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Food Price Inflation: Causes and Impacts

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Summary

U.S. food prices rose 4% in 2007 and are expected to gain 3.5% to 4.5% in 2008. Higher farm commodity prices and energy costs are the leading factors behind higher food prices. Farm commodity prices have surged because (1) demand for corn for ethanol is competing with food and feed for acreage; (2) global food grain and oilseed supplies are low due to poor harvests; (3) the weak dollar has increased U.S. exports; (4) rising incomes in large, rapidly emerging economies have changed eating habits; and (5) input costs have increased. Higher energy costs increase transportation, processing, and retail costs.

Although the cost of commodities such as corn or wheat are a small part of the final retail price of most food products, they have risen enough to have an impact on retail prices. Generally, price changes at the farm level have a diminished impact on retail prices, especially for highly processed products.

The impact of higher food prices on U.S. households varies according to income. Lower-income households spend a greater portion of their income on food and feel price hikes more acutely than high-income families. Higher food costs impact domestic food assistance efforts in numerous ways depending on whether benefits are indexed, enrollments are limited, or additional funds are made available. Higher food and transportation costs also reduce the impact of U.S. contributions of food aid under current budget constraints.

Introduction

U.S. food prices are increasing. According to USDA, the Consumer Price Index (CPI) for "all food" increased 4% in 2007, the largest annual jump since 1990. In 2008,

this trend is expected to continue: the "all food" CPI is forecast to increase 3.5% to 4.5%.[1] This rapid inflation follows an extended period of stable food prices. From 1987 through 2007, food prices increased an average of 2.7% per year, excluding the drought years of 1989 and 1990.[2] During 2005 and 2006, food prices rose 2.4%. This report examines the cause of food price increases and evaluates their impacts on U.S. consumers.

Key Factors Behind Higher Commodity Prices

Robust Domestic Demand. Corn, soybean, and wheat prices all reached 10-year highs during the 2006-2007 crop year. High prices for corn reflected increased use for ethanol (22% of the 2007 crop) and strong exports. High corn prices in turn encouraged growers to move acres from wheat and soybeans into corn, contributing to tight supplies and higher prices for those crops. U.S. farm prices in 2007 for corn are estimated at $3.75 to $4.00 per bushel, compared with $2.00 in 2005; soybean prices are estimated at $10.00 to $10.80 per bushel, up from $5.66 in 2005; and wheat prices are estimated at $6.50 to $6.80 per bushel, up from $3.42 in 2005.[3]

Global Stocks Are at Low Levels. Globally, stocks of corn, wheat, and soybeans are at historically low levels. Drought in Australia and Eastern Europe and poor weather in Canada, Western Europe, and the Ukraine have reduced available quantities. With world stocks for wheat at a 30-year low,[4] buyers are turning to the U.S. for supplies.

Global Consumption Patterns Are Changing. Higher incomes are boosting demand for processed foods and meat in countries such as India and China. These shifts require more feed grains and edible oil. Even in low-income countries of sub-Saharan Africa, Asia, and Latin America, the vegetable oil share of diets has risen as processed food consumption rises. In China, consumption of meats, other livestock products, and fruits has increased while consumption of grain-based foods (such as bread) has slipped.[5] Improving food distribution systems are altering Chinese food preferences by introducing non-local foods. In India, per capita consumption of grains has fallen, while that of animal products, edible oils, vegetables and fruits has increased.[6] Better food distribution systems are altering Chinese food preferences by introducing non-local foods.

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[1] "Food CPI, Prices, and Expenditures Briefing Room," U.S. Department of Agriculture (USDA) Economic Research Service (ERS), at [http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/consumerpriceindex.htm].

[2] USDA/ERS, *Amber Waves*, "Corn Prices Near Record High," by Ephraim Leibtag, February 2008.

[3] U.S. Department of Agriculture, "World Agricultural Supply and Demand Estimates," March 11, 2008.

[4] For more information, see CRS Report RS22824, *High Wheat Prices: What are the Issues?*

[5] Center for Agriculture and Rural Development, "Changing Diets in China's Cities: Empirical Fact or Urban Legend?" by Fexgzia Dong and Frank H. Fuller, at [http://www.card.iastate.edu/publications/synopsis.aspx?id=1031].

[6] USDA/ERS, *Amber Waves*, "Rising Food Prices Intensify Food Insecurity in Developing Countries," by Stacy Rosen and Shahla Shapouri, February 2008.

Weak Dollar Boosts Demand for U.S. Exports. As the dollar depreciates against foreign currencies, U.S. exports become more competitive, boosting demand and prices. The dollar, adjusted for relative inflation rates, is expected to depreciate 7% against the euro, 6% against the Chinese yuan, and 8% against the Brazilian real in 2008.[7] The exchange rate is an important determinant of agricultural trade. The depreciation of the U.S. dollar since 2002 has helped improve U.S. agricultural export performance. According to the U.S. Department of Agriculture's (USDA's) Economic Research Service (ERS), the dollar is forecast to be up 2% versus the yen, unchanged against the Canadian dollar, down 2% against the Mexican peso, and down 6% against the Argentine peso in 2008.

How Do Higher Commodity Prices Impact Consumers?

As commodity prices rise, food prices follow, but to a lesser extent. On average, about 20 cents of each dollar spent on food is the farm share — the retail cost less the value-added after the product leaves the farm and moves along the marketing chain to the retail outlet.[8] In less processed foods, the farm component of the final product is larger and changes in the farm price have a greater impact at the retail level. For instance, eggs, and fresh fruits and vegetables undergo minimal processing after they leave the farm — they are consumed in essentially their original form. The retail value of such products tends to have a large farm component and changes at the farm level have a greater impact on the consumer. On the other hand, in highly processed products, such as breakfast cereal, the corn, wheat, or rice used is completely transformed and the final product bears little resemblance to the original commodity. An 18-ounce box of corn flakes contained about 3.3 cents worth of corn in 2006.[9] Higher corn prices in 2007 increased the corn share to 4.9 cents. This is a small part of the retail value of a box of corn flakes. Most of the retail price represents packaging, processing, advertising, transportation, profit, and other costs.

Energy Costs

Energy costs affect all levels of the food production sector. Recent record crude oil prices in excess of $110 per barrel affect costs throughout the marketing chain.[10] Producers spend more for fertilizer (for which natural gas is a major input), crop drying, and transportation — raising production costs. At the processing, wholesale, and retail levels, the cost of transportation and operating packing houses, manufacturing plants, and retail stores has increased. Some of these costs are passed on to consumers in the form of higher prices. In addition, high petroleum prices increase the competitiveness of ethanol, further boosting demand for corn.

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[7] USDA/ERS, "Outlook for U.S. Agricultural Trade," February 21, 2008.

[8] USDA/ERS, "Price Spreads from Farm to Consumer," by Howard Elitzak, at [http://www.ers.usda.gov/Data/FarmToConsumer/Data/marketingbiltable1.htm].

[9] USDA/ERS, *Amber Waves*, "Corn Prices Near Record High," by Ephriam Leibtag, February 2008.

[10] West Texas Intermediate (WTI), a crude oil price traded at Cushing, OK, reached $110 per barrel for the first time on March 13, 2008.

Food Price Changes Vary by Food Type

Meat, Poultry, Dairy, and Eggs. The CPI for all meats advanced 3.3% during 2007.[11] Beef increased 4.4%, pork 2%, broilers 5.2%, and eggs 29.2%, and dairy products advanced 7.4% in 2007. The farm share of these products is large compared with other foods, so changes at the farm level are passed, to a greater extent, to the consumer. In many cases, higher feed and energy costs were behind these increases. Strong export demand — spurred by the weak dollar — and reduced flocks played a role in the price hikes for poultry and eggs. The CPI for meats is forecast to increase by 1.5% to 2.5% in 2008. Compared with other food categories, these high-value items also account for a large share (11.1%) of the average consumer's food budget.

Fruits and Vegetables. Prices for fruits and vegetables gained 3.8% in 2007 and are forecast to increase 3% to 4% in 2008. Production shortfalls affected some varieties, especially bananas, the largest by volume. Supplies of oranges were strong, offsetting other declines. Energy costs were a large factor in higher fruit and vegetable price increases. Fruits and vegetables account for 8.4 cents of the consumer food dollar.

Cereals and Bakery Products. The CPI for these items advanced 4.4% in 2007 and is projected to rise 6.5% to 7.5% next year. Tight global wheat supplies and acreage reductions to promote ethanol production have caused a spike in wheat prices. However shifts in wheat prices have a relatively small impact on grocery store prices because the farm share of these products is small. Prices for these product are affected more by marketing factors such as transportation, labor, and energy costs than the cost of basic inputs.

Oilseeds and Related Products. Low stocks and strong export demand for soybeans are reflected in the CPI for these products, which gained 2.9% in 2007. While much of this category is supplied by soybeans, substitutes exist and will help moderate increases. In 2008, the CPI is set to rise 7% to 8% due to continued strong export demand from countries where changing diets require more vegetable oil.

Impact on Low-Income Households

Although U.S. consumers generally spend a smaller share of their income on food compared with many other countries, that share varies widely across income levels. Overall, U.S. households spend 12.6% of their income on food,[12] so changes in the price of food have to be large to affect their total budget. However, the picture is vastly different for low-income households. In 2006, households with incomes in the lowest reported income category spent 17.1% of their income on food. Households with incomes greater than $70,000 spent 11.3% of their income on food. When food prices rise, families with lower incomes feel the pinch more acutely since food expenditures make up a larger share of their total expenditures. Also, higher-income families can shift food

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[11] Food CPI's for 2007 and 2008 are from the USDA/ERS *Food CPI, Prices, and Expenditures Briefing Room*, at [http://www.ers.usda.gov/briefing/cpifoodandexpenditures/].

[12] U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey*, "Table 46, Income Before Taxes," at [http://stats.bls.gov/cex/].

consumption to the home from restaurants, saving money without reducing consumption. A 4% to 5% increase in food expenditures has a significant impact on purchasing power for low-income families.

Federal Spending for Domestic Food Assistance Programs

Food price inflation increases spending on domestic assistance efforts. Increasing prices encourage those who are eligible but not participating to enroll. Increasing prices translate directly into benefit payments and per-meal subsidies for entitlement programs in which benefits are indexed to food-price inflation (e.g., food stamps, school meal programs). Increasing prices place pressure on appropriators to provide more funding to support caseloads for discretionary programs like the Special Supplemental Nutrition Program for Women, Infants, and Children (the WIC program).

Food Stamps. The Food Stamp program is the largest of the federally supported domestic food assistance programs. Its benefits are indexed annually for changes in the cost of USDA's least costly food plan, the "Thrifty Food Plan" (TFP). For a number of years and well into 2006, annual increases in the TFP typically ranged between 1.5% and 2.5%, with a few exceptions. However, starting in late 2006, food prices (as reflected in the cost of items in the TFP) began to increase at a faster rate. The last benefit increase, effective October 2007, was 4.6%. As a result, the average monthly benefit will be $6 per person higher in FY2008.

The impact of benefit increases on food stamp costs also depends on participation. For FY2008, the benefit increase noted above (combined with estimated growth in enrollment) yields a likely $2 billion cost attributable to adjustments for food price increases (out of total spending of $36.7 billion), about double the $1 billion that would have occurred based on pre-2007 price increases. Costs are expected to increase even more in FY2009.

Child Nutrition. Federal payments for lunches and breakfasts served to children in participating school meal programs are the second largest federal commitment to domestic food assistance, about $11 billion per year. These per-meal subsidies — now ranging as high as $2.83 a meal, including the value of USDA commodity donations — are indexed every July to food-price changes reflected in the "Food Away From Home" component of the CPI over the 12-month period ending each May.

Indexed maximum subsidy rates (those paid for the majority of school meals that are served free or at a reduced price to children from lower-income families) have increased by some 25 cents a meal between the 2005-2006 school year and the current 2007-2008 school year. The annual increase in subsidies has gone from 2.9% for the 2005-2006 school year to 3.3% for the 2007-2008 school year, increasing federal support by about $300 million above spending if earlier food price increases had prevailed. According to ERS, this trend is expected to continue into FY2009.

The WIC Program. Unlike food stamps and child nutrition programs, the WIC program is discretionary. Spending depends on annual appropriations, based largely on estimates of participation and the cost of the food packages that are purchased with WIC vouchers. The value of benefits is not indexed, per se. Rather, WIC vouchers are redeemable at whatever the participating retailer charges for the items covered by the

vouchers, which differ according to the type of recipient (e.g., pregnant mother, infant, child). As a result, the cost of WIC vouchers reflect food price changes without the time lag built into other nutrition programs like food stamps. Just as important, WIC vouchers are highly specific as to the food items they cover and have a relatively heavy emphasis on certain types of food — dairy items and infant formula being a major component.

In recent years, the cost of WIC food vouchers has varied a great deal, largely because of changes in dairy-related food prices. The average per-participant monthly cost of vouchers has ranged from $34.80 in FY2002 to $39.15 in FY2007. However the annual percentage increase has been very small for some years (1% or less for FY2003, FY2005, and FY2006) and more substantial for other years (6.6% for FY2004 and 5.6% for FY2007). Most recently, monthly per-participant WIC food costs averaged $42.50 for the first three months of FY2008. Given this significant volatility, it is difficult to produce specific estimates of the effect of food price inflation on WIC program costs. However, the ERS forecasts of increases in egg and dairy product prices in the 2% to 4% range in 2008 indicate that relatively high WIC food costs are likely in the near term.

Foreign Food Aid

Higher commodity and food prices reduce our ability to provide food aid to other countries without additional appropriations. Food aid usually takes the form of basic food grains such as wheat, sorghum, and corn, and vegetable oil — commodities critical to developing-country diets. Since there is very little value added for these commodities, shifts in prices translate directly into higher prices for food-insecure countries or reduced food aid contributions per dollar spent. Also, higher energy costs have increased shipping costs for both food purchases and food aid. Unlike some domestic nutrition programs, foreign food aid is not adjusted to account for changing costs. After a long period of declining food costs, developing countries are facing increased food import bills — for some countries as high as 25% in 2007.[13]

The U.S. Agency for International Development (USAID) has indicated that rising food and fuel prices would result in a significant reduction in emergency food aid. According to press reports in March 2008, USAID expects a $200 million shortfall in funding to meet emergency food aid needs. For FY2008, Congress appropriated $1.2 billion for P.L. 480 food aid, the same as FY2007. For FY2009, the President's budget again requested $1.2 billion. In six out of ten years since 1999, supplemental funding for P.L. 480 Title II food aid has been appropriated.

Last year, the U.N. World Food Program (WFP) estimated it would need $2.9 billion to cover 2008 food aid needs. Recent commodity, energy, and food cost increases have boosted this estimate to $3.4 billion. According to the WFP, the current price increases force the world's poorest people to spend a larger proportion of their income on food.

[13] USDA/ERS, Rising Food Prices Intensify Food Insecurity in Developing Countries," *Amber Waves*, February 2008.