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The Slow Road Back for the U.S. Livestock Industry

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The recent recession has wounded the livestock industry. Since 2007, falling demand and rising feed costs have battered U.S. producers of cattle, hogs, poultry and dairy products, forcing them to trim herds. This traditional supply adjustment should help rebalance supply and demand, thus boosting profit margins and staving off larger losses over the next year.

Renewed prosperity in the livestock industry, however, hinges on a rebound in protein demand. While the U.S economy appears to be recovering, domestic protein consumption typically stays sluggish following a recession. Consequently, most potential gains in demand will probably come from developing countries as their incomes rise.

This article analyzes the profitability and competitiveness of the U.S. livestock sector. Saddled with high production costs and weak domestic demand, producers also face the likelihood of sluggish gains in consumer incomes and spending, which could limit any rise in U.S. protein consumption. Rising global demand will offer significant new profit opportunities—but to seize those new opportunities, U.S. producers must create new livestock products targeted to the tastes and preferences of global consumers.

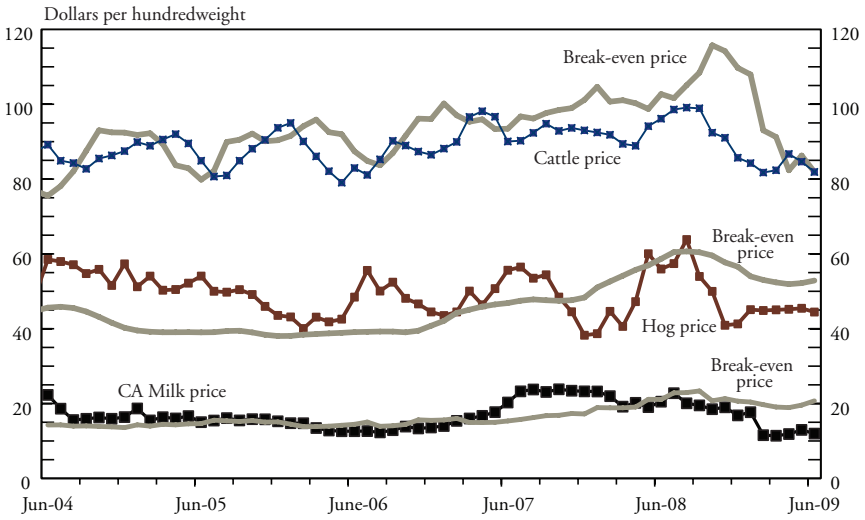
Lost Profitability Leads to Herd Liquidations

In 2008, after several years of robust profits, livestock profits disappeared with rising feed costs and falling demand. From 2004 to 2007, livestock producers enjoyed periods of strong profitability due to increased demand and short protein supplies (Chart 1). The dietary fad of low-carb diets, such as the Atkins diet, helped boost U.S. protein demand, especially for red meat. And rising incomes, especially in developing countries, strengthened foreign protein demand. Producers responded by strengthening production capabilities and expanding breeding herds for hogs, beef cattle and dairy cows. According to the U.S. Department of Agriculture (USDA), from 2004 to 2008, red meat and poultry production rose 10 percent with the strongest gains in pork production. At the same time, milk production jumped 11.2 percent.

Just when livestock production peaked, however, global protein demand declined in the recession. This year, domestic consumer spending on food items has fallen 1.5 percent, with even larger contractions in food consumed away from the home.[1] Similarly, after sliding at the end of 2008, U.S. meat and dairy exports in the first five months of this year plummeted 23 percent below year-ago levels. Dairy exports declined even more significantly.

With demand weak and supplies bulging, most U.S. livestock producers have operated in the red over the past year. Weak livestock demand weighed heavily on livestock

Chart 1
Cattle, Hog and Milk Prices



Source: USDA, Iowa State University, and California Department of Food and Agriculture

prices received by farmers. Cattle and hog prices have declined roughly 10 percent since 2007. Milk producers have faced the sharpest decline, with prices plummeting by more than one-third. By 2008, profits in the livestock industry had fallen sharply, as prices dipped well below break-even levels.

At the same time, livestock production costs spiked, with strong crop export and ethanol demand underpinning a surge in U.S. crop and feed prices. By August of this year, feed prices had risen 48 percent above 2007 levels. As a result, livestock prices dropped well below production costs and breakeven prices (Chart 1).

Confronting disappearing profits, livestock producers began trimming herd sizes. In 2008, poultry producers reduced the number of chicks hatched 1 percent and trimmed the number of chicks placed on feed 2 percent. At the same time, the number of cattle on feed fell 6.6 percent and hogs for breeding declined 2.7 percent. Aided by a dairy buyout program in 2009, dairy producers are expected to cut herds 1.5 percent. Herd and flock liquidations have helped narrow losses. Still, analysts suggest that bringing the market into balance may require more cuts, especially in dairy and pork production. In fact, USDA suggests that hog and dairy herds could shrink further in 2010.

U.S. Livestock Demand Declines

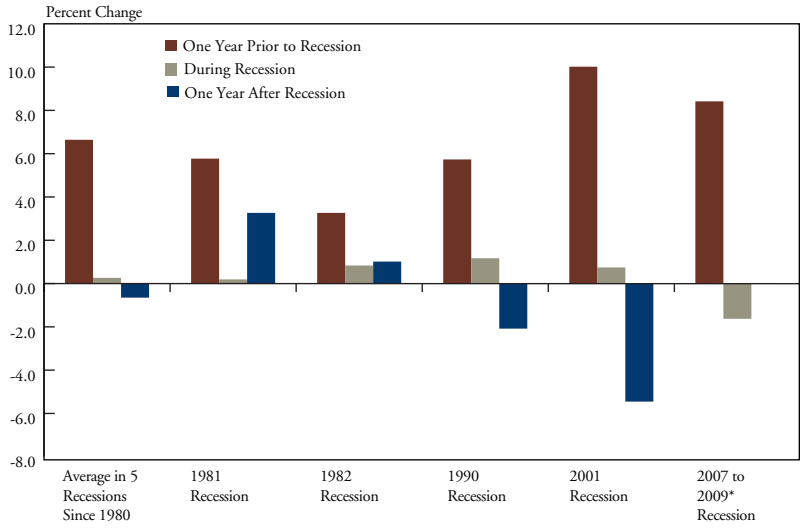
Despite the liquidation of livestock herds, a rebound in demand will be essential for livestock farmers to ignite a return to profitability. Historically, livestock demand has rebounded sluggishly following recessions. The prospects of a rebound in U.S. demand appear bleak, especially if the recovery is not strong enough to spur rising employment, incomes and spending.

Over the last half century, rising U.S. incomes have supported a steady rise in U.S. protein consumption. According to the Bureau of Economic Analysis, real per capita disposable income in the U.S. has risen from roughly $11,000 in 1960 to almost $33,000 in 2008. The nearly three-fold gain in discretionary income has allowed U.S. consumers to change to a more protein-based diet. By steadily increasing their protein consumption, consumers have boosted their spending on beef, pork, poultry and milk products.

Increased protein consumption was also supported by lower prices and changing consumer preferences. Since the 1970s, robust efficiency gains in U.S. livestock production, which lowered meat and milk costs, have made livestock products more affordable for consumers. Moreover, changing dietary fads and food safety concerns have also altered livestock consumption patterns. For example, driven by dietary trends discouraging the consumption of red meat, beef consumption declined in the 1990s, replaced by a rise in poultry consumption. Moreover, outbreaks of bovine spongiform encephalopathy (BSE), or "Mad Cow Disease," in Europe accelerated this switch.

During recessions, U.S. protein consumption stalls as slower income gains reduce spending. While recessions historically have reduced consumer spending, per capita expenditures on livestock products have typically held steady during the five recessions since the 1980s (Chart 2).[2] For example, since 1980, livestock expenditures have risen on average 6.5 percent in the year prior to a recession, with the strongest gains emerging prior to the 2001 and the most recent recession.[3] During the five recessions since 1980, expenditure growth on beef, pork, poultry and milk slowed to 0.2 percent. And, in the most recent

Chart 2
U.S. Per Capita Expenditures on Beef, Pork, Poultry and Milk



Calculations based on Bureau of Economic Analysis data.
* The National Bureau of Economic Research indicates the recession started in Dec. 2007. At the time of publication, the end of the recession had yet to be specified.

recession, expenditures have actually declined. Moreover, consumers become more cost-conscious during recessions and alter their protein consumption patterns. For example, consumers tend to substitute more expensive away-from-home consumption with cheaper at-home consumption and high-cost beef with cheaper poultry meat.

More importantly, livestock expenditures have also been slow to rebound during economic recoveries. In fact, since 1980, livestock expenditures have edged down a full year into an economic recovery (Chart 2). The declines were driven by large contractions in the jobless recoveries following the 1990 and 2001 recessions, when stronger economic growth failed to increase employment or incomes. Livestock expenditures dropped 2.9 percent and 4.6 percent, respectively, during the first year after these recessions. Declines were spread across all livestock products—beef, pork, poultry and milk.

Livestock producers could face another sluggish rebound in U.S. protein demand following the current recession. Livestock expenditures have plummeted 1.65 percent, with losses across all livestock sectors. While economic forecasts suggest the recession is near its end, the prospects of another jobless recovery remain (Knotek and Terry). Fundamental changes in labor markets, such as a rise in businesses hiring temps instead of permanent, full-time workers, tend to increase the likelihood of sluggish job gains during the initial stages of a recovery. In addition, unemployment tends to rise following a financial crisis, as evidenced by foreign countries such as Japan in the 1990s. Therefore, the prospects of anemic employment and income gains following the current recession appear to be high. Indeed, if unemployment continues to rise even after the recovery begins, limited income gains could slow any rebound in U.S. protein demand. Moreover, unlike past recessions, the contractions in expenditures during the current recession could be an ominous sign of steeper contractions going forward.

Will Foreign Demand Rise?

With the prospects of weak domestic demand for protein, the rebound for the livestock industry may hinge on global protein consumption. In the near term, developing countries are expected to pace the economic recovery. Longer term, an emerging middle-class in developing countries is rapidly increasing its protein consumption, offering new opportunities in global markets. While livestock producers face several challenges in penetrating these markets, the development of new products, targeted to the tastes and preferences of global consumers, could help them compete abroad.

Developing countries are projected to post strong economic gains during the global recovery. According to the International Monetary Fund (IMF), world GDP growth is projected to be approximately 0.5 percent in 2009. Stronger growth in developing countries, such as China and India, are projected to offset GDP contractions in advanced economies, such as the United States and the U.K. Indeed, China is projected to lead world GDP growth by expanding 6.7 percent in 2009 and 8 percent in 2010.

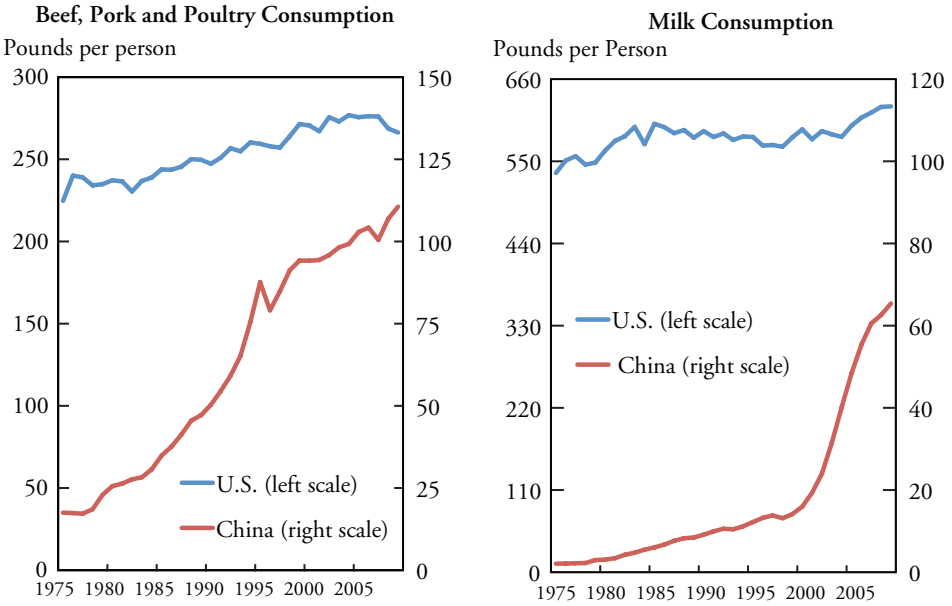
Stronger growth in developing countries could also sustain the long-term pattern of robust income growth for a rising middle-class, which boosts protein consumption. The clearest example is China, the world's most populous

country with approximately 1.3 billion people. Since 1991, median household income in China has increased more than 50 percent.[4] As incomes have jumped, Chinese consumers have added more protein to their diets, yielding a sharp rise in protein consumption. For example, U.S. meat consumption rose 18 percent from 1975 to 2009, while China's surged 532 percent (Chart 3). The strongest gains emerged in Chinese milk consumption, which has grown by a staggering 3,000 percent, compared to a modest 17 percent gain in the United States.

While protein consumption in developing countries like China has been impressive, the future may bring even further growth. Economic activity and protein consumption in developing countries pales in comparison to that in advanced countries (Chart 4). A simple plot of per capita GDP and protein consumption of several countries suggests that if China follows global patterns, a rise in economic activity could foster significant increases in protein consumption. If China and other developing countries expand as projected, further boosting protein consumption patterns beyond their production capabilities, export opportunities for U.S. producers could rise.

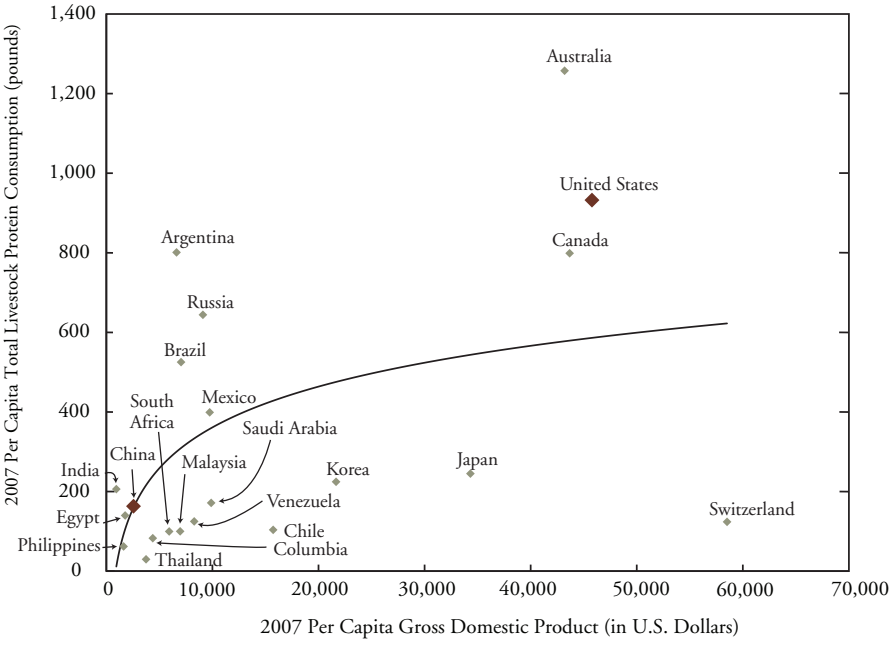
While identifying international demand opportunities is straightforward, actually competing in international markets is not. U.S. producers face several steep challenges in meeting global demand. The livestock industry continues to cope with trade barriers associated with food safety issues. For example, the slaughter of a dairy cow in 2003 with BSE closed foreign markets to U.S. beef (Henderson). Food safety fears slowed the re-opening of many of these markets and dampened trade

Chart 3
U.S. and China Consumption of Livestock and Milk Products



Calculations based on Foreign Agricultural Service data.

Chart 4
Gross Domestic Product and Livestock Protein Consumption by Country, 2007



Source: International Monetary Fund and Foreign Agricultural Service and authors' calculations

thereafter.[5] Consequently, the livestock industry must overcome persistent food safety concerns to boost foreign demand for its products.

The key to boosting foreign demand, however, might already exist in the U.S. livestock industry. The industry has traditionally innovated to meet ever-changing consumer tastes and preferences at home. As domestic demand for meat has changed over time, largely due to rising incomes and more time spent away from the home, the industry has responded. Pre-packaged meats and pre-cooked meals, for example, have met rising consumer demands for safe, convenient, quick and appetizing products. As foreign countries emerge from poverty, the lessons livestock producers have learned about demand at home might hold for demand abroad.

Indeed, the livestock industry has already started to identify ways to meet evolving tastes and preferences of foreign consumers. The U.S. Meat Export Federation (USMEF) is assisting U.S. livestock producers through various promotional campaigns for new products. For example, the global economic downturn has led to a rise in "bento-boxes" sold in Japanese convenience stores. USMEF has positioned U.S. beef as a main ingredient in these quick and affordable lunches, not only boosting demand for U.S. meat but, more importantly, rebuilding Japanese consumers' trust in U.S. beef. The exports of other meat cuts-such as steak-may benefit as well.

Conclusion

Livestock producers are currently struggling to post profits amid weak demand and historically high production costs. A recovery in the livestock industry will center on a rebound in the demand for livestock. But the livestock rebound may not be led by U.S. consumers, especially if the recovery produces modest employment and income gains. Instead, as stronger economic growth emerges in developing countries, foreign consumers will enjoy some of the fastest-rising disposable incomes in the world—with per capita meat consumption patterns to match.

Competing in global markets can be a challenge for U.S. livestock producers facing higher costs at home. But producers can still penetrate global markets in this era of intense global competition—if their products target global consumer tastes. In short, for U.S. producers to seize new global opportunities, they must continue to create new products for new consumers.

Endnotes

[1]Unless otherwise specified, all data referenced in the article obtained from the U.S. Department of Agriculture (USDA).

[2] The pattern of limited protein consumption growth holds for most recessions since World War II. The lone exception is the 1974 recession, where industry restructuring and strong productivity gains reduced meat and milk prices enough to stimulate consumption.

[3]The National Bureau of Economic Research indicates the recession started in December 2007. At the time of publication, the end of the recession had yet to be specified, while many economic forecasts suggested economic growth would rebound in the second half of 2009.

[4]Taken from the Statistical Yearbook of The Republic of China, 2008, which can be accessed at *http://eng.dgbas.gov.tw/public/data/dgbas03/bs2/yearbook_eng/Y103I.pdf.*

[5]See Jones and Shane (2009) for a discussion of how rising incomes, changing consumer preferences, free trade agreements and changes in the value of the dollar affect red meat trade.

References

Henderson, Jason. 2004. "FAQs about Mad Cow Disease and Its Impacts" *Main Street Economist*, Federal Reserve Bank of Kansas City, January. *http://www.kansascityfed.org/RegionalAffairs/Mainstreet/MSE_1203.pdf.*

Jones, Keithly and Mathew Shane. 2009. "Factors Shaping Expanding U.S. Red Meat Trade." LDP-M-175-01, Economic Research Service, U.S. Department of Agriculture, February.

Knotek, Edward S. and Stephen Terry. 2009. "How Will Unemployment Fare Following the Recession?" *Economic Review*, Federal Reserve Bank of Kansas City. Third Quarter.

Livestock, Dairy, and Poultry Outlook, ERS, USDA *http://usda.mannlib.cornell.edu/usda/current/LDP-M/LDP-M-07-17-2009.pdf*

MacDonald, James M. and William D. McBride. (2009). "The Transformation of U.S. Livestock Agriculture: Scale, Efficiency, and Risks" Economic Information Bulletin 43, Economic Research Service, U.S. Department of Agriculture, January. *http://www.ers.usda.gov/Publications/EIB43/EIB43.pdf.*