



CRS Report for Congress

Livestock Feed Costs: Concerns and Options

Geoffrey S. Becker
Specialist in Agricultural Policy
Resources, Science, and Industry Division

Summary

Sharply higher feed costs, fueled by competing use demands for corn and soybeans and by rising energy prices, are affecting the beef, pork, dairy, and poultry industries. In contrast, wholesales prices for most animal products have held steady. Some analysts argue that current public policies, including financial incentives that divert corn from feed uses into ethanol production, have 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

Production costs have been climbing steeply in every segment of animal agriculture, with the cost of feed the main driver. Overall, total U.S. feed expenses are forecast to reach a record-high \$45 billion in 2008, a jump of \$7 billion or 18% over 2007 — a year that was \$7.6 billion or 25% higher than 2006. Corn accounts for 91% 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).¹ Farm-level corn prices have jumped, from an average of \$3.04 per bushel (bu.) in the 2006/07 marketing year (September 1-August 31) to a record level of as much as \$4.45 per bu. in the current 2007/08 marketing year and a projected \$5.30-\$6.30 in 2008/09 — 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 2006/07 and climbed to an estimated record of \$10 per bu. in the current marketing year. USDA projects that average farm prices for soybeans could reach \$11 to \$12.50 per bu. in 2008/09. That has pushed up

¹ USDA, ERS. "Farm Income and Costs: 2008 Farm Sector Income Forecast." March 7, 2008, at [<http://www.ers.usda.gov/Briefing/FarmIncome/nationalestimates.htm#productionexpenses>]. Unless noted, commodity prices are from USDA's *World Agricultural Supply and Demand Estimates*, June 10, 2008, and from testimony by USDA Chief Economist Joe Glauber before the Senate Committee on Energy and Natural Resources, June 12, 2008.

average soybean meal prices from \$205 per short ton in 2006/07 to \$315 this year and a projected \$295 to \$355 per ton in 2008/09. Soybean futures for various months of delivery were at roughly \$15 per bu. on June 19, 2008.

For many animal producers, returns from their own sales are 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. Iowa hog producers had average losses in every month since fall 2007, according to estimates of monthly returns (sales price minus production cost) by Iowa State University. From November 2007 through April 2008, the average loss for each Iowa feeder pig finished for slaughter averaged 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 lost, on average, over \$134 per head over the first five months of 2008.³ In Texas, the largest cattle feeding state, cow-calf operations there, which not only graze animals, but also feed them hay in the winter and some grain periodically, experienced average production cost increases (2006-2008) of \$100 per cow.⁴ 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%.⁵

Dairy producers have experienced similar increases in production costs, although farm milk prices and production have remained relatively firm in 2008 due to strong, export-fueled demand. Milk prices could decline later this year due to large supplies.⁶ Some large meat and poultry integrators also reportedly are incurring losses. For example, business rating services have recently lowered credit ratings for companies like Tyson Foods Inc., which processes and markets beef, chicken, and pork products, the poultry company Pilgrim’s Pride, and Dean Foods, the largest U.S. dairy processor. Tysons recently reported its first loss in six quarters and said its corn and soybean costs would increase by \$600 million in 2008.⁷

Structural and competitive pressures in the livestock industry have made it more difficult for the sector to pass its higher production costs on to consumers. For example,

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].

³ LMIC website accessed on June 26, 2008, at [<http://www.lmic.info/>].

⁴ Anderson, David P., et al. *The Effects of Ethanol on Texas Food and Feed*, Agricultural and Food Policy Center, Texas A&M University, April 10, 2008. Hereafter cited as Anderson.

⁵ “Something’s Got to Give,” *CattleFax Update*, June 20, 2008.

⁶ Anderson; also National Milk Producers Federation (NMPF), June 2008 Dairy Market Report. NMPF comments that “Despite record milk prices, dairy farmers are either losing money overall, or using their valuable food crops to subsidize their milking operation.”

⁷ Sources: “A Costly Link Between Food and Fuel,” *The Washington Post*, April 30, 2008; and “Fitch cuts Tyson rating to junk on cost concerns,” and “S&P may downgrade Tyson, Pilgrim’s Pride debt,” *Meatingplace in print online*, June 18, 2008, and June 20, 2008.

CattleFax concluded that retail beef prices should have risen by 20% between 2005 and 2008, to \$4.36 per pound (all fresh retail beef price) just to absorb the increased cost of cattle production — but that retail beef prices actually increased by only 8% during the period. These estimates do not take into account any higher processing and marketing costs.⁸ One short-term effect when grain prices spike is 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.⁹

Reasons for Higher Feed Costs¹⁰

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 is expected to increase from 713 million metric tons (MMT) in 2006/07 to 780 MMT in 2007/08. However, USDA projects a decline to 775 million MMT of production in 2008/09, when a projected increase in total foreign production would not offset the anticipated decline in the United States, the world's leading producer.

Recent heavy rains and flooding in the Corn Belt could be problematic for U.S. livestock producers. Several million acres planted in corn and soybeans reportedly were inundated. Planting in many of these areas already had been thwarted due to wet weather. From 1.5 to 2 million acres of corn and soybeans in Iowa alone may have been lost to production this year, according to the American Farm Bureau Federation. In June, USDA lowered its May estimate of total U.S. corn production this year, by 390 million bushels, to 11.7 billion bushels; some analysts believe the July estimate will be even lower. Corn production last year was 13.1 billion bushels.¹¹

⁸ “Something’s Got to Give,” *CattleFax Update*, June 20, 2008.

⁹ 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.

¹⁰ 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.

¹¹ See for example, “Meat Price Bubble in Wake of U.S. Flood,” June 23, 2008, *PoultrySite News* (continued...)

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 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.¹²

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).¹³ USDA estimates that this crop year (2007/2008), about 24% of the U.S. corn crop will be used to produce ethanol; this share is projected to grow to 33% next year. Although soaring 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 rapid increase 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 — can be fed by livestock producers to help offset higher feed corn prices.

¹¹ (...continued)

Desk, at [<http://www.thepoultrysite.com>]. Also, USDA, ERS, *Feed Outlook*, June 12, 2008.

¹² 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.

¹³ Source: Renewable Fuels Association, June 19, 2008, at [<http://www.ethanolrfa.org/>].

Because of the cost and difficulty of drying and shipping, distiller's grains are best utilized by feeders near 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, Collins concluded that implied changes in the price of corn due to its use in ethanol might range from 25% to 60%. A recent 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 incentives and diminish their relative impact on corn prices. Neither study included the effects of the various grants and subsidized loans available for U.S. 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 already held several hearings on the impact of rising commodity costs, and legislation is possible. On June 24, 2008, the House Agriculture Committee held a hearing on a bill (H.R. 6334) to increase oversight by the Commodity Futures Trading Commission of foreign commodity futures markets, where, some suspect, excessive speculation has added significantly to the price of oil and other energy commodities. 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 some of the perceived reasons for high feed prices.

Reduce Domestic Ethanol Incentives. Several bills have been introduced to reduce domestic 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 H.R. 3080. Outside of Congress, attention has 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. EPA's notice for a 30-day comment period on the request was in the May 22, 2008 *Federal Register*. Others, however, suggest that due to the currently high petroleum prices, 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 high oil prices have played a much larger role in high feed costs, some continue 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. Should USDA and/or Congress consider 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 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 in wheat, not corn and soybeans. Nonetheless, USDA on May 27, 2008 announced that more than 24 million acres enrolled in CRP would be made eligible 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.¹⁴

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.¹⁵ 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.¹⁶ Thus, some argue, there is legislative and administrative 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 new 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.

¹⁴ For details see USDA "Conservation Reserve Program — Critical Feed Use," at [<http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=landing>].

¹⁵ 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*.

¹⁶ See CRS Report RL34081, *Farm and Food Support Under USDA's Section 32 Program*.