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Livestock Feed Costs: Concerns and Options

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Summary

Livestock producers in 2008 have seen sharply higher feed costs, fueled by competing use demands for corn and soybeans and by higher energy prices. Some analysts argue that current public policies, including financial incentives that divert corn from feed uses into ethanol production, exacerbated if not caused these higher costs. Other factors, which some believe to be at least as significant, include crop production declines due to weather, and higher global demand for commodities. Proposed options aimed at easing the impacts of higher feed costs include changes in ethanol incentives, use of conservation land for forage use, and direct aid to producers.

Economic Situation[1]

Production costs through the first half of 2008 climbed in every segment of animal agriculture. The main driver was feed, which may account for 60%-70% of total livestock production costs in any given year. Overall, total U.S. feed expenses were forecast to reach a record-high $48 billion in 2008, a jump of nearly $10 billion or 26% over 2007 — a year that was $6.7 billion higher than 2006. Corn accounts for about 90% of feed grains used for feed, and soybean meal is the principal oil crop product used as feed, according to the U.S. Department of Agriculture's (USDA's) Economic Research Service (ERS). Farm-level corn prices have jumped, from an average of $3.04 per bushel (bu.) in the 2006/2007 marketing year (September 1-August 31) to a record $4.20 per bu. in the 2007/2008 marketing year and a projected $5.00-$6.00 in 2008/2009 — a boon for farmers who grow the crops, but bane for animal producers who must buy them.

Soybean farm prices averaged $6.43 per bu. in 2006/2007 and climbed to an estimated record of $10.15 per bu. in the 2007/2008 marketing year. USDA projects that average farm prices for soybeans could reach $11.60 to $13.10 per bu. in 2008/2009.

[1] Unless noted, sources for this section include USDA, ERS, "Farm Income and Costs: 2008 Farm Sector Income Forecast," August 2008; USDA's *World Agricultural Supply and Demand Estimates*, September 12, 2008; testimony by USDA Chief Economist Joe Glauber before the Senate Committee on Energy and Natural Resources, June 12, 2008; and "Feed Grains and Livestock: Impacts on Meat Supplies and Prices," *Choices Magazine Online!*, 2nd quarter 2008.

That has pushed up average soybean meal prices from $205 per short ton in 2006/2007 to $335 for 2007/2008 and a projected $330 to $390 per ton in 2008/2009.

For many animal producers, returns from their own sales were not covering these higher production costs. Total feed costs for finishing a feeder pig in Iowa were about $42, or 30% of the total cost of production, in May 2006; they reached $70 and 46% of total production costs in May 2008. From November 2007 through April 2008, the average loss for each Iowa feeder pig finished for slaughter were nearly $22 per head.[2]

Cattle feeders (who feed young cattle up to slaughter weight) in the Southern Plains, where the major U.S. cattle feeding states include Texas, Nebraska and Kansas, have been in the red since June 2007, according to the Livestock Marketing Information Center (LMIC). Southern Plains feeders have been losing, on average, over $100 per head for much of 2008.[3] CattleFax, which provides market analysis for the cattle industry, estimates that the total cost to "produce cattle and beef from pasture to plate" increased from $726 per head in 2005 to $1,131 in 2008, or by 56%.[4]

Dairy producers have experienced cost pressures, although farm milk prices have remained relatively firm in 2008 due to strong, export-fueled demand. Milk industry analysts also noted that feed costs have moderated somewhat from earlier levels, and that cost impacts may have been muted because "[a] large share of dairy feed in 2008 seems to have either been grown on the dairy or contracted in advance."[5]

A short-term effect when grain prices spike can be more production of red meat and poultry, as herd sizes are reduced and/or as more animals and milk are sold to maintain cash flow to cover higher prices. This can depress farm (and wholesale) prices at least temporarily, further exacerbating the cost-price squeeze. If current market conditions persist, meat supplies will decline — and prices rise — through producer attrition and reduced capacity. Retail prices, too, will eventually adjust accordingly.[6]

"To date, rising costs have largely been absorbed by livestock and poultry producers, often with significant financial loss. However, higher costs of production will ultimately have to be reflected in higher prices for meat, milk, and eggs at retail counters in the United States and elsewhere. This adjustment process is complex, lengthy, painful, and not without unintended consequences," Lawrence and others wrote in *Choices* (see footnote 1). They added that "speed of adjustment will vary significantly as industries with shorter production cycles, such as poultry, are able to respond in a matter of months

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[2] Cost of production data by John D. Lawrence and Shane Ellis, Iowa State University, accessed June 2008, at [http://www.econ.iastate.edu/faculty/lawrence/Lawrence_Website/estreturns.htm]. Lawrence has noted that these losses follow 10 years that were generally profitable for producers.

[3] LMIC website accessed on September 17, 2008, at [http://www.lmic.info/].

[4] "Something's Got to Give," *CattleFax Update*, June 20, 2008. Also see David P. Anderson et al., *The Effects of Ethanol on Texas Food and Feed*, Agricultural and Food Policy Center, Texas A&M University, April 10, 2008.

[5] National Milk Producers Federation (NMPF), July/August 2008 Dairy Market Report.

[6] Testimony of Joe L. Outlaw, Agricultural and Food Policy Center, Texas A&M University, before the Senate Committee on Energy and Natural Resources, June 12, 2008.

whereas adjustments in industries with longer production cycles, such as beef, can take a period of several years."

Reasons for Higher Feed Costs[7]

Strong Economic Growth in Developing Countries. Rising commodity prices, including for feed, are rooted in a confluence of factors, some with short-term impacts, but others longer-term. An example of the latter is steadily increasing world population, boosted by robust growth in purchasing power, especially in developing countries such as China and India. Analysts believe this trend could mean a sustained increase in global demand for more and different kinds of food — including, as household incomes improve, higher-value foods like meat and dairy products. This dietary shift in turn implies increased demand for animal feeds.

Weather-Related Crop Shortfalls. Global grain production declined in 2005 and 2006, cutting into existing stocks and reducing exportable supplies. Crops here as well as in Australia, Canada, the European Union, Eastern Europe, and some countries of the former Soviet Union were reduced mainly due to poor weather conditions. On the other hand, weather may have had less of an impact on corn than on food crops like wheat and rice: world corn output was expected to increase from 712 million metric tons (MMT) in 2006/2007 to 790 MMT in each of 2007/2008 and 2008/2009. In the United States, the world's leading producer, 2008 production was estimated by USDA at 12.1 billion bushels, approximately 1 billion bushels below the previous year. Among the reasons cited were spring rains and flooding followed by a dry August in the Corn Belt.[8]

Surging U.S. Exports. Since January 2002, the U.S. dollar has declined in value relative to the currency of U.S. export competitors (e.g., Canada, Australia, or the EU) and grain importing nations (e.g., Japan, Taiwan, etc.), effectively making U.S. grain exports cheaper and, therefore, more competitive, despite the rise in per-bushel prices. In terms of year-to-year export volumes, U.S. corn exports are projected up nearly 18% to a record of almost 2.5 billion bushels in the 2007/2008 marketing year.

Other Contributing Factors. Former USDA Chief Economist Keith Collins cited a number of other factors that have contributed to feed (and other food) price increases. These include higher demand for feed caused by increasing numbers of fed animals in the United States; a two-year rise in corn production costs from $186 per acre in 2005 to nearly $230 in 2007 due mainly to higher energy-related (fertilizer and fuel) costs; and actions by a number of foreign governments to insulate their own markets from high commodity prices, such as limiting exports of their own agricultural commodities and subsidizing domestic production and/or consumption.[9]

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[7] Adapted in part from CRS Report RL34474, *High Agricultural Commodity Prices: What Are the Issues?*, where additional details, and (unless noted) sources may be found.

[8] USDA, ERS, *Feed Outlook*, September 16, 2008.

[9] Collins, Keith, *The Role of Biofuels and Other Factors in Increasing Farm and Food Prices*, June 19, 2008, study conducted in support of a review by Kraft Foods Global, Inc.

Government Biofuels Policy. Perhaps the most widely-debated factor has been government biofuels policy. Current U.S. biofuel production is almost entirely corn-based ethanol — nearly 6.5 billion gallons of corn-ethanol were produced in 2007, compared with an estimated 450 million gallons of primarily soybean-based biodiesel. The Energy Independence and Security Act of 2007 (EISA; P.L. 110-140) extended and substantially expanded the existing Renewable Fuel Standard (RFS), a usage requirement mandating that an increasing volume of biofuels be blended with conventional fuels. The RFS mandates the use of at least 9 billion gallons of biofuel in U.S. fuel supplies in 2009, more than doubling to 20.5 billion gallons by 2015 and to 36 billion gallons by 2022. The U.S. biofuels sector is also supported by a tax credit of 51 cents for every gallon of corn-based ethanol blended in the U.S. fuel supply (to drop to 45 cents in 2009), and an import tariff of 54 cents per gallon of imported ethanol. In addition, several federally-subsidized grant and loan programs assist biofuels research and infrastructure development.

Of the 160 U.S. ethanol plants — with total capacity now in excess of 9 billion gallons per year — only about a dozen use feedstocks other than corn (or milo or barley, also feed grains).[10] USDA estimates that in crop year 2007/2008, about 23% of the U.S. corn crop will have been used to produce ethanol; this share is projected to grow to more than 33% in 2008/2009. Although high corn prices have slowed plans for expanded capacity, plants already on line are expected to operate so long as they can cover their variable costs. The runup in corn demand, which is expected to be long-lasting, has directly sparked substantially higher corn prices to bid available supplies away from other uses like livestock feed, according to a number of agricultural economists.

Corn ethanol byproducts — now mainly distiller's grains from dry-mill ethanol plants but also corn gluten feed and corn gluten meal — can be fed by livestock producers to help offset higher feed corn prices. According to the National Corn Growers Association, the equivalent of an additional 1 billion bushels of feed will be available in the coming year through ethanol byproducts.[11] Because of the cost and difficulty of drying and shipping, distiller's grains are best utilized by feeders closest to ethanol plants. Research indicates that distiller's grains should constitute no more than 35-40% of feedlot cattle rations, 10%-20% of dairy cow rations, and 10% for hogs, broiler chickens, and turkeys, according to Anderson.

Reviewing several different studies and economic models, Collins concluded that implied changes in the price of corn due to its use in ethanol might range from 25% to 60%. A 2008 study by the Food and Agricultural Policy Research Institute (FAPRI) attempts to measure the pure and joint price effects of the U.S. biofuels RFS and the tax credits, suggesting that joint implementation of both the RFS and the tax credit supports corn prices by about 20%. A substantial portion of corn price effects are likely transmitted to the soybean market via competition for land, primarily in the Corn Belt where soybeans and corn are both widely grown. A study by the Center for Agricultural Research and Development (CARD) found that, jointly, the RFS and tax credit supported corn prices by 16%. FAPRI and CARD found the impacts of the tax incentives to be highly dependent on petroleum prices; higher petroleum prices substitute for government

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[10] Source: Renewable Fuels Association, June 19, 2008, at [http://www.ethanolrfa.org/].

[11] "Figures Reveal How Livestock Benefit From Ethanol," *The PigSite*, accessed August 18, 2008, at [http://www.thepigsite.com/].

incentives and diminish their relative impact on corn prices. Neither study included the effects of grants and subsidized loans available for biofuels research and infrastructure.

Outlook and Options

The U.S. response to recent developments in grain markets is of keen interest to U.S. meat, dairy and poultry producers, who have long been wary of any government policies that can raise feed prices. Congressional committees in 2008 have held a number of hearings on the causes and impacts of rising commodity costs. The House Agriculture Committee convened six hearings between mid-May and mid-September 2008 on commodity futures trading and related matters, including proposals to increase oversight by the Commodity Futures Trading Commission of futures markets, where, some critics argue, excessive speculation added significantly to the 2008 price spikes in oil and other commodities; others counter that futures traders simply react to market conditions. Economists seem to agree that U.S. government initiatives are unlikely to have much impact on such price drivers as foreign population and income growth and concurrent demand for commodities, weather-related production shortfalls, and inflation generally, at least in the short term. However, a number of options have been offered to address other perceived reasons for high feed prices.

Reduce Domestic Ethanol Incentives. Several bills propose to reduce ethanol production incentives by repealing, lowering, or freezing the RFS, the biofuels tax credit, and/or the ethanol import tariff, such as H.R. 5911, H.R. 5986, H.R. 6137, H.R. 6183, H.R. 6324, S. 3031, and S. 3080. Outside of Congress, attention focused on an April 25, 2008 letter to the U.S. Environmental Protection Agency (EPA) from Texas Governor Rick Perry, requesting a waiver of 50% of the 2008 RFS for grain-derived ethanol, now at 9 billion gallons. The letter cited EPA's authority, under Sec. 211(o) of the Clean Air Act, to approve such a waiver if the RFS requirement would severely harm the economy of a state, region, or the country. The EPA, in August, denied the request, stating that its analysis "found no compelling evidence that the RFS mandate is causing severe economic harm during the time period specified by Texas."[12] Opponents have argued that an EPA waiver, or reductions in the financial incentives proposed in the various bills, would not have much of an immediate impact on corn prices (see FAPRI and CARD studies, above). At any rate, other factors such as global grain shortfalls, strong U.S. exports, and higher oil prices played a much larger role in high feed costs, some have continued to assert.

Use Conservation Land. Some have argued that as much as one-third of the nearly 35 million acres (April 2008) in USDA's conservation reserve program (CRP) could be returned to agricultural production without environmental harm. The 2008 farm bill (P.L. 110-246) caps national enrollment in the CRP, which is intended to keep environmentally sensitive lands out of production for 10-15 years, at 32 million acres. What about incentives like easing producer penalties who want to end their CRP contracts early, discouraging re-enrollment or renewal of existing contracts, permitting temporary use of more CRP acres for grazing, cutting hay, and/or raising other feedstuffs? Opponents of opening conservation land assert that the loss of environmental benefits will

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[12] "EPA Keeps Biofuels Levels in Place after Considering Texas' Request," August 7, 2008 press release, which can be found, along with a fact sheet on the EPA findings and the August 13, 2008 *Federal Register* notice, at [http://www.epa.gov/otaq/renewablefuels/].

far outweigh any gains to animal agriculture, in part because such lands have always been considered marginally productive in the first place. Also, much of this marginal CRP acreage previously was more suitable for (and planted in) wheat, not corn or soybeans.

USDA on May 27, 2008 announced the potential eligibility of more than 24 million acres enrolled in CRP for hay and forage in 2008 to help livestock producers hit by higher feed prices. USDA set a number of limitations on use of CRP acreage to minimize impacts on nesting birds and on the most environmentally sensitive lands. The National Wildlife Federation sued the Department, arguing that it did not prepare an environmental impact statement on the new policy. In July, a U.S. District Court issued a temporary restraining order (TRO) and then a permanent injunction suspending USDA's CRP opening, except for applicants that had been approved by or had applied prior to the TRO, or who had invested at least $4,500 toward haying or grazing equipment and preparation prior to the TRO. Where the application was approved prior to the TRO, haying and grazing must be completed by November 10. For subsequent approvals, haying and grazing must end by September 30 and October 15, respectively.[13]

Financial Assistance for Livestock Producers. Over the past decade alone, many of the nearly annual supplemental appropriations measures containing emergency agricultural aid have included money for animal agriculture — amounting to at least $3.2 billion in total, often to cover the cost of high feed prices or lost pasture use.[14] Separately, Section 32 of the Act of August 24, 1935 is a permanent appropriation available to USDA for a variety of purposes, and it has been tapped not only to pay for disaster losses, but also to address economic and market problems.[15] Thus, some argue, there is policy precedent for providing direct payments to livestock and poultry producers to help them cope with sharply rising feed costs. On the other hand, both the 2008 farm bill (P.L. 110-246) and the FY2008 USDA appropriation (part of P.L. 110-161), contain language seeking to constrain Section 32 spending, or at least the Secretary's flexibility to use it.

Other Options. Some have urged U.S. officials to push harder for the elimination of various foreign barriers that obstruct international trade and distort market price signals to producers, including tariffs, unjustified technical and phytosanitary standards, export controls, and various domestic agricultural subsidies. Further, it is argued, investments should be increased, particularly in developing countries, in agricultural research and education to increase productivity, in transportation and marketing infrastructure, and in other types of alternative energy production here and globally. These efforts could all help to ease the upward pressure on feed grain and other commodity prices. Others counter that regardless of their merits, these types of solutions would offer little if any short-term relief to the financial problems currently facing livestock producers.

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[13] See CRS Report RS21613, *Conservation Reserve Program: Status and Current Issues*, by Tadlock Cowan. The order does not affect a July 2008 USDA announcement to permit grazing only on CRP land in designated flood-stricken areas.

[14] The 2008 farm bill (P.L. 110-246) creates a new Agricultural Disaster Relief "Trust Fund" for crop years 2008-2011. Three of the five new programs under which payments could be made are relate to livestock. See CRS Report RL34207, *Crop Insurance and Disaster Assistance in the 2008 Farm Bill*, and CRS Report RL33958, *Animal Agriculture: 2008 Farm Bill Issues*.

[15] See CRS Report RL34081, *Farm and Food Support Under USDA's Section 32 Program*.