

# Rising Commodity Prices and their Impact upon US Food Inflation



Advanced **Economic** Solutions  
[www.advancedeconomicolutions.com](http://www.advancedeconomicolutions.com)

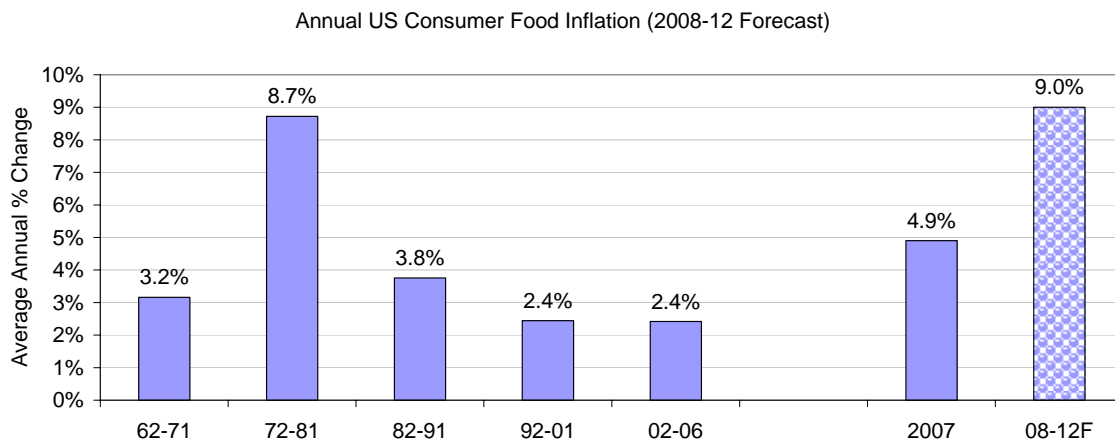
June 2008

# Rising Commodity Prices and their Impact upon US Food Inflation

## Summary

Rising agricultural commodity prices are contributing to the highest rates of food inflation in decades. The underlying driver of the higher commodity prices in past years (2002-2006) included global economic expansion, rising energy prices, as well as the weak dollar. While these price drivers remain intact today, the rapid expansion in the use of corn to produce ethanol is currently the most significant factor driving corn and other agricultural commodity prices to record levels.

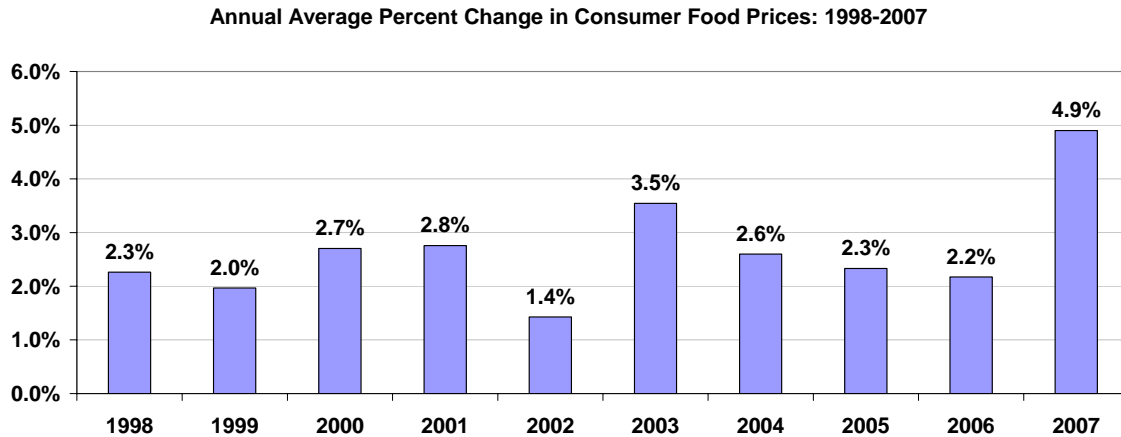
The rise in commodity prices, led by corn, is having a direct impact on consumer food inflation. Since the early 80s, increases in commodity prices have typically been short-term and absorbed by food manufacturers to avoid loss of market share. This contrasts with the current environment of sustained increases in commodity prices. As a result of the sharp and sustained increase in input costs, Advanced Economic Solutions estimates that food inflation will rise to by an average of 9 percent annually between 2008 and 2012, as the rising costs are passed on to consumers.



As was experienced during the 1970s, food price inflation rates are moving higher during the next five years as a result of sharply higher commodity input prices. While the precise yearly levels of food inflation are difficult to predict, the rising commodity prices clearly suggest that food prices will rise more dramatically during the next five years.

## Recent History of Food Inflation

Food price inflation has been relatively benign for most of the past 25 years, particularly since 1998. Between 1998 and 2006, food price inflation at the consumer level (CPI-Food<sup>1</sup>) has averaged 2.3 percent, ranging from +1.4 percent (2002) to +3.5 percent (2003).



For an extended period of time, inflation in food costs has, for the most part, been an after-thought for manufacturers, restaurants, consumers, and policy-makers. The low rates of food inflation have been the result of several factors. However, an important feature has been the lack of any sustained increase in underlying commodity prices. While price spikes did occur (due to weather or government policy), increased costs were largely absorbed by food manufacturers.

As a result, over the past 25 years (and especially during the past 10 years), the U.S. consumer has been shielded from most short-term spikes in commodity prices -- manufacturers and restaurants have been willing to absorb any short-term increases in commodity costs, rather than risk loss of market share to competitors. With the expectation that commodity prices would retreat from any historically high levels, the increase in costs have not, until recently, translated into higher consumer food prices.

Agricultural commodity prices, led by corn, began their dramatic rise during the last half of 2006. Subsequently, the impact of a sustained increase in commodity prices translated into higher food price inflation rates in 2007. During 2007, the consumer price index for food rose by 4.9% (year-over-year), while the wholesale costs (the producer price index for food) rose by 7.4 percent.

---

<sup>1</sup> The Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. Each month, data collectors record the prices of about 80,000 items. For food, the CPI collects data on the price of cereal, milk, coffee, proteins, etc. The CPI-Food represents 15 percent of the overall CPI.

Food inflation rates have continued to climb in early 2008, and are now approaching levels that have not been reached since 1980. With continued cost pressures (due to the sharp rise in underlying commodity prices), the U.S. food industry has begun raising prices to offset the sharp and sustained increase in input costs. The table below shows the current price of a number of inputs that have moved sharply higher:

	<u>May 2008</u>	<u>Nov 2006</u>	<u>% Change</u>	<u>L-T Price</u>	<u>% Change</u>
Corn (\$/Bu)	\$5.92	\$3.43	+73%	\$2.50	+137%
Wheat (\$/Bu)	\$7.59	\$5.09	+49%	\$3.60	+111%
Soyoil (\$/Lb)	\$0.60	\$0.28	+114%	\$0.23	+160%
Rice (\$/CWT)	\$18.50	\$12.60	+47%	\$7.60	+143%
Cheese (\$/Lb)	\$2.13	\$1.41	+51%	\$1.41	+51%

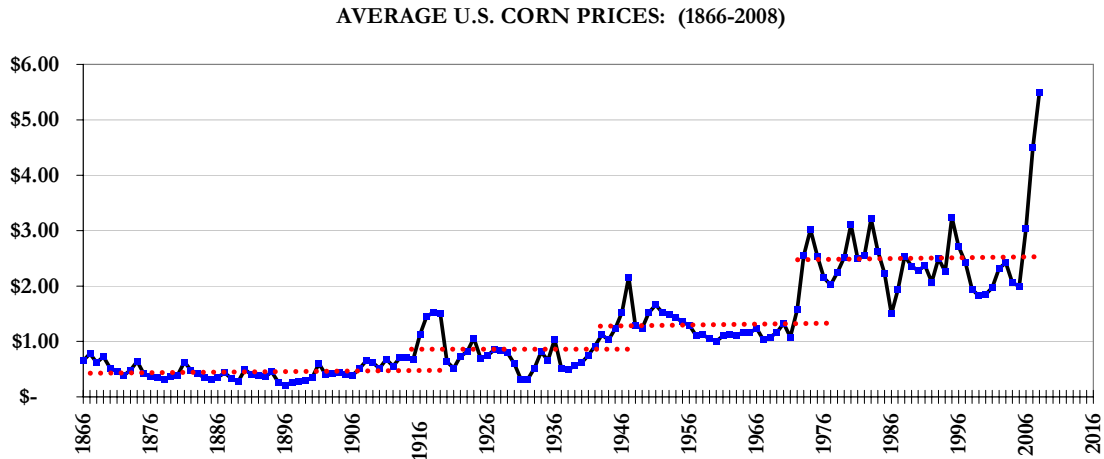
Corn is an underlying driver of most agricultural input prices. For wheat, rice and soyoil, corn drives these prices higher by “stealing” acreage to meet growing corn demand. For milk and proteins, corn is the primary feed used, and thus, has a direct impact on the cost of production of those items. “Corn is King,” and when demand for corn surges (due largely to rising ethanol production) corn prices move higher, which suggests that other inputs are likely to follow.

The long period of low food price inflation rates prior to 2007 has passed. With the dramatic rise in food input costs, 2007 is likely the first of a multi-year period of higher rates of inflation for food manufacturers, grocery stores, restaurants and consumers. Through April 2008, double-digit gains in consumer prices for several items have been registered for bread (+14%), vegoil (+12%), rice (+12%), dairy (+12%) and eggs (+30%). The upward price pressure on the consumer price of proteins has not yet evolved, but is likely to be a headline story in 2009.

The current environment mirrors the experience of the 1970s, when the U.S. had a dramatic shift from low rates of food inflation to an extended period of higher rates of food inflation. While many would like to suggest the consumer impact will be minimal, a look back at the 1970s tells us that this is probably no more than wishful thinking.

## The Global Relevance of Corn

Corn prices<sup>2</sup> have averaged roughly \$2.40 over the past 32 years (through the 2005/06 crop year), ranging from a low of \$1.61 (1986/87) to \$3.68 (1995/96). As the long-term chart of corn prices below shows, the price of commodities tend to be “mean-reverting” for several decades, before vaulting to a new level. As discussed in the previous section, the drivers shifting the prices to a new plateau are broad-based and reflect the impact of big-picture macro-economic drivers.



Higher corn prices are critical to the outlook for other commodities and, ultimately, to food inflation. Among row crops, corn dominates in terms of the total bushels produced. Of the major crops, corn typically accounts for two-thirds of all bushels produced. The significance here is that when corn prices are “attractive,” higher corn acreage leads to a decline in the area planted to other crops, most notably soybeans. The dramatic surge in corn prices over the past year has led soybean prices over \$10, while wheat prices (with added impact from weather problems) have moved to record levels, as well.

The other significant impact of increased corn prices is upon the livestock sector. Corn is the primary feed source – among major sources of energy in feed rations, corn accounts for about 85 percent of the total utilized to produce beef, pork, poultry, dairy products, and eggs. Since corn typically represents a large share of the total cost of production, livestock output tends to (over time) respond to rising or declining corn prices. As was the case during the 70s, it is not possible to have a dramatic increase in the cost of corn without eventually impacting livestock margins, production and ultimately livestock prices.

History is repeating itself, as corn and other food input costs have permanently moved to a new plateau. The system is currently being shocked, with the price of corn and other agricultural commodities moving sharply higher to attract more acreage (and to some extent reducing demand). As adequate acreage is found to meet the growing demand for crops and competition for acreage, the price of corn and other commodities will find a new (but much higher) “mean-

<sup>2</sup> USDA/NASS average farm price

reverting level” around which prices will stabilize. Again, this not only includes grains competing for acreage (corn, wheat, soybeans), but other commodities that are produced using corn as a primary feed (such as milk, proteins, and eggs).

The primary driver of the move in corn prices to a new plateau was global economic growth during 2002-06, but has now transitioned to being driven by the use of corn to produce ethanol in the United States. Corn used to produce ethanol is forecast by the USDA to total 4.0 billion bushels during the 2008/09 crop year, up 33% from the previous year and almost doubling in just two years. Ethanol use of corn will account for more than 30% of total usage, and has a clear impact on the US corn supply/demand balance in crowding out other uses of corn and “stealing” acreage from other crops. Corn use for ethanol is also clearly having a deleterious impact on global availability of corn and other grains.

Global growth in grain demand has accelerated since 2002. Between 2002 and 2006, average annual world demand for coarse grains (corn, sorghum, barley and oats) has risen at an average of 3.0%<sup>3</sup>. Much of this is attributable to economic growth and improving living standards, especially in developing countries. Use of corn to produce ethanol in the US increased rapidly during this period, but only accounted for 25% of the growth in global coarse grain demand.

The growth in coarse grain demand of 3.0% during 2002-06 exceeds the long-run annual growth rate for yields during the past twenty years (1.6%) as well as during the past 40 years (1.9%). Three predictable market dynamics began to kick in during this period – declining world stocks of grain, greater competition between crops for acreage, and increases in prices to attract more acreage. A fourth dynamic has been the imposition of restrictions on exports by several countries<sup>4</sup> to fight food inflation within their own borders. These export restrictions have reduced the exportable supply of grains, and accelerated the rise in prices, especially for rice and wheat.

However during the most recent two years, 2006-08, corn use for ethanol will be a much more influential factor in the global availability of coarse grains, while the other drivers of demand will play a more minor role. The USDA estimates world coarse grain demand will continue to be very strong, rising at an annual average of 3.2%, but during this two-year period corn used to produce ethanol in the US will account for 75% of the growth in global demand for coarse grains. Only 25% of the growth in global demand during 2006-08 will be the result of increased use of coarse grains for human consumption, essentially halting the growth in coarse grain consumption on a world-wide basis.

The impact of ethanol upon US and world grain markets since 2006 has been dramatic, and it is important to put some perspective on the influence of ethanol upon world grain availability and prices.

- As mentioned above, US corn use for ethanol will account for 75% of the growth in world coarse grain demand, but it also is noteworthy that US corn for ethanol will account for 50% of the growth in demand for all grains (coarse grains, rice and wheat) between 2006 and 2008.

---

<sup>3</sup> USDA World Agricultural Supply/Demand Estimates

<sup>4</sup> Most notable have been Russian wheat, Indian and Thai rice and Chinese corn

- Global per capita consumption of grains (excluding US ethanol use) rose by nearly 7% between 2002 and 2007, but will decline by 2.5% during 2008. If all the corn being used to produce ethanol in 2008 was instead used for food, global per capita consumption of coarse grains would be sustained at the record 2007 levels.
- With a slower growth in corn ethanol during 2006 and 2008 (suppose 50% rather than 100%), US ending stocks of corn would be closer to 2 billion bushels rather than less than 1 billion bushels.
- Without the rise in ethanol use between 2007 and 2008, corn acreage would decline and be replaced with larger acreage of other food crops such as wheat, soybeans and rice.
- The US has suffered a decline in corn yields of 10% or more in roughly 1 out of 5 years<sup>5</sup>, and today there is no stocks buffer (in the US or globally) to mitigate the impact of a yield shortfall.

Corn prices (average farm) during 2008-12 are forecast to average \$5.25, more than double the 2002-06 average of \$2.37. This forecast is largely based on an estimate of the price level needed to meet US and world coarse grain demand and attract more acreage over the next five years, given “average” weather. Accurately forecasting the average price level for corn and other food inputs is extremely difficult, and subject to the vagaries of annual weather events, changes in policy directives, as well as unexpected increases or decreases in demand. This is a sizable increase in prices from where prices have traded in the past, but the forecast is conservative in comparison with other long-term forecasts. The midpoint of USDA’s latest estimate of the corn prices in 2008/09 is \$5.50<sup>6</sup>, while corn futures prices through December 2010 were trading between \$6.51 and \$7.01 (as of early June)<sup>7</sup>.

To compete for acreage, the price of other grains and oilseeds will also need to rise by nearly 50 percent in the coming years. Wheat futures are forecast to average \$6.50, while the price of rice is forecast to average over \$12. Soybean and soyoil prices are also forecast to rise substantially (\$11.00 and \$.45, respectively) during 2008-12.

Due to the sharp increase in feed costs (both corn and soymeal), the price of proteins and dairy products is also expected to increase dramatically. Ultimately, the producers of these food inputs will require a higher price in order to offset the increased cost of feed. With the possible exception of fruits and vegetables, rising corn prices means higher prices for most food inputs, including both grains and livestock. The timing and extent to which these dramatic increases in food input costs are passed on to consumers will be the ultimate driver of consumer food inflation during the next five years.

---

<sup>5</sup> USDA NASS

<sup>6</sup> USDA World Agricultural Supply and Demand Estimates, May 2008

<sup>7</sup> Chicago Mercantile Exchange closing prices, June 6, 2008

## The Relationship between Food Input Costs and Consumer Prices

Because of the competitive nature of the U.S. food system, the sustained rise in input costs we are experiencing will be passed on to consumers in the form of higher prices. As has been observed during the past 18 months, a sustained rise in food inputs will result in higher rates of food price inflation in the coming years, as the impact of higher costs is passed on to consumers.

The impact of rising food input costs will vary dramatically across the different products consumed. Similar to USDA analysis, this study employs a mix of USDA farm prices to reflect input costs, weighted by the Bureau of Labor Statistics index of finished goods prices. Where farm prices are not applicable (e.g., vegoil), this study uses wholesale prices to represent the input cost.

This study calculates that input costs during 2008-12 will represent 29.9% of the retail price of food. By comparison, the USDA Economic Research Service estimates that the cost of food inputs currently represent 19 percent of the overall share of each dollar a consumer spends on food<sup>8</sup>. During the early 1970s, the cost of food inputs as a share of consumer expenditures increased by 4-6 points as a result of rising commodity prices – a similar increase is assumed during 2008-12 due to the sharp increase in input prices. Additionally this study uses a higher value for the input costs as a share of retail prices (including cereal/bakery items), consistent with private trade estimates compiled for this study.

The table below shows the assumption used to derive the impact of higher input costs upon consumer prices<sup>9</sup>:

	<u>Share of At-Home Food Outlays</u>	<u>Input Costs as a % of Retail Price</u>
Cereal/Bakery Items	13.1%	11.0%
Beef	7.0%	61.0%
Pork	4.6%	47.0%
Chicken	4.1%	51.0%
Dairy Products	10.8%	42.0%
Eggs	1.1%	70.0%
Fruits/Vegetables	17.3%	24.0%
Sweets	3.7%	34.0%
Fats/Oils	2.5%	24.0%
<u>All Other</u>	<u>35.9%</u>	<u>24.0%</u>
<b>TOTAL</b>	<b>100.0%</b>	<b>29.9% (weighted average)</b>

<sup>8</sup> USDA Economic Research Service

<sup>9</sup> Bureau of Labor Statistics Consumer Expenditure Survey, Advanced Economic Solutions, private trade estimates

## **Conclusions and Forecasts for Commodity Prices and Food Inflation Rates: 2008-2012**

The prices of a broad range of food inputs have moved sharply higher since late 2006, with corn being a primary catalyst for the increases. Corn futures prices averaged \$3.70 per bushel during 2007, and have risen to over \$6 in 2008. The most important driver in the grain markets over the past year has been the surge in corn used to produce ethanol, doubling over the past two years and accounting for 31% of U.S. corn demand in 2008/09.

The strong demand for corn will continue in response to mandated increases in the use of corn to produce ethanol. Consequently corn prices are likely to remain well above previous "normal" levels in the coming years. During 2008-12, corn futures prices are forecast to average \$5.25, roughly double the 2002-06 average. There are many dynamics that could alter this forecast, most notably the weather. A short-fall in US corn yields during any of the next five years has the potential to push corn prices to \$7 or higher.

The price of corn will directly impact nearly all other food input prices during the next five years<sup>10</sup>. Competition for a limited amount of acreage will result in other grain and oilseed prices rising along with corn. As with corn, weather events (in the U.S. and around the world) will be the primary unknown affecting prices of other grains and oilseeds, and has the potential to lead to a spike in prices. During 2008-12, wheat prices are projected to average \$6.50 per bushel, soybeans \$11 per bushel, and rice over \$12/hundredweight.

For dairy, protein, and egg markets, the price patterns are expected to be responsive to the higher feed costs, but the timing and extent of producers' response to higher feed costs is less clear. The longer cycles of expansion and contraction for dairy, protein, and egg producers will likely create more volatility in producers' margins, but ultimately prices will move higher to compensate for increases in feed costs. This includes significant increases of 79-86% in the price of eggs, pork, chicken, beef and milk.

---

<sup>10</sup> The notable exception is the price of fruits and vegetables, which have historically had little correlation with the price of corn or other food inputs.

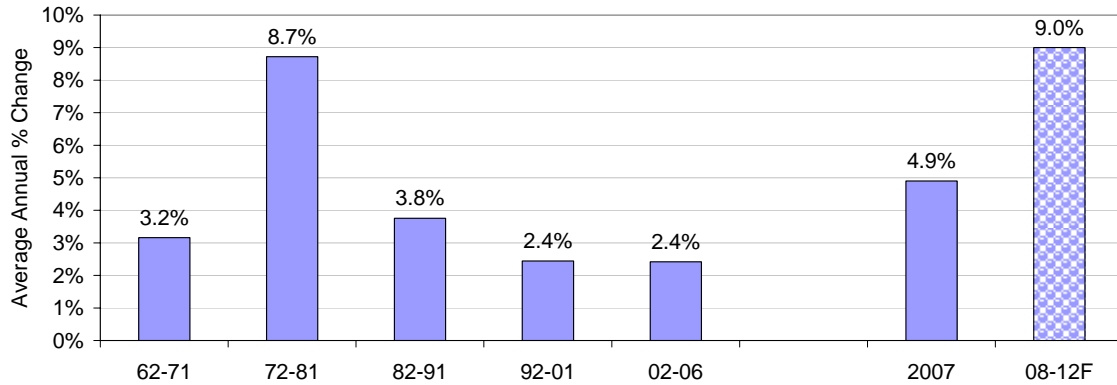
<b>Commodity Price Outlook: 2008-12</b>						
		1990-2001	2002-06 <sup>r</sup>	2007	2008-12	% Change 08-12 vs. 02-06
<b>Corn</b>	\$/Bu	2.52	2.37	3.76	5.25	121%
<b>Wheat</b>	\$/Bu	3.36	3.46	6.38	6.50	88%
<b>Rice</b>	\$/CWT	7.88	7.00	10.57	12.00	71%
<b>Soyoil</b>	\$/Lb	0.22	0.23	0.36	0.45	95%
<b>Milk</b>	\$/CWT	12.80	12.60	18.04	22.80	81%
<b>Eggs</b>	\$/Dzn	0.81	0.79	1.17	1.45	84%
<b>Pork</b>	\$/Lb	0.58	0.59	0.68	1.10	86%
<b>Chicken</b>	\$/Lb	0.62	0.61	0.71	1.10	80%
<b>Beef</b>	\$/Lb	1.17	1.40	1.53	2.50	79%
Source: Advanced Economic Solutions, Dept of Energy, USDA, Uerner-Barry						

Commodity prices will be supported by a number of fundamentals, including strong global economic growth, tight US and world grains and oilseed stocks, and a continued battle for acreage among the major crops. However under current policy, the largest driver of demand growth (and thus higher prices) will be the use of corn to produce ethanol.

Changes in US ethanol mandates would alter the outlook, and thus reduce the upward pressure on food inflation. The other key unknown for food inflation forecasts in the coming years will be weather – particularly its impact upon yields for the US corn, wheat, and soybean crops. However a yield shortfall in any year would push these 50% or more above these projected average levels. The result would be consumer food inflation exceeding 10% for one or more years.

The higher price of inputs, as well as increases due to non-commodity related factors, will ultimately be passed on to consumers. During 2008-12, this analysis utilizes the BLS estimate of the share of consumer outlays for the different foods inputs. Based upon the higher food input prices, food inflation at the consumer level will accelerate to an average of 9.0% during 2008-12. This compares to an average rate of consumer food inflation of 2.4% during 2002-06, and an increase of 4.9% during 2007.

Annual US Consumer Food Inflation (2008-12 Forecast)



An overall rate of food inflation of 9.0 percent is forecast for 2008-12, however price increases for different foods will vary significantly. The variation reflects different levels of increase in the price of the underlying food inputs, as well as how closely the input costs are tied to the consumer price.

Much as we observed during the 1970s, food inflation rates are moving higher during the next five years as a result of sharply higher commodity input prices. While the precise yearly levels of food inflation are difficult to predict, the rising commodity prices clearly suggest that food prices will be rising more dramatically during the next five years.

## Appendix Table 1. Annual Commodity Prices, 1960-2007

Year	Com	Wheat	Rice	Soybeans	Milk	Table Egg	Broilers	Hogs	Cattle
	Farm Price Mktg Yr <sup>1</sup>	Farm Price Mktg Yr <sup>2</sup>	Farm Price Mktg Yr <sup>3</sup>	Farm Price Mktg Yr <sup>4</sup>	Farm Price Cal Yr	Farm Price Cal Yr	12-City Ave Cal Yr	Live Equiv. Cal Yr	Neb Steers Cal Yr
	\$/Bu	\$/Bu	\$/Bu	\$/Bu	\$/CWT	Cents/Lb.	Cents/Lb.	Cents/Lb.	Cents/Lb.
1960	1.00	1.74	4.55	2.43	4.18	36.18	28.66		
1961	1.10	1.83	5.14	2.24	4.20	35.42	23.89		
1962	1.12	2.04	5.04	2.54	4.10	33.68	25.88		
1963	1.11	1.85	5.01	2.43	4.12	34.40	24.89	14.90	21.90
1964	1.17	1.37	4.90	2.63	4.17	33.72	24.20	14.80	19.90
1965	1.16	1.35	4.93	2.78	4.26	33.66	25.50	20.60	22.10
1966	1.24	1.63	4.95	2.65	4.84	39.07	26.01	22.80	24.00
1967	1.03	1.39	4.97	2.47	5.06	31.18	22.68	18.90	23.80
1968	1.08	1.24	5.00	2.39	5.29	34.07	24.03	18.50	25.00
1969	1.16	1.25	4.95	2.44	5.54	39.98	25.88	22.20	27.80
1970	1.33	1.33	5.17	2.90	5.72	37.68	22.89	22.50	29.32
1971	1.08	1.34	5.34	3.28	5.87	31.08	23.39	18.57	32.54
1972	1.57	1.76	6.73	6.49	6.09	31.63	24.24	26.85	35.72
1973	2.55	3.95	13.80	6.27	7.20	54.13	41.14	40.61	44.43
1974	3.02	4.09	11.20	5.85	8.34	52.96	37.03	35.51	42.12
1975	2.54	3.55	8.35	5.18	8.78	52.76	44.60	49.12	45.32
1976	2.15	2.73	7.02	7.14	9.66	58.83	39.31	43.83	39.29
1977	2.02	2.33	9.49	6.18	9.71	54.13	39.94	41.30	40.63
1978	2.25	2.97	8.16	6.92	10.58	52.78	46.35	48.46	53.01
1979	2.52	3.80	10.50	6.57	12.03	58.14	46.36	45.05	68.56
1980	3.11	3.99	12.80	7.57	13.05	56.65	49.06	42.49	67.64
1981	2.50	3.69	9.05	6.07	13.76	62.19	48.65	47.08	64.42
1982	2.55	3.45	7.91	5.71	13.59	58.49	46.41	58.78	65.34
1983	3.21	3.51	8.57	7.83	13.57	63.08	50.39	50.78	63.63
1984	2.63	3.39	8.04	5.84	13.45	70.28	55.55	51.91	66.79
1985	2.23	3.08	6.53	5.05	12.73	57.39	50.82	47.82	59.75
1986	1.50	2.42	3.75	4.78	12.52	61.20	56.90	54.46	59.25
1987	1.94	2.57	7.27	5.88	12.49	53.06	47.37	54.81	66.28
1988	2.54	3.72	6.83	7.42	12.22	53.32	56.30	46.07	71.19
1989	2.36	3.72	7.35	5.69	13.56	70.04	58.99	46.75	73.85
1990	2.28	2.61	6.70	5.74	13.68	70.42	54.77	57.75	78.56
1991	2.37	3.00	7.58	5.58	12.24	66.04	52.03	51.79	74.21
1992	2.07	3.24	5.89	5.56	13.09	56.39	52.57	44.87	75.35
1993	2.50	3.26	7.98	6.40	12.80	62.90	55.18	48.17	76.36
1994	2.26	3.45	6.78	5.48	12.97	60.88	55.71	42.00	68.84
1995	3.24	4.55	9.15	6.72	12.74	63.92	56.35	44.62	66.26
1996	2.71	4.30	9.96	7.35	14.88	75.96	61.25	56.53	65.05
1997	2.43	3.38	9.70	6.47	13.34	69.85	58.81	54.30	66.32
1998	1.94	2.65	8.89	4.93	15.50	66.48	63.01	34.72	61.47
1999	1.82	2.48	5.93	4.63	14.35	60.83	58.07	34.00	65.56
2000	1.85	2.62	5.61	4.54	12.31	63.48	56.16	44.69	69.65
2001	1.97	2.78	4.25	4.38	14.97	61.10	59.11	45.81	72.71
2002	2.32	3.56	4.49	5.53	12.11	60.65	55.52	34.91	67.04
2003	2.42	3.40	8.08	7.34	12.52	74.60	61.97	39.45	84.69
2004	2.06	3.40	7.33	5.74	16.04	69.75	74.12	52.50	84.75
2005	2.00	3.42	7.65	5.66	0.00	65.50	73.40	50.05	87.28
2006	3.04	3.46	9.96	6.34	12.88	72.00	64.40	47.26	85.41
2007	4.25	6.55	13.00	10.00	19.13	109.00	76.10	46.98	91.61

Source: USDA ERS

**Appendix Table 2. Annual Food Inflation Rates, 1960-2007**

YEAR	CPI-FOOD	CPI-FOOD	CPI-FOOD	CPI-FOOD	CPI-FOOD	CPI-FOOD	CPI-FOOD	PPI-FOOD
	Total	Meat, Poultry, Fish, Eggs	Fruits & Vegetables	Sugar and Sweets	Fats & Oils	Cereals & Bakery Items	Dairy Products	Total
1960	3.0		1.0	(0.1)		3.1	2.3	5.2
1961	(0.7)		(2.3)	(0.4)		1.3	0.3	(1.9)
1962	1.3		0.3	0.9		1.6	(1.7)	0.6
1963	2.0		9.2	14.8		0.3	1.1	(1.7)
1964	1.3		4.4	(4.0)		1.6	0.6	0.6
1965	3.5		(3.3)	(1.5)		1.3	0.6	9.3
1966	3.7	(1.0)	3.1	2.0		4.9	9.6	1.0
1967	1.8	1.5	4.5	2.7	(1.7)	(0.3)	1.5	-
1968	4.0	4.7	5.8	5.2	(1.1)	1.5	3.7	4.6
1969	7.2	12.7	4.6	3.9	1.5	3.8	4.1	8.1
1970	2.3	(3.1)	(1.6)	5.4	9.5	5.3	3.9	(2.5)
1971	4.6	3.9	12.7	2.2	6.6	1.0	2.2	6.3
1972	4.6	10.6	2.6	0.9	(2.1)	1.8	1.9	7.9
1973	20.1	27.3	14.2	13.6	6.9	27.8	22.6	21.9
1974	12.1	(1.9)	11.2	98.9	45.2	21.4	7.1	13.1
1975	6.7	14.5	7.0	(19.6)	(12.6)	(1.7)	6.6	5.7
1976	0.6	(8.1)	1.3	(5.9)	(4.6)	(1.6)	3.5	(2.5)
1977	7.8	3.5	9.6	12.8	10.7	5.1	3.2	6.8
1978	11.4	20.2	8.9	8.2	10.9	8.8	11.0	11.6
1979	10.3	8.6	10.3	6.2	7.1	10.2	10.4	7.7
1980	10.3	9.1	10.6	33.3	8.1	10.4	9.8	7.9
1981	4.4	(1.0)	8.8	(6.7)	3.7	5.6	3.1	1.6
1982	3.0	2.9	0.4	2.1	(0.9)	2.3	0.9	2.0
1983	2.4	(1.1)	5.0	1.7	7.6	3.2	0.8	2.2
1984	3.9	2.8	6.3	3.1	5.5	3.6	3.4	3.2
1985	2.7	1.5	4.6	2.0	(1.2)	3.0	(0.6)	0.5
1986	3.8	6.7	0.5	1.6	(1.4)	2.4	2.1	3.0
1987	3.3	1.1	12.5	0.6	1.7	3.5	1.7	(0.2)
1988	5.2	5.3	5.8	4.0	10.0	7.2	4.4	6.0
1989	5.5	6.7	4.1	3.3	2.6	6.4	10.3	5.3
1990	5.3	8.2	6.4	4.4	7.8	4.7	3.0	2.4
1991	1.8	(1.6)	4.2	3.5	(1.2)	3.5	0.7	(1.5)
1992	1.3	0.2	0.8	1.1	(0.6)	4.1	1.8	1.5
1993	2.9	3.6	6.4	1.0	0.8	3.6	0.9	2.2
1994	2.8	(0.5)	7.6	1.0	3.7	3.3	1.1	0.9
1995	2.1	4.0	(1.0)	2.9	2.4	3.2	2.6	1.8
1996	4.3	5.6	5.4	4.5	2.2	3.6	10.1	3.3
1997	1.5	(1.0)	2.5	2.2	(0.4)	1.5	(0.5)	(0.7)
1998	2.3	(0.6)	4.9	1.5	8.2	2.2	6.6	0.1
1999	1.9	1.8	1.5	1.4	(4.5)	2.1	2.3	0.9
2000	2.7	4.6	4.9	0.8	3.6	2.7	(0.2)	1.8
2001	2.8	3.4	(0.7)	1.8	4.6	2.5	5.7	1.8
2002	1.4	0.1	4.6	2.0	(2.5)	1.0	(2.1)	(0.8)
2003	3.6	11.5	3.2	1.2	3.4	2.9	3.4	7.7
2004	2.6	1.2	7.7	0.2	6.3	1.7	4.1	3.0
2005	2.3	1.4	0.6	4.1	(1.2)	0.9	1.8	1.6
2006	2.1	1.5	1.9	2.7	1.0	3.1	(1.2)	1.5
2007	5.4	5.6	0.8	2.7	4.1	4.7	12.8	7.3

Source: Bureau of Labor Statistics

**Appendix Table 3. Estimated Consumer Food Expenditures**

<b>Food Inflation Impacts From Higher Corn Prices</b>				
	<b>Estimated 2007 Per Capita At-Home Outlays</b>	<b>Share of At-Home Food Spend</b>	<b>Est. 2008-12 Per Capita At-Home Outlays</b>	<b>Average Food Inflation Rate 2008-12</b>
Source	Bureau of Labor Statistics, AES	Bureau of Labor Statistics	Advanced Economic Solutions	Advanced Economic Solutions
<b>Cereal / Bakery Items</b>	<b>\$446</b>	<b>13.1%</b>	<b>\$534</b>	<b>6.2%</b>
<b>Beef</b>	<b>\$238</b>	<b>7.0%</b>	<b>\$366</b>	<b>15.4%</b>
<b>Pork</b>	<b>\$157</b>	<b>4.6%</b>	<b>\$226</b>	<b>12.9%</b>
<b>Chicken</b>	<b>\$141</b>	<b>4.1%</b>	<b>\$207</b>	<b>13.6%</b>
<b>Dairy Products</b>	<b>\$368</b>	<b>10.8%</b>	<b>\$517</b>	<b>12.0%</b>
<b>Eggs</b>	<b>\$37</b>	<b>1.1%</b>	<b>\$59</b>	<b>17.0%</b>
<b>Fruits / Vegetables</b>	<b>\$592</b>	<b>17.3%</b>	<b>\$684</b>	<b>4.9%</b>
<b>Sweets</b>	<b>\$125</b>	<b>3.7%</b>	<b>\$147</b>	<b>5.5%</b>
<b>Fats / Oils</b>	<b>\$86</b>	<b>2.5%</b>	<b>\$113</b>	<b>9.5%</b>
<b>Other</b>	<b>\$1,227</b>	<b>35.9%</b>	<b>\$1,570</b>	<b>8.6%</b>
<b>TOTAL</b>	<b>\$3,417</b>	<b>100%</b>	<b>\$4,423</b>	<b>9.0%</b>

## About AES

Advanced Economic Solutions is dedicated to providing high quality economic and commodity analysis for a broad array of food companies. Advanced Economic Solutions provides forecasts and analysis for procurement, investment and risk management decisions in order to help these companies in their decision-making processes and strategic thinking.

Bill Lapp is the principal of Advanced Economic Solutions. Mr. Lapp has over 25 years of experience in analyzing and forecasting economic conditions and commodity markets. He has a wealth of experience in providing comprehensive economic analysis of grain, livestock, and dairy markets. Mr. Lapp has been a featured speaker at numerous national forums, including the restaurant industry's semi-annual Hospitality Supply Management conference, the USDA Annual Outlook conference, and the National Chicken Council.

Mr. Lapp currently serves on numerous boards, including the Kansas City Board of Trade, the Farm Foundation, and the Food and Agriculture Committee of the Omaha Chamber of Commerce. In addition, Mr. Lapp is a member of USDA's National Agricultural Statistics Service Advisory Board, and participates on the Harvard Business Industrial Economists' Round-Table.