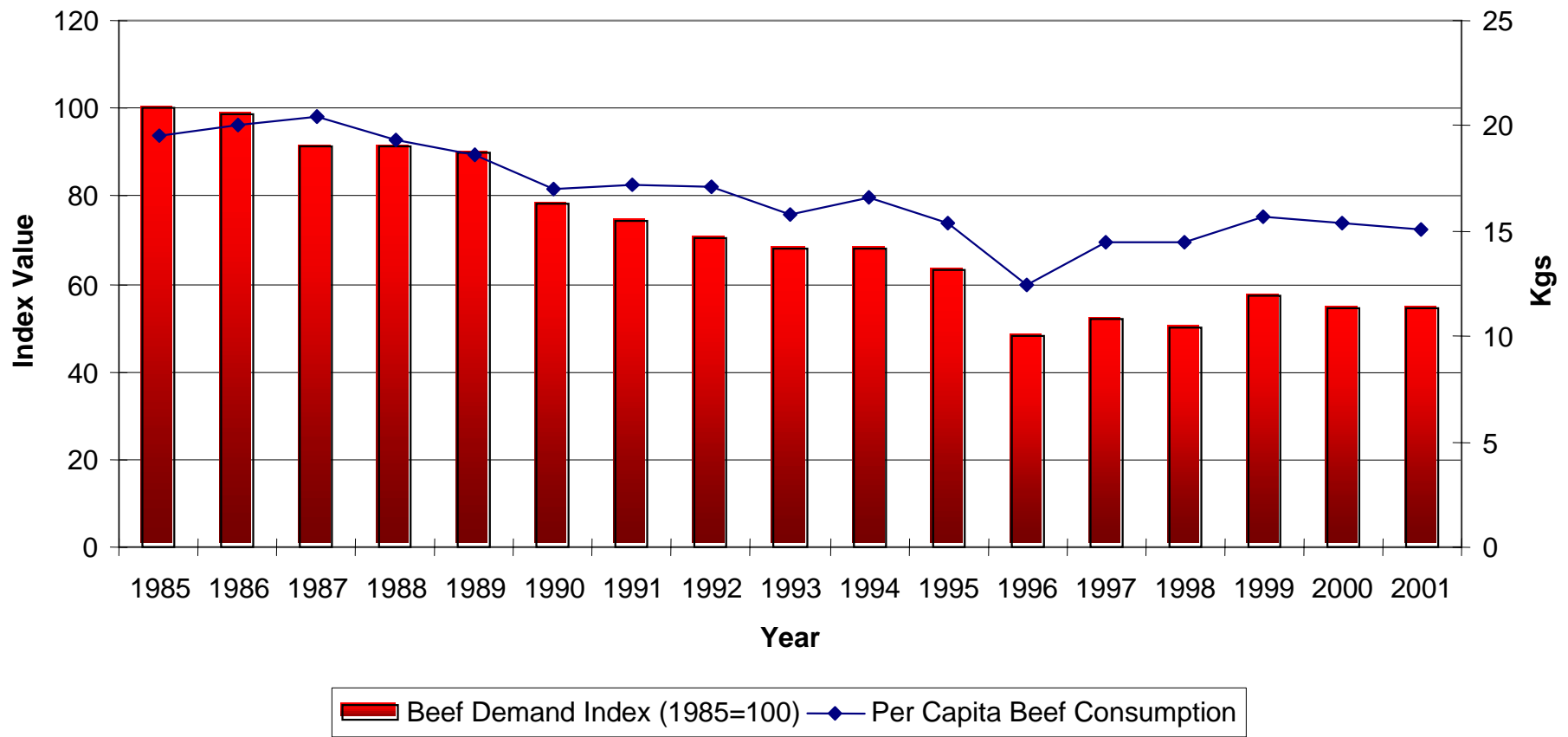
Research Questions

Meat consumption
in Canada from 1976
to 2001.

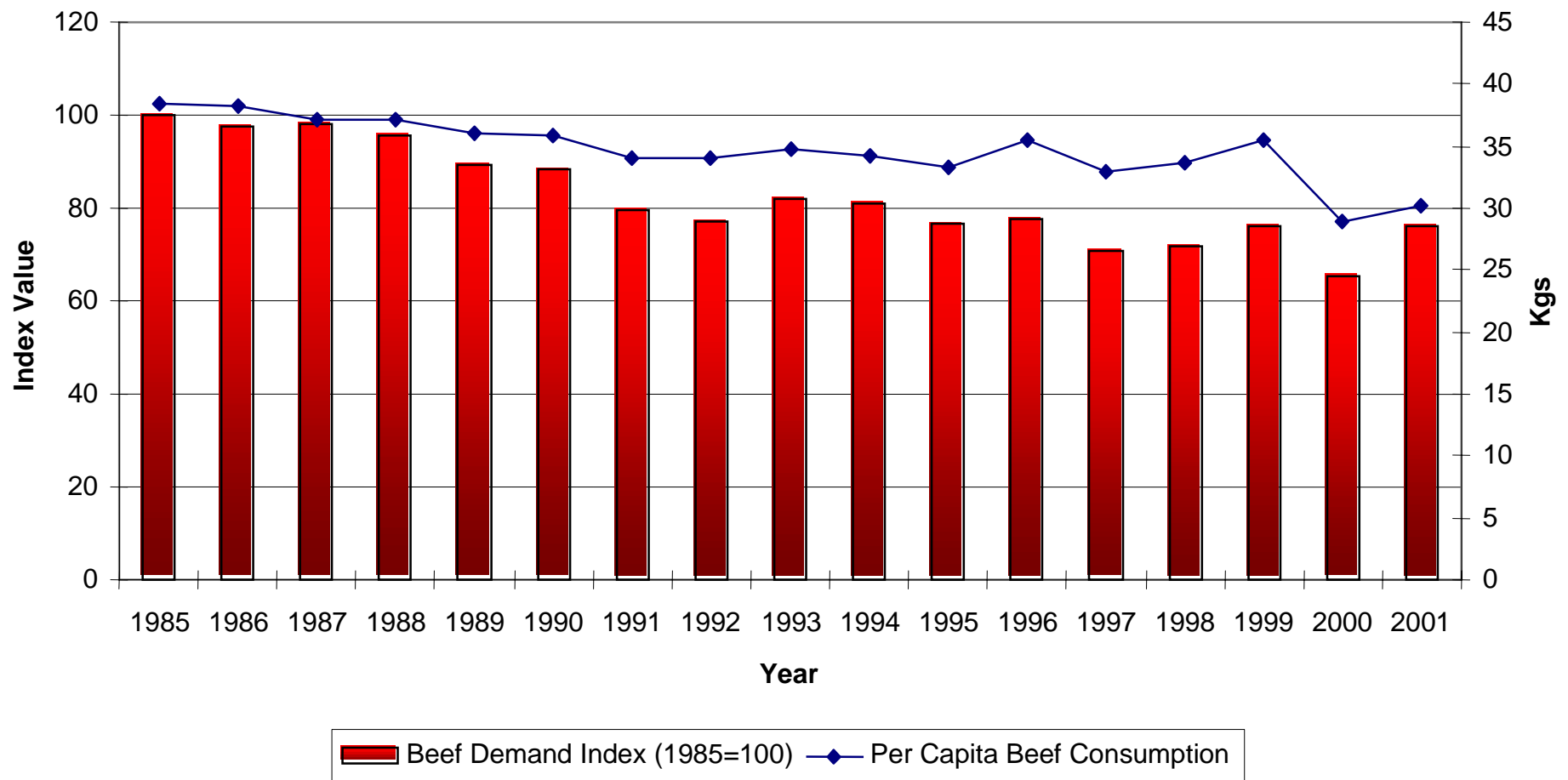


- a) Have 'food scares' and health concerns affected the demand for beef in Canada?
- b) If so, has advertising ameliorated the negative effect of such information?

Beef demand index and per capita consumption in the UK

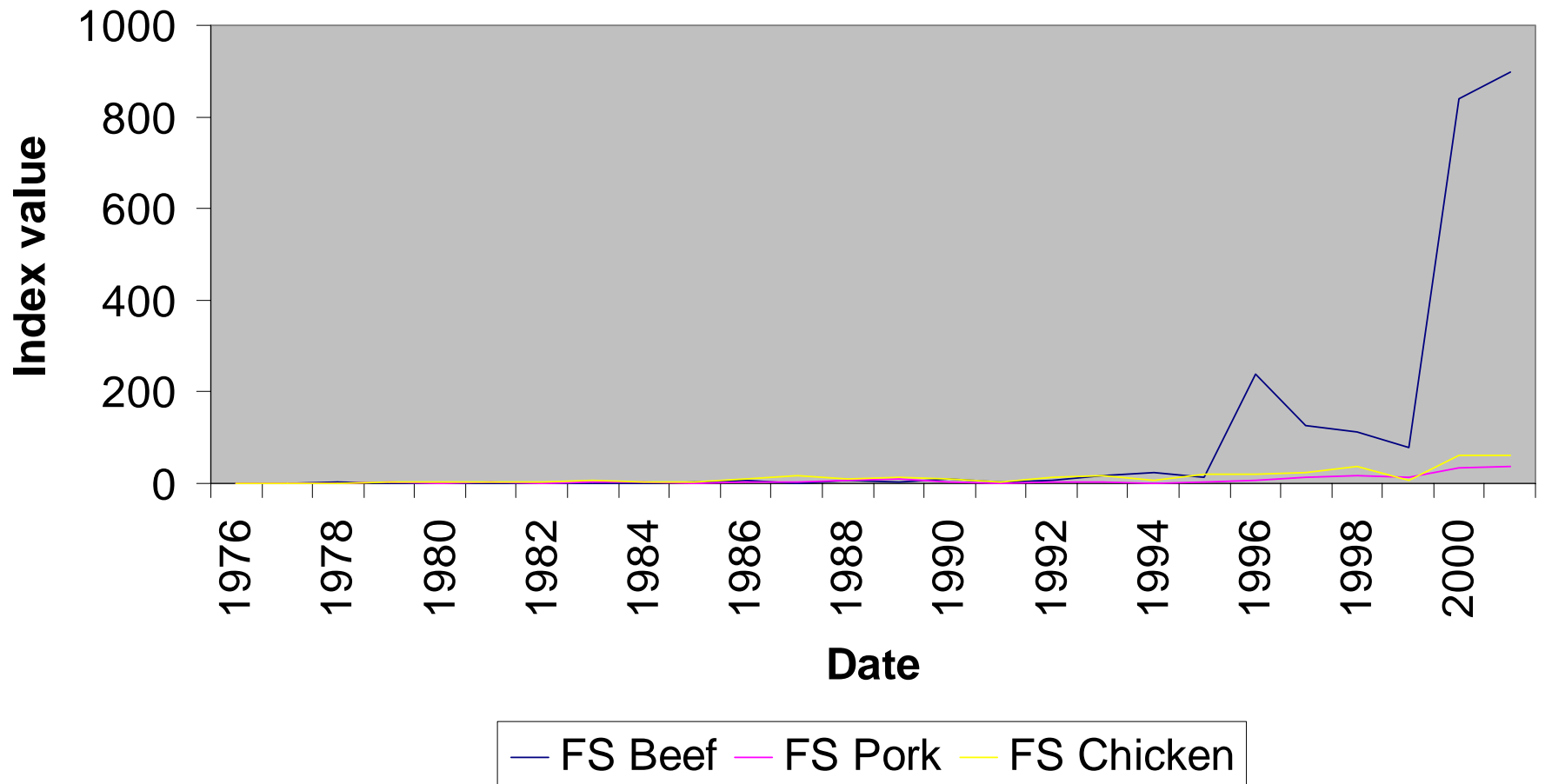


Beef demand index and per capita consumption in Canada



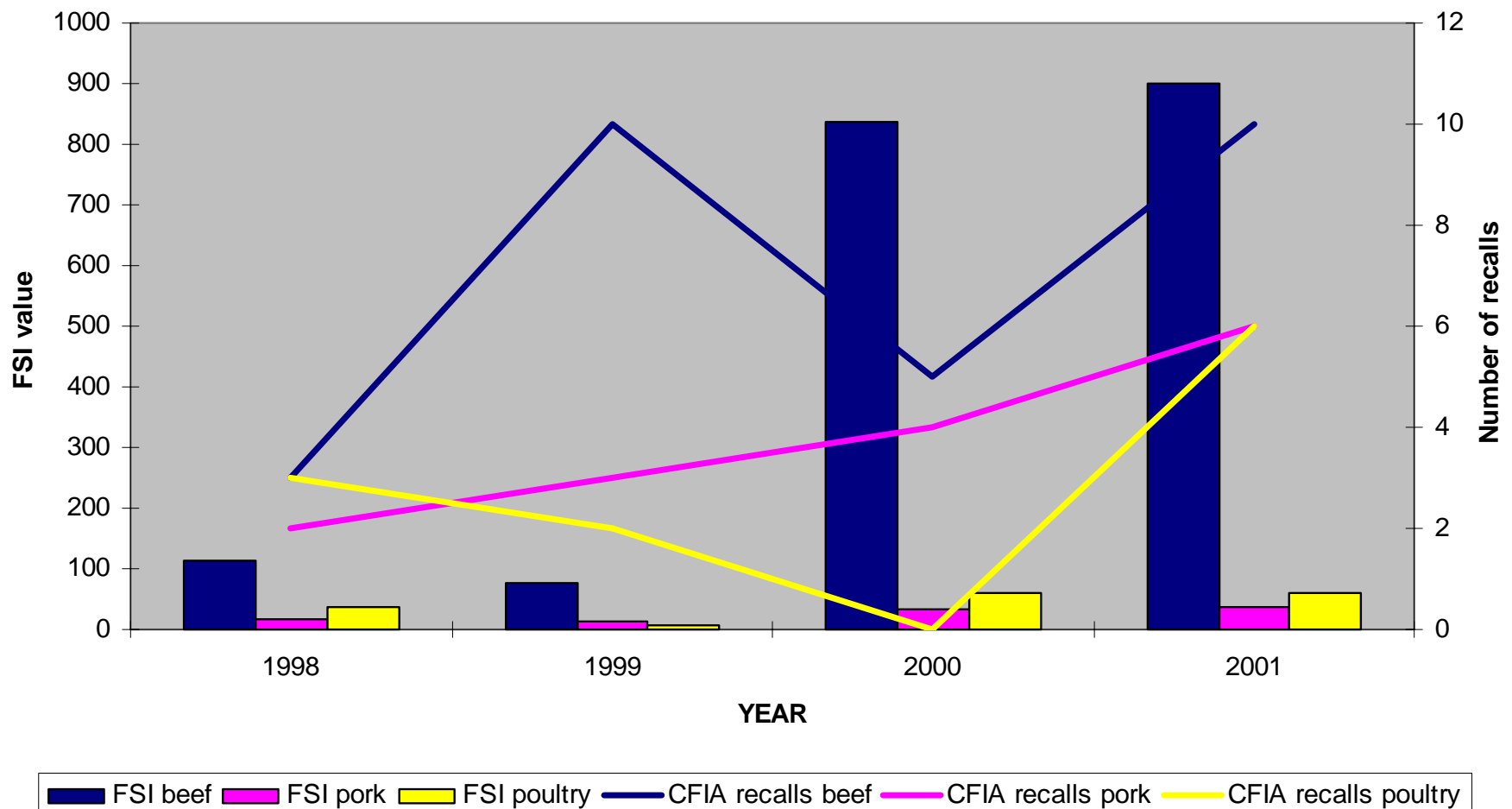
Food Safety Indices

Food safety indices



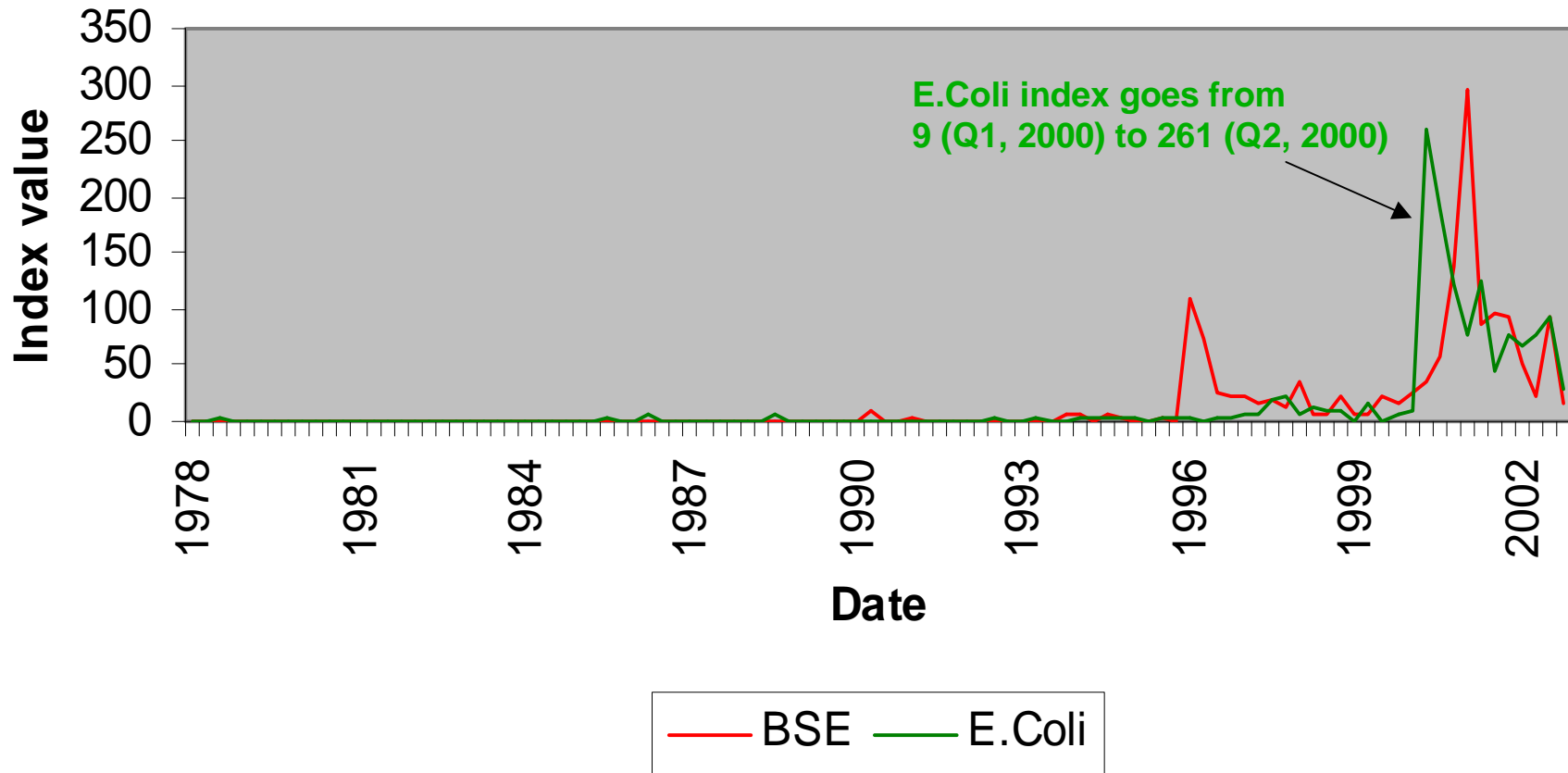
CFIA Recalls and the Food Safety Indices

Comparison of CFIA recalls vs. FSI for various meats



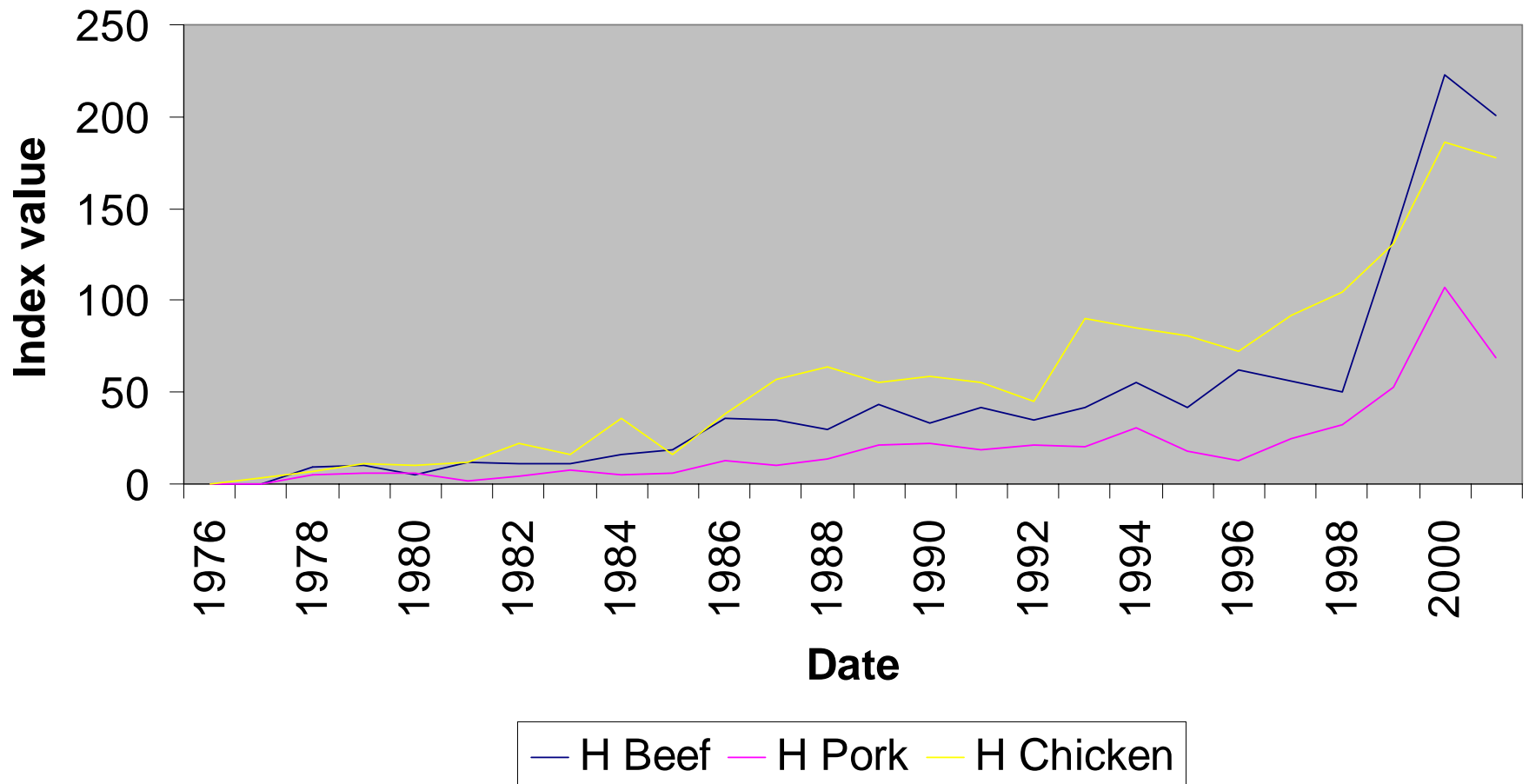
Beef Safety Information: E.Coli vs. BSE

Beef safety information

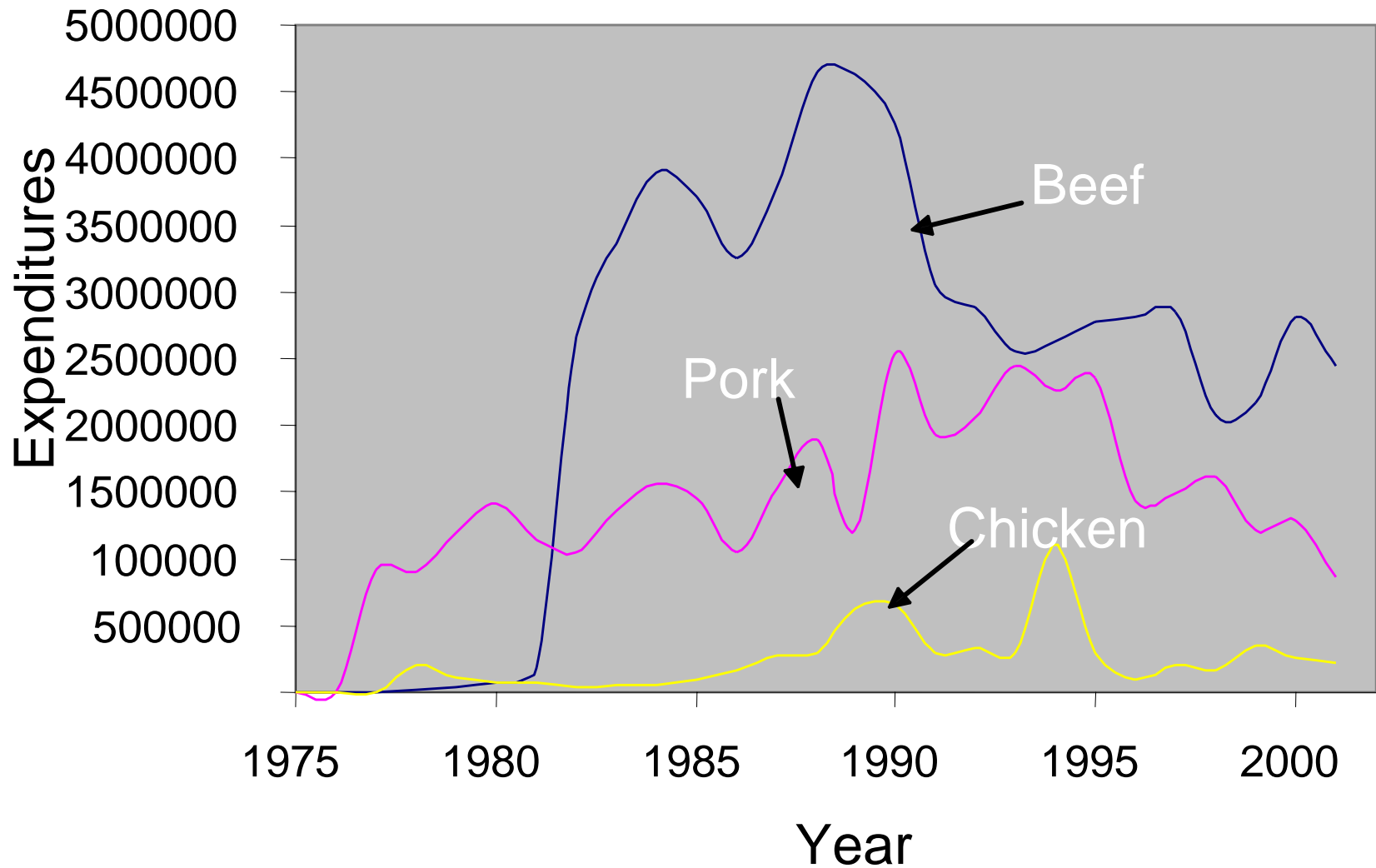


Health Indices

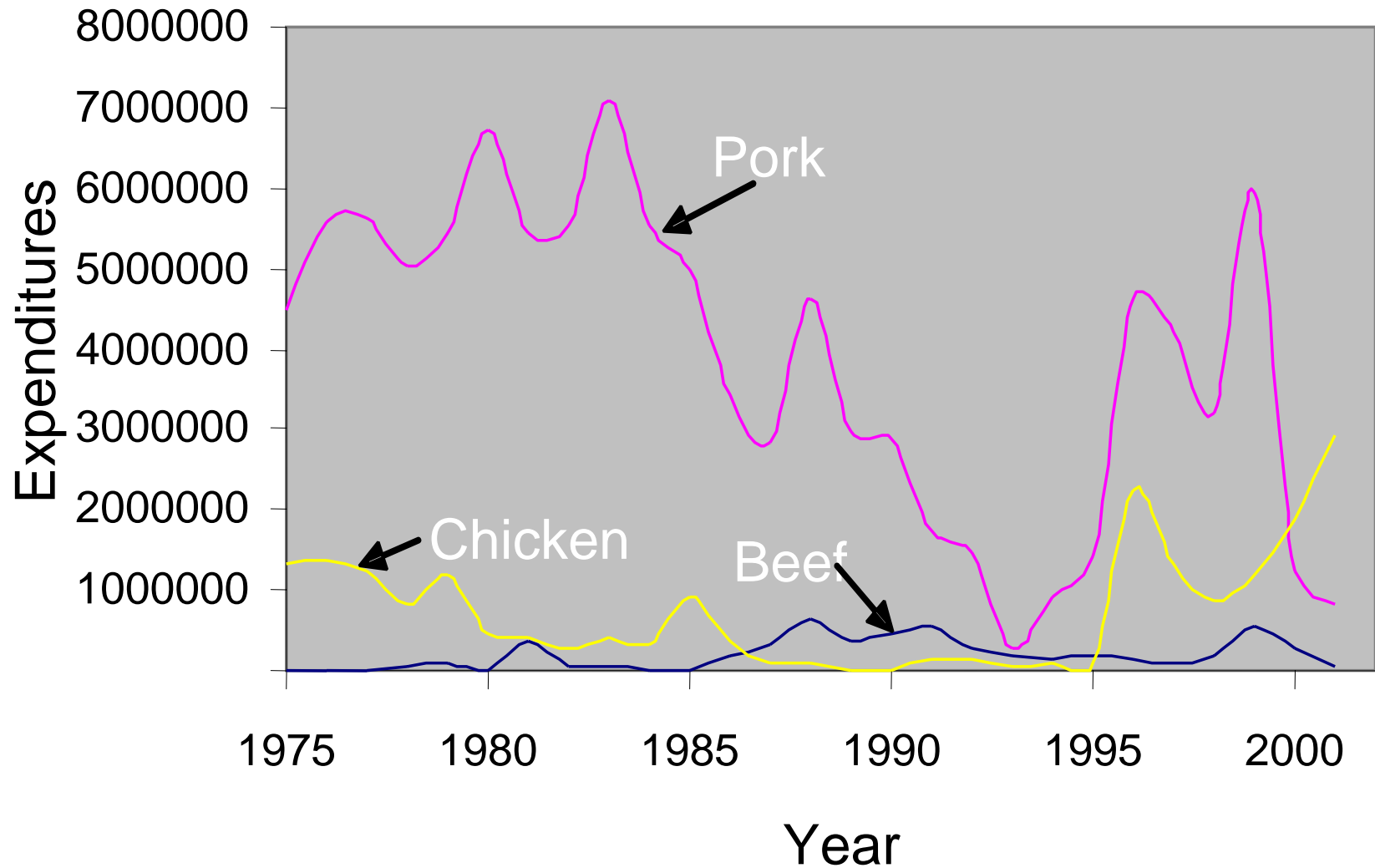
Health indices



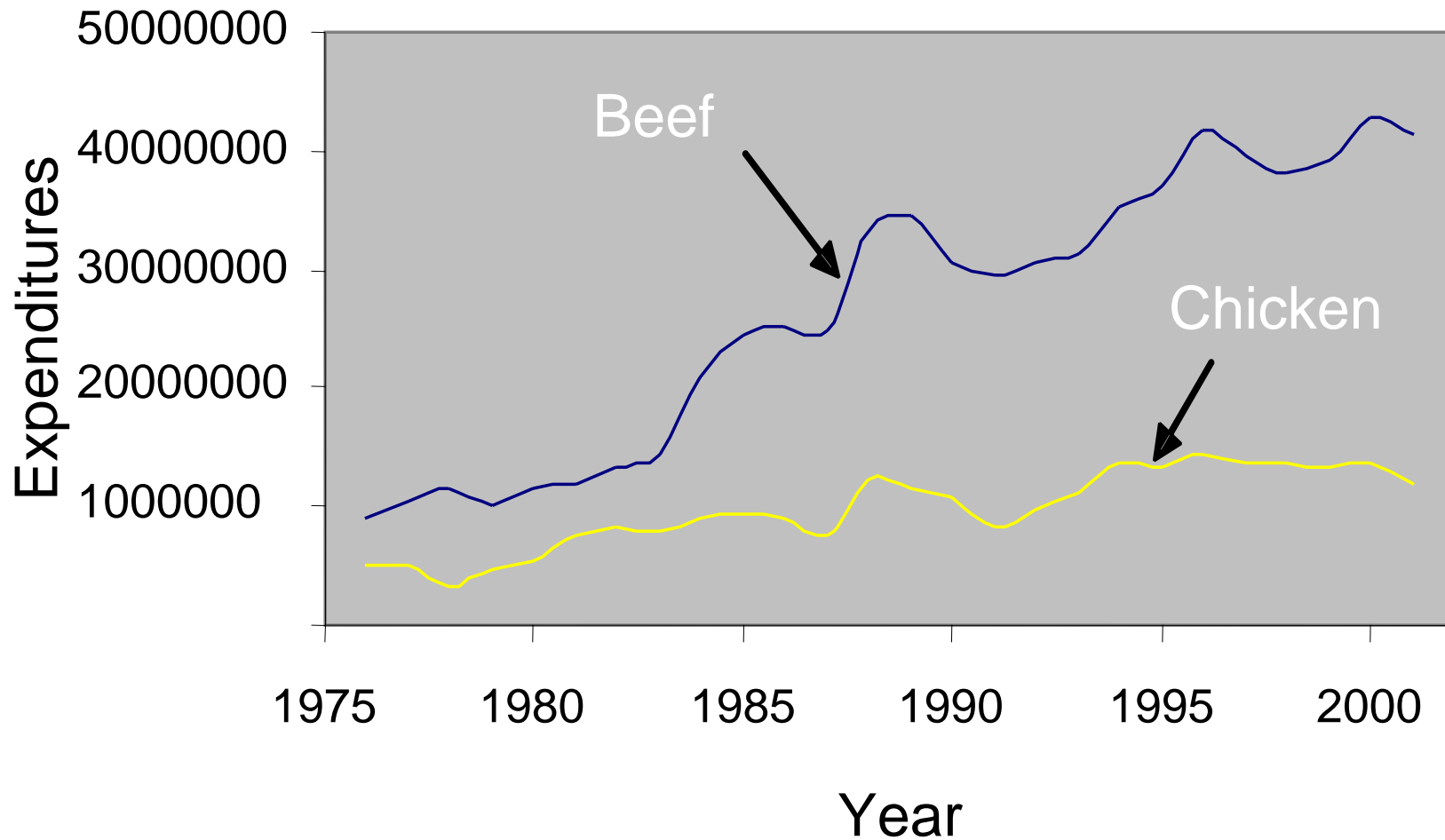
Generic Advertising in Canada



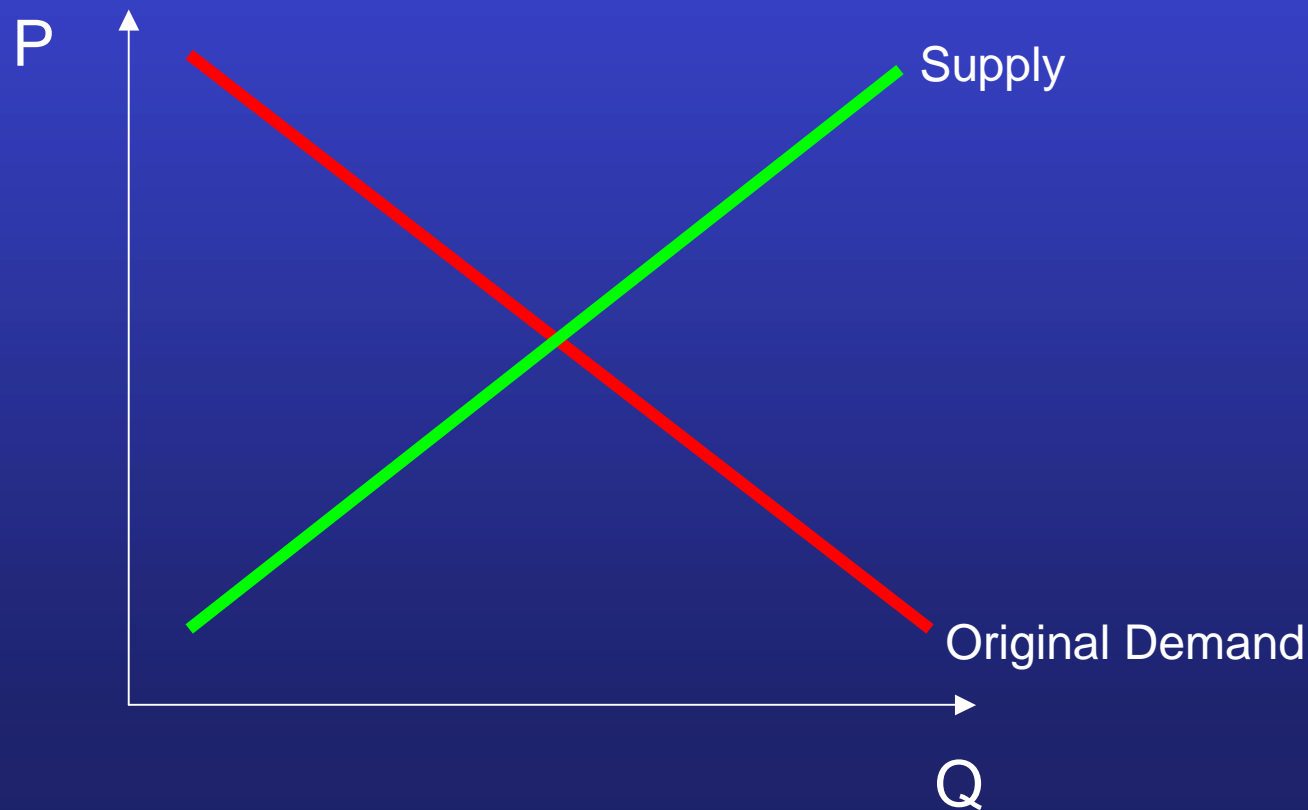
Brand Advertising in Canada



Fast Food Restaurant Advertising in Canada



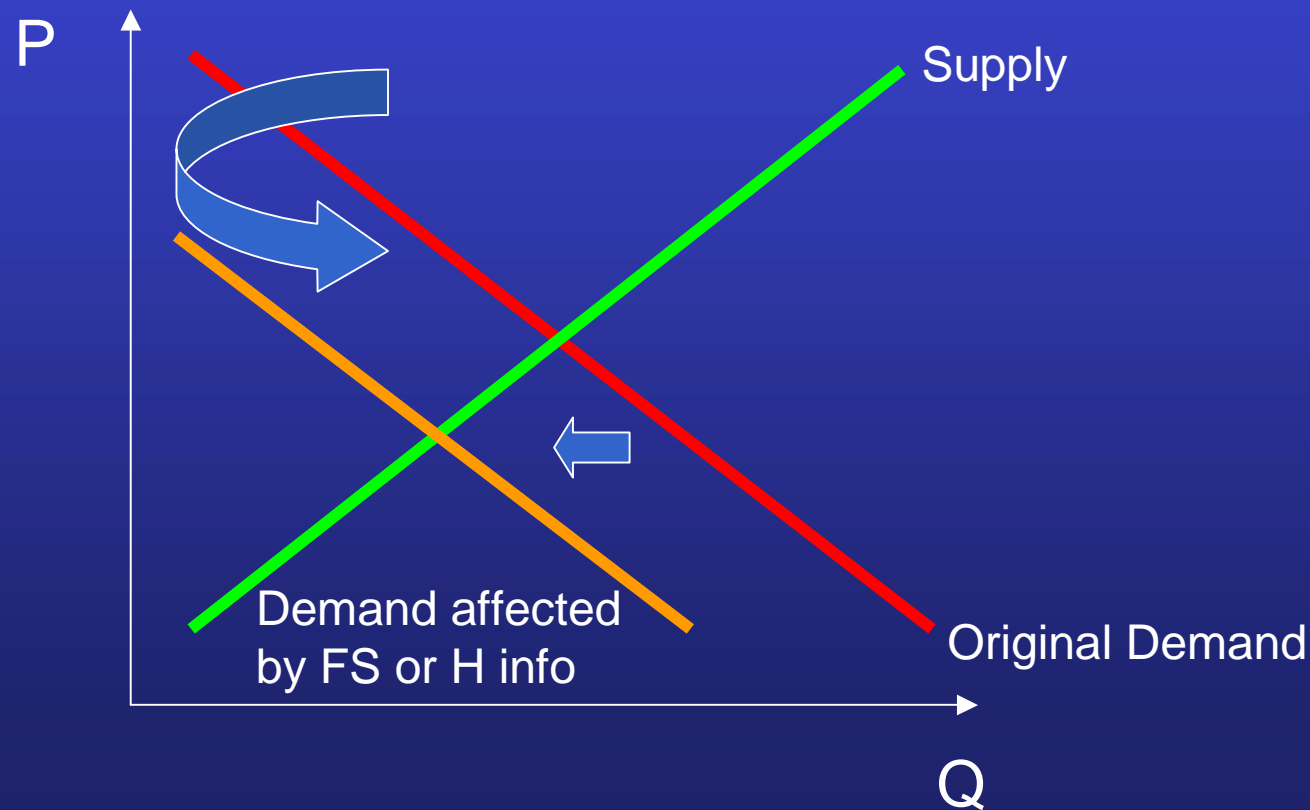
Can Advertising Offset the Effect of Negative Information?



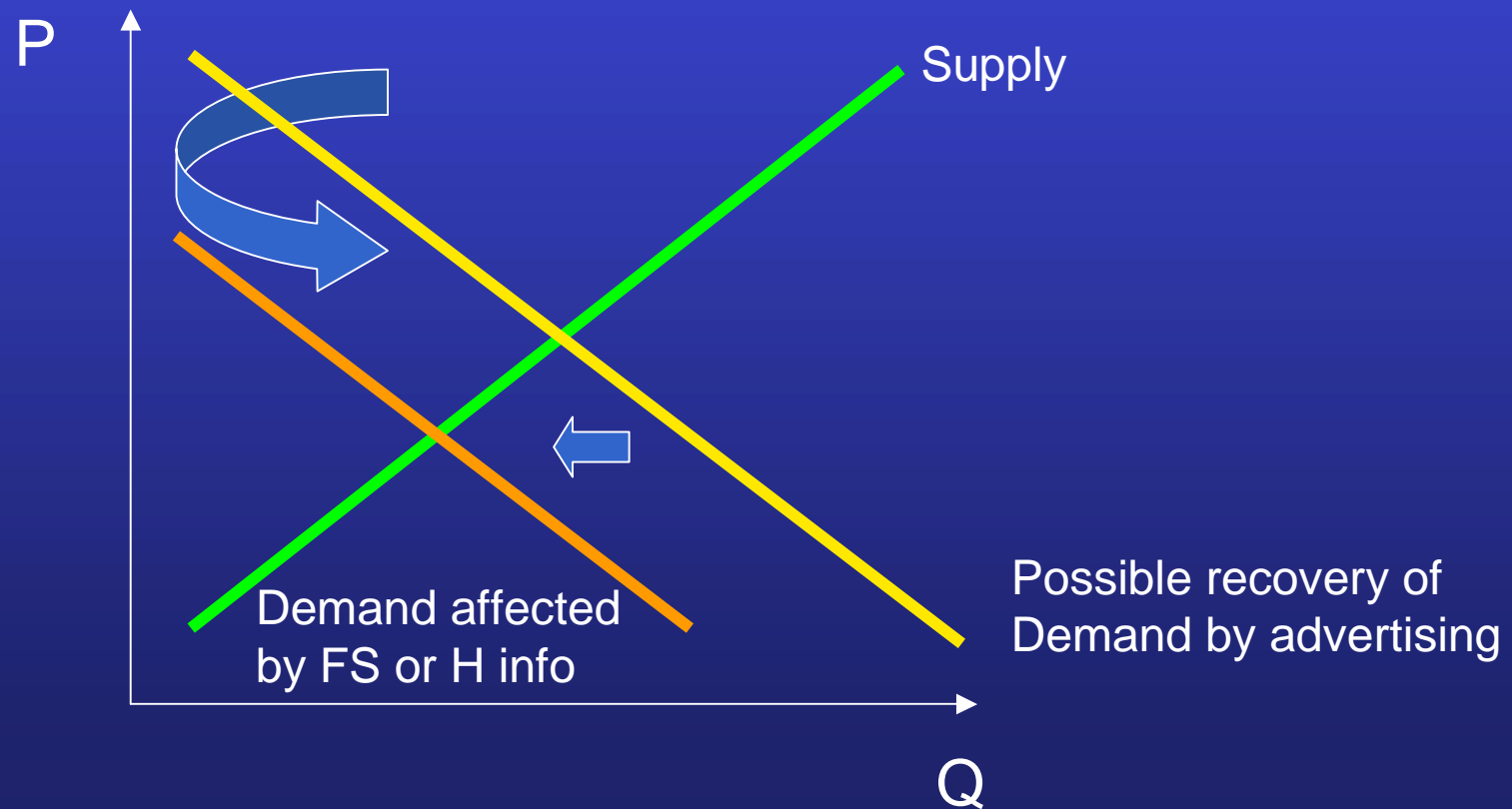
Can Advertising Offset the Effect of Negative Information?



Can Advertising Offset the Effect of Negative Information?



Can Advertising Offset the Effect of Negative Information?



Model

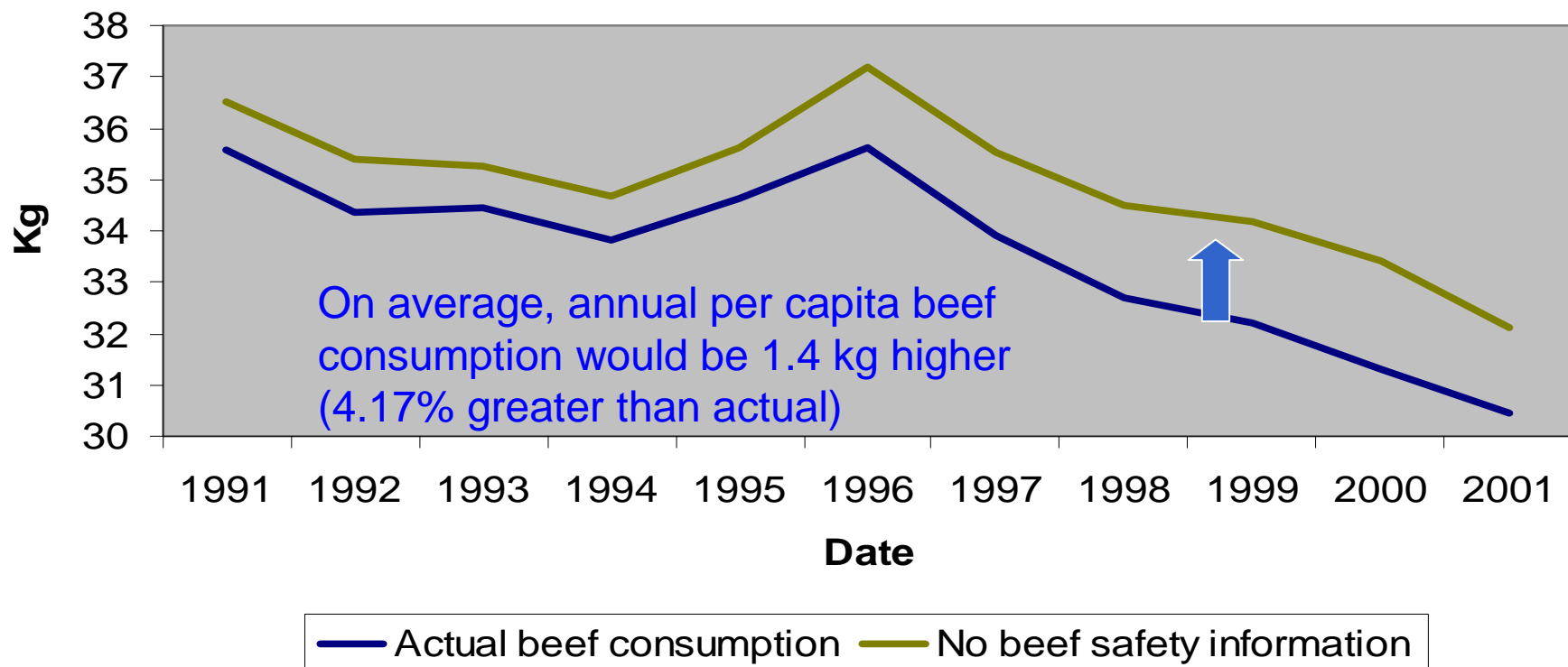
- Conducted as a two stage budgeting problem.
 - The first stage of the demand system is specified as a log-log relationship.

$$T.E._t = f(P_t, Y_t, D_t, FSI_t, HI_t, T_t, GAD_{t-1}, BAD_{t-2}, RAD_{t-2}, FG_t, T.E._{t-1})$$

- The second stage is composed of a system of share equations explaining the demand for each meat type as functions of prices of all meats, total expenditure on meats, the three types of advertising and the food safety and health indices.

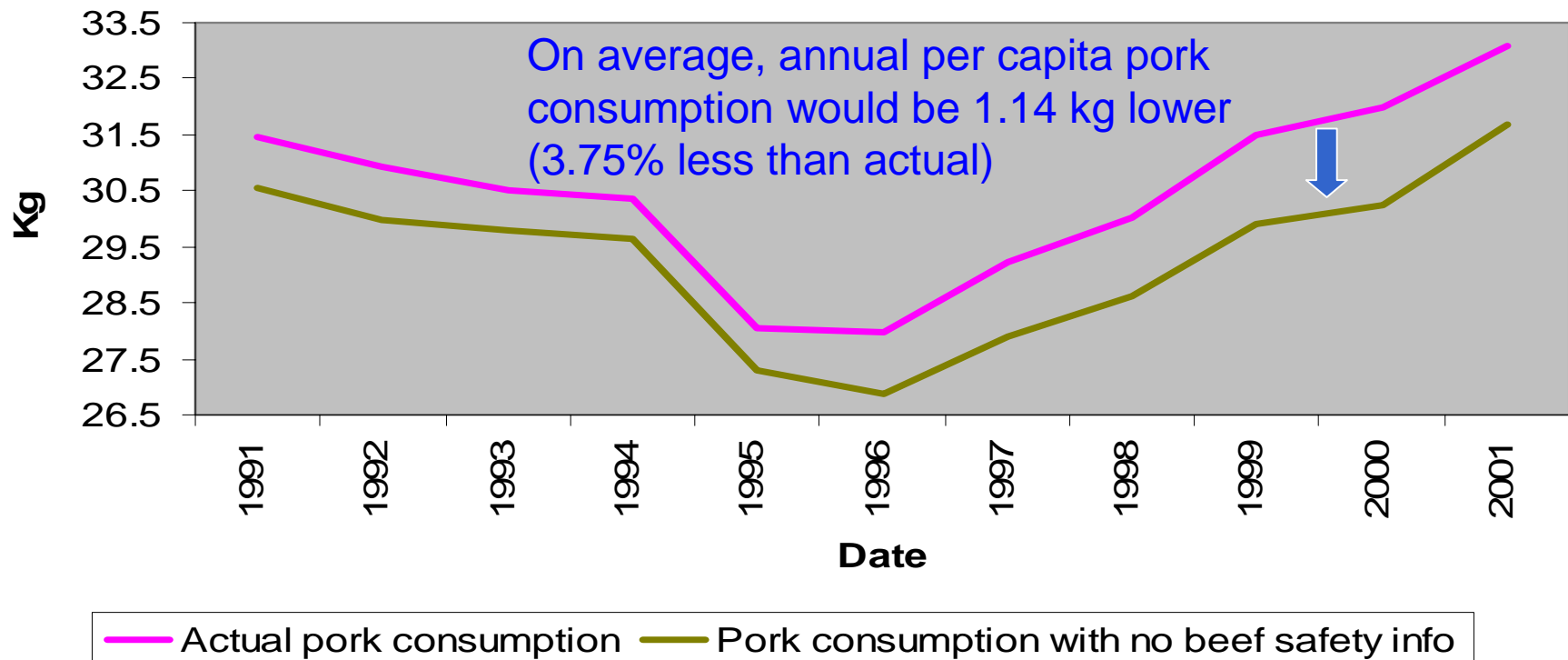
Simulation: Beef Consumption with no Beef Safety Info

BEEF CONSUMPTION (Kg/head)
If there had not been media information covering BSE and E. Coli...



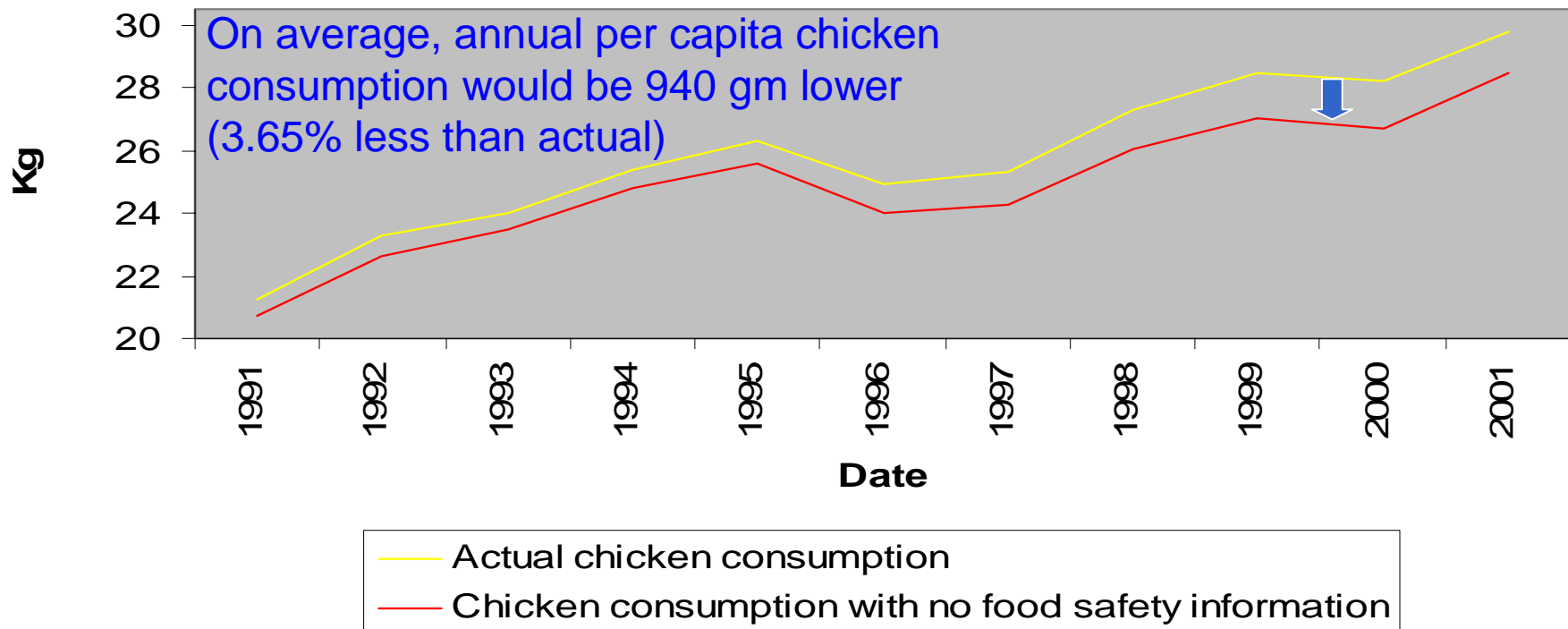
Simulation: Pork Consumption with no Beef Safety Info

PORK CONSUMPTION (Kg/head)
If there had not been media information covering BSE and E. Coli...



Simulation: Chicken Consumption with no Beef Safety Info

CHICKEN CONSUMPTION (Kg/head)
If there had not been media information covering BSE and E. Coli...



Simulation Results: The Role of Beef Generic Advertising

Beef generic advertising expenditures (annual)	
Actual (mean)	\$2,640,673.07
Increased by 6.5%	\$2,812,316.82
Difference	\$ 171,643.75

Annual per capita meat consumption	Beef (Kg)	Pork (kg)	Chicken (kg)
Actual (mean)	33.55	25.83	30.46
With no beef food safety	34.95	24.88	29.32
With increased advertising	35	24.67	29.35

Health Implications of Changes in Meat Consumption Patterns

- This is not the first study to suggest that consumers do change meat purchase behaviour in response to food safety concerns
- The nutrition literature is starting to identify some of the long term health implications of 'food scare' induced shifts in consumption
 - Cade, Calvert and Barrett (1998) found that non-beef eaters had significantly lower energy, protein, zinc and fat intakes, % of energy from fat and Body Mass Index also lower; the benefits from the last two may out weigh any negative implications of the first depending upon other diet issues
 - Sorenson et. al. (2003) found significant decline in retinol intake (animal derived component of Vitamin A) due to avoidance of liver post BSE; while beef consumption eventually responded liver didn't; potentially necessary to have public health campaigns to increase fruit and vegetable consumption to compensate for reduced liver intake

Risk Communication

- Consumer risk assessments (and their response to ‘scares’) are affected by:
 - Information available, ability to understand information, agreement that scientists support the findings, personality characteristics (technical)
 - Scientific information and social influences, perception of acceptability by friends and family, trust in public and private agencies (social)

Both science and peers are important!

Studies on Risk Communication

- Frewer et. al. (2002) found that ‘uncertainty’ of scientific information about food safety should be presented to the public; people want transparency in risk management and to be able to make informed choices about exposure to food risks
- In a similar vein Harris and O’Shaughnessy (1997) report that the British government exacerbated the BSE crisis through not having a strategic planned approach to public relations management; the government should have followed a policy of full disclosure, translated scientific expertise into layman’s terms, pursued a strategy of fully independent scientific monitoring

What do we know about food safety scares?

- Incidences of food safety are not directly related to media coverage
- Media coverage can change consumption patterns of foods
- The impact on food consumption can affect nutrient intake of consumers
- In some cases the impact may disappear after a certain period of time (certain studies suggest that beef consumption in certain parts of Britain returned to 'normal' levels within four years of the 1996 announcement)
- Risk communication is of critical importance
- Information, through advertising and public service announcements can mitigate the effect of food 'scares'

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