U.S. Domestic Consumption of Food: 
The Future May Be Brighter Than the Past

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ABSTRACT

Share of personal consumption expenditures spent on food by U.S. consumers and per capita consumption of aggregate pounds of food have declined during the twentieth century. These trends, among others, have underscored the pessimistic outlook for domestic food consumption. However, development of low calorie foods may change this outlook. The reason is that per capita daily caloric consumption has changed little since 1910. Should this trend continue, lower calorie foods would likely translate into increased per capita consumption. A reduction in the excess of domestic production over domestic consumption would result, as would the need for export expansion programs.
Export expansion, a primary goal of U.S. farm policy since the 1950s, has become even more important during the 1980s. A fundamental argument behind this goal is that stagnant-to-declining domestic per capita consumption of food means total domestic food consumption will increase at the rate of population growth. Since U.S. population has increased only about one percent per year during 1980s while aggregate farm output has increased 1.7 percent per year over the long term from 1950 to 1986, an annual domestic surplus of 0.7 percent is expected (U.S. Department of Commerce (USDC), February 1987, p. 2, and U.S. Department of Agriculture (USDA), June 1988, p. 72). Exports appear to be the only hope for absorbing this surplus; otherwise, the farm production capacity of the U.S. will need to be reduced through the exit of resources or the implementation of substantial land set-asides.

In assessing the argument for export expansion policies, it is important to understand the dynamics of domestic food demand. Key characteristics, including those that underpin the current pessimism, are discussed. However, the future may not be as bleak as it appears. An argument for a more optimistic future is presented.

**Food Expenditures**

Food accounted for 16 percent of personal expenditures by U.S. consumers in 1986 (Figure 1). This share is 10 percentage points smaller than the 26 percent share in 1929, the first year data are available. Note, the magnitude of this decline is affected little by including federal expenditures on farm price and income support programs as part of
Figure 1. Share of Personal Consumption Expenditures Accounted for by Selected Food Expenditure Measures, U.S., 1929–1986.

Share of Personal Consumption Expenditures (%)

* Excludes alcohol expenditures.

SOURCES:


The National Income and Product Accounts of the United States, 1929–82.

food expenditures. Since 1950, when consistent data on the Federal budget begin, farm program spending has never been more than 1.3 percent (1954 and 1955) of personal consumption expenditures (Spitze).

Given the decline in the aggregate food expenditure share, it is not surprising that the share of expenditures spent for food originating on U.S. farms and for the farm value of U.S.-origin food have also declined. Between 1947, the first year these data were compiled, and 1986, the two shares declined from 26 to 13 percent and from 12 to 3 percent, respectively (Figure 1).

Farm expenditure share declined proportionately more than food expenditure share. The reason was the increasing importance of marketing services provided by processors, distributors, and retailers. Such services accounted for 75 percent of consumer expenditures for U.S.-origin food in 1986, compared with 55 percent in the late 1940s. This increase reflects higher processing and merchandizing costs, a growing share of food consumed away from home (Dunham, p. 31), and additional processing of food consumed at home, especially processing that reduces meal preparation time.

The large and increasing importance of marketing services suggests it is no longer appropriate to state that farmers produce food. Instead, they produce a raw material that is processed into the goods (and services) called food. From this perspective, modern farming differs little from other industries, such as oil drilling, mining, and logging, that also produce raw materials used to manufacture consumer goods.
Per Capita Consumption

Per capita retail consumption of food (net of packaging) declined from approximately 1600 to 1400 pounds between 1909 and 1981, the first and last years these data were compiled (USDA, 1972, p. 690; USDA, November 1984, p. 9). Despite the aggregate decline, per capita consumption of beef, poultry, cheese, non-butter fats/oils, and corn sweeteners has increased (Table 1). On the other hand, per capita consumption of lamb, eggs, fluid milk/cream, butter, cane/beet sugar, wheat flour, and potatoes has declined while pork consumption has essentially remained constant. Note, most individual foods have experienced cycles of increasing and decreasing consumption since 1909 rather than continuous increases or decreases.

Many factors influence whether per capita consumption of an individual food increases or decreases, including changing tastes, increasing income, and evolving health concerns. However, a major factor is technology and its impact on relative prices. For example, new processing technology made high-fructose corn sweetener economically competitive in the early 1970s, setting the stage for its rapid growth in consumption.

Another example is poultry. Advancements in genetic breeding and production technology substantially reduce poultry production costs, thereby increasing its price competitiveness. Beef and pork farm gate prices increased 124 and 153 percent, respectively, between 1950-52 and 1985-87. In contrast, broiler farm gate prices increased only 11 percent (USDA, 1972, p. 367, 382, and 481; USDA, July 1988, p. 33).
Table 1. Civilian Per Capita Consumption of Selected Principal Foods, U. S., Selected Years, 1909-1985.

<table>
<thead>
<tr>
<th>Food</th>
<th>1909</th>
<th>1929</th>
<th>1949</th>
<th>1969</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef &amp; Veal</td>
<td>65</td>
<td>45</td>
<td>59</td>
<td>85</td>
<td>81</td>
</tr>
<tr>
<td>Pork</td>
<td>62</td>
<td>65</td>
<td>63</td>
<td>61</td>
<td>62</td>
</tr>
<tr>
<td>Lamb</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Poultry Meats</td>
<td>17</td>
<td>16</td>
<td>23</td>
<td>47</td>
<td>70</td>
</tr>
<tr>
<td>Eggs</td>
<td>36</td>
<td>38</td>
<td>47</td>
<td>39</td>
<td>32</td>
</tr>
<tr>
<td>Fluid Milk &amp; Cream</td>
<td>348</td>
<td>331</td>
<td>342</td>
<td>280</td>
<td>245</td>
</tr>
<tr>
<td>Cheese</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Butter</td>
<td>18</td>
<td>18</td>
<td>11</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>All Dairy (Milk Equivalent)</td>
<td>770</td>
<td>811</td>
<td>734</td>
<td>569</td>
<td>596</td>
</tr>
<tr>
<td>Non-butter Fats &amp; Oils</td>
<td>23</td>
<td>31</td>
<td>35</td>
<td>49</td>
<td>62</td>
</tr>
<tr>
<td>Sugar (from cane and beets)</td>
<td>74</td>
<td>97</td>
<td>96</td>
<td>101</td>
<td>63</td>
</tr>
<tr>
<td>Corn Sweeteners</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>Wheat Flour</td>
<td>217</td>
<td>177</td>
<td>136</td>
<td>113</td>
<td>123</td>
</tr>
<tr>
<td>Potatoes (farm fresh equiv.)</td>
<td>187</td>
<td>159</td>
<td>110</td>
<td>117</td>
<td>125</td>
</tr>
</tbody>
</table>

a. Except all dairy and potatoes.

SOURCES:


The Pessimistic Past - A Summary

The declining share of personal consumption expenditures spent on food by U.S. consumers and the long term decline in per capita consumption of aggregate pounds of food underscore the pessimistic outlook for domestic food consumption. Even more ominously, despite a 68 percent increase in U.S. population since 1947 (USDC, September 1975, p. 8; USDC, February 1987, p. 11), total real consumer expenditures for the farm value of U.S.-origin food have exhibited no long-term upward trend (Figure 2).

A More Optimistic Future?

Although changes in food technology have improved the quality of food and increased consumption of individual foods, they have not increased aggregate per capita consumption. However, this observation may change as lower calorie foods are developed.

While low-calorie sweeteners have been available for years, the pace at which low calorie foods are being developed and marketed appears to be increasing. Olestra, a fat substitute developed by Proctor and Gamble, has been submitted for Food and Drug Administration approval (Wall). If approved, it is initially expected to be used in cooking oils and similar products. Another fat substitute, Simplese, has been developed by NutraSweet. It has 1.5 calories per gram, compared with nine calories for fat. Because Simplese is made from natural ingredients (milk and egg white proteins), it does not require regulatory approval and may be on the market within the next 12 to 18 months. It will be used in ice cream, margarine, yogurt, and processed cheese, among other products. Last, the extra trimming of beef, such as the quarter-inch trim promoted by Kroger, is aimed at reducing both calories and cholesterol.
Figure 2. Real Expenditures on U.S. Farm Value of Food, U.S., 1947–1986.

Billion 1982 $ *, **

Year

* Expenditures deflated by GNP deflator.
** Excludes alcohol expenditures.

SOURCES:
The potential for low calorie foods appears substantial, given the widespread concern about weight-related health problems. For example, consumption of NutraSweet, an artificial low calorie sweetener, grew from nothing in 1980 to 11 pounds per capita in 1985 (Bunch, p. 33).

Of prime importance to the agricultural community is the effect of low calorie foods on consumption patterns, especially aggregate consumption. Importance of the aggregate effect is underscored by the fact that U.S. per capita caloric intake has essentially remained constant since 1909 despite the declining pounds of food consumed (Figure 3). Should daily per capita caloric intake continue to remain constant while the caloric value of individual foods declines, pounds of per capita food consumption would increase. The result could be a smaller domestic surplus and less of a need to support export expansion programs.

The evidence on the effect of low calorie foods on consumption is at best skimpy. Somewhat surprisingly, given the expected competitive relationship between artificial and caloric sweeteners, per capita consumption of caloric sweeteners increased 11 percent since 1980 despite the substantial increase in consumption of NutraSweet. Furthermore, observation of human behavior suggests a Diet Coke-Big Mac theory: the calories contained in the Big Mac are somehow "nullified" when the sandwich is eaten with a Diet Coke, making it easier for the high-calorie-food lovers to soothe their guilty conscience and continue to eat what they like.

In conclusion, future U.S. domestic consumption of food may continue its recent trend of growing only at the rate of population growth. But, per capita consumption may be on the verge of substantial growth as "lite" foods become the norm rather than the exception. Major changes in
fundamental structural supply and demand components are rare but do occur. Given the importance of and the potential for low calorie foods, it is in agriculture's best interest to conduct research into the consumption effects of lite foods.
Figure 3. Daily Per Capita Consumption of Calories, U.S., 1909-1985.

SOURCES:
Food Consumption, Prices, and Expenditures, 1960-80.
References


