



QUARTERLY U.S. RURAL ECONOMIC REVIEW, Q1-2013

Subpar Economic Growth, Drought Relief, and Upbeat Crop Prospects

This quarterly update is prepared by the Knowledge Exchange Division and covers the key industries served by CoBank, including the agricultural markets and the rural infrastructure industries.

Inside this Issue...

Global Economic Backdrop.....2
 U.S. Macroeconomic Outlook2
 U.S. Agricultural Markets.....2
 Grains, Oilseeds, and Ethanol3
 Animal Protein and Dairy6
 Other Commodities11
 Fruits, Nuts, and Vegetables14
 Farm Supply.....14
 Rural Infrastructure17

Key Points:

- *U.S. drought conditions have improved during the past month, and the grain and oilseed markets have reacted with renewed optimism. Timely rains and favorable planting conditions will still be needed for the 2013/14 crops to reach their full potential.*
- *Aftereffects of the 2012 drought continue to unfold in the old-crop grain and oilseed markets, with rationing shaping up as the dominant theme for the latter half of the 2012/13 marketing year.*
- *Despite record high feed costs, feed use has slipped only 2 percent. The pork and poultry industries have avoided liquidations of their herd or broiler flock, and are betting that crop market conditions will improve substantially in the second half of 2013.*
- *Drought in New Zealand and Australia has impaired their dairy production. This sour global milk outlook should provide new opportunities for U.S. dairy exports.*
- *If the 2013/14 U.S. crops fail to reach potential and crop prices persist at their current high levels, the animal protein and dairy industries will have to scramble and realign their operations accordingly.*
- *Cable companies have entered the enterprise market for broadband services and developed first-rate fiber networks. As a result, cable companies are now using those networks to go head-to-head with the ILECS for their business customers and appear to be winning the competitive battle.*
- *Regulatory and tax policies continue to favor the development of renewable generation and gas-fired peaking facilities, while discouraging development and retention of base load coal-fired generation.*
- *Major new capital investments in infrastructure are needed to move natural gas from the newly emergent shale basins to the population centers of the country, including new gathering systems, processing plants, transmission pipelines, storage fields, and LNG terminals.*

Global Economic Backdrop

The world economy continues to rely on China and the emerging markets as the main engines of growth. China's new leadership will be setting new directions in economic policy, and the world waits to see whether there will be dramatic departures from the status quo. With their two largest trading partners, Europe and the U.S., continuing to flounder, China's own growth rates will remain subdued. Concerns about escalating real estate values will likely limit China's flexibility to stimulate their economy through lower central bank rates. Japan, under new leadership, is aggressively seeking to energize its long stagnant economy by devaluing their currency (already lowered by 22 percent since September 2012) and injecting further liquidity into their economy. The risk of competitive currency devaluations among countries poses an additional threat to the fragile global economy.

Europe remains mired in recession and sovereign debt issues. With German elections scheduled for September, the underlying Eurozone problems are unlikely to be addressed until late 2013. The Eurozone remains the greatest risk to the global economy. While a proposed levy on bank deposits to help fund a bailout for Cyprus has been rejected by the Cypriot Parliament, the willingness of legislators to consider such a levy will discourage the public from leaving funds in banks located in troubled countries. Meanwhile, the U.S. economy continues to struggle with its own fiscal deficits, mounting debt, fiscal drag, and debilitating policy uncertainty across a wide range of critical issues. U.S. businesses are sitting on a huge stockpile of cash, unwilling to invest in new capital spending projects until Congress and the Administration overcome their partisan squabbling and get down to the business of governing and addressing the many pressing issues.

U.S. Macroeconomic Outlook

Although the U. S economy recorded no growth in the closing months of 2012, economic conditions do appear to have improved during Q1-2013, despite the concerns over payroll tax increases and reductions in government spending due to the budget sequester. A rising stock

“*The Eurozone remains the greatest risk to the global economy.*”

market, improving home prices, better job growth, reduced home foreclosures, and the bonanza of shale oil and gas production appear to have boosted short term economic expectations. Retail sales, particularly for big-ticket items such as autos and appliances, have been strong, and the use of consumer credit has accelerated. With housing starts continuing to gain momentum, residential investment will be a stronger contributor to growth in 2013.

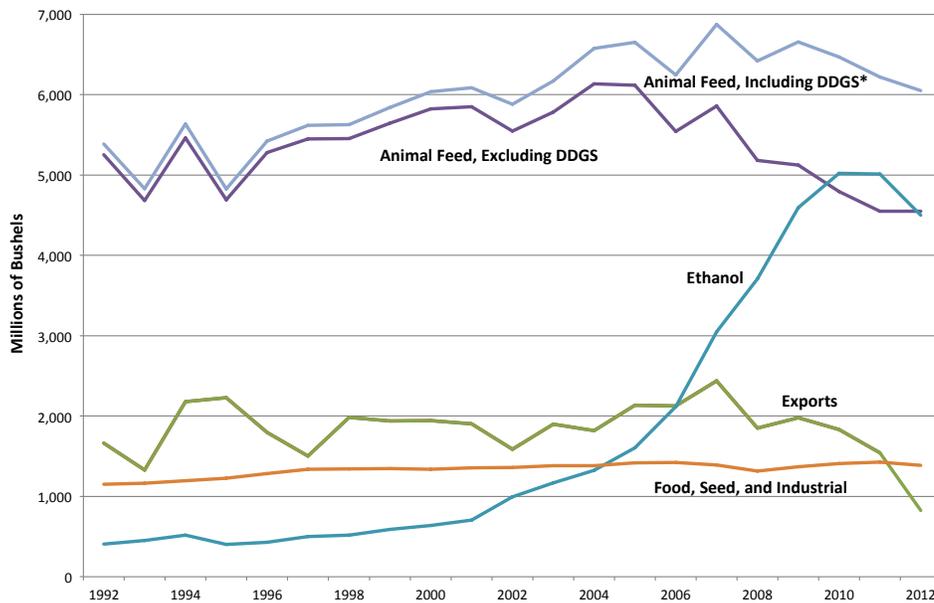
Against this backdrop, the U.S. economy is on track to resume growing at a lackluster 1.5-2.0 percent in 2013. Economic growth could conceivably be higher, but only if the pace of business fixed investment were to accelerate. The combination of significant liquidity on corporate balance sheets and the Federal Reserve's commitment to near-zero interest rates certainly offers potential for a dramatic increase in business investment. Yet major headwinds include a long list of unresolved policy issues that are discouraging companies from moving forward with new capital spending plans. Federal tax and spending programs will be reformed during the debt ceiling debate in late 2013. Health care implementation, immigration, energy policy, environmental regulation, entitlement reform, the Farm Bill, and a myriad of other business concerns pose major investment uncertainties that are likely to leave the U.S. economy on a subdued growth path well into 2014.

U.S. Agricultural Markets

Agricultural markets are now vacillating between the reality of current low stocks and expectations of abundant future supplies due to record South American harvests and the potential for bumper U.S. harvests in the fall. While Argentina's potential crops have been reduced, Brazil appears to be on track to harvest record crops. At the same time, U.S. drought conditions have improved

Exhibit 1: Alternative Corn Uses

Millions of Bushels



*Note: assumes one-third of ethanol use is returned as DDGs.

Sources: USDA and CoBank.

markedly during the past month, and the grain and oilseed markets have reacted with renewed optimism. Timely rains and favorable planting conditions will still be needed. This turn of events has introduced a wide range of price expectations for the new crop year.

The animal protein and dairy sectors have a significant stake in the prospective global grain harvests. Despite record high feed costs during the 2012/13 crop year, feed use has slipped only 2 percent, as these sectors have sought to maintain their productive capacity in the face of declining margins. Rising animal protein prices have helped to limit the downsizing pressures, and so have growing exports, especially to Asia. The smallest cattle inventory since 1952 has sharply reduced beef supplies and provided some market growth opportunities for the poultry and pork sectors. Dairy adjustments have been varied across regions and between farmers who grow their own feed and those who purchase feed. Nonetheless, if the 2013/14 U.S. crops fail to reach potential and crop prices persist at their current high levels, major realignments will be required in the animal protein and dairy sectors.

Grains, Oilseeds, and Ethanol

Aftereffects of the 2012 drought continue to unfold in the grain and oilseed markets, with rationing shaping up as the dominant theme for the latter half of the 2012/13 marketing year. Tight supply conditions for both corn and soybeans have heightened the markets' sensitivity to shifts in demand. Weather will also play an increasingly important role as the winter wheat crop develops and field work begins in preparation for corn and soybean planting. For most local grain elevators and cooperatives, 2012/13 can't end soon enough, as volumes for many elevators have dropped 25 to 60

percent compared with 2011/12. A much larger crop in 2013/14 would raise utilization rates to healthy levels for these elevators, and restore the critical profitability factor of positive carry in both corn and soybean markets.

Corn

Since the 2012 harvest, the corn market has been defined by two very different stories. Domestically, corn demand has been very strong for animal feed, as poultry and hog producers have maintained production in anticipation of a stellar 2013 harvest. (See Exhibit 1.) This has kept basis levels in record territory for much of the marketing year despite continuing sluggishness in the ethanol sector. Export demand has been extremely weak, however, as overseas orders for U.S. corn are on pace to fall to a 41-year low.

This combination of record strong basis and extremely weak exports indicates two things. First, domestic inventories are too low to allow for sizable export sales, and basis levels are making sure that they stay low. Second, estimates indicate that roughly 75 percent of the crop is already sold. The

Exhibit 2: Prospective vs. Actual Acreage Plantings

	Prospective Acreage Plantings*				Actual Acreage Plantings*			
	Corn	Soybeans	Wheat	Total	Corn	Soybeans	Wheat	Total
2013	97.3	77.1	56.4	230.8	n.a.	n.a.	n.a.	n.a.
2012	95.9	73.9	55.9	225.7	97.2	77.2	55.7	230.1
2011	92.2	76.6	58	226.8	92.3	75.2	54.4	221.9
2010	88.8	78.1	53.8	220.7	87.9	78.9	53.6	220.4
2009	85	76	58.6	219.6	87	77.5	59.2	223.7
2008	86	74.8	63.8	224.6	87.3	74.5	63.2	225

n.a.: Not available.
**Millions of acres.*
Source: USDA

remaining stocks reside mostly with farmers – and are presumably in very tight hands.

Two other factors are also progressing at record paces – U.S. imports and sales of new crop exports. Imports of corn into the U.S. this marketing year, mostly originated from Canada and Brazil, are expected to be nearly five times greater than those in 2011/12. The imported corn is heading mostly to the Southeast, where hog and chicken producers have customarily relied most heavily on eastern Corn Belt states to supply their feed. However, last year's drought sent hog and chicken producers scrambling to find alternative sources. And as everyone is now looking to the upcoming crop to refill storage and feed bins, advanced orders from foreign buyers are progressing at a breakneck pace, exceeding all previous years as of mid-March.

On March 28, the USDA issued its eagerly anticipated quarterly reports on grain stocks and farmers' planting intentions. (See Exhibit 2.) The stocks report was decidedly bearish, with the USDA's estimates exceeding the average trade estimates for corn, soybeans, and wheat. The trade estimate for corn posted the biggest miss, undershooting the USDA's figure by 400 million bushels, or 7 percent. Although corn and soybean stocks have turned out to be less depleted than analysts had feared, stocks alone fail to tell the full story. While corn and soybean March stocks had sunk to 9-year lows, the stock relative to use for 2012/13 is expected to fall to the lowest level since 1995/96 for corn, and to 1964/65 levels for soybeans.

The USDA's survey of planting intentions reports that 97.3 million acres will be sown to corn this spring, a slight gain over last year's 75-year high. Yet, even with such lofty acreage expectations, many analysts are reluctant to project a bin-busting record crop. The weather-related yield drags experienced in each of the past three years, combined with continuing drought conditions in the western Corn Belt, have produced a heightened level of uncertainty in regard to what analysts can now posit as a "reasonable" yield expectation for 2013. Thus, weather patterns from May through the key summer months of July and August will determine where average prices will fall within the broad range of \$4-7 per bushel.

Soybeans

Like corn, soybean demand was also very strong during the first half of the 2012/13 marketing year. Consumption of U.S. soybeans set a record high during the first quarter of the marketing year (Oct-Dec), and the pace has remained nearly as strong through the second quarter. The market has allowed this to take place without massive price increases only because it anticipates that a seasonal slowdown in April and May will preserve the remaining stocks, bringing export demand to an abrupt halt as Brazil and Argentina once again supply the world with soybeans for the next six months.

Domestic soybean crush margins have been very healthy since October, and this year's crush is expected to be the second largest on record. Margins have been strengthened by robust domestic and foreign demand for soybean oil and meal, boosting prices for these products.

Soy oil export shipments through the first half of the marketing year were triple those for the same period last year; and with the reinstatement of the biodiesel blenders' credit, domestic soy oil use will remain on par with last year's level.

Soybean meal consumption, here in the U.S. and abroad, has also been quite strong, and any additional export sales during the spring months would likely necessitate greater summertime imports to satisfy animal feeding needs. Currently, the USDA is projecting that soybean imports in 2013 will balloon by more than 60 percent YoY. Looming in the next couple of weeks are precipitous declines in both the crush margin and volume, as Argentina's processors take back the market. However, U.S. processors will continue to crush through the summer months, albeit at a much reduced rate, which will test the lower limits of domestic soybean inventories.

China, the world's predominant consumer of soybeans, has slowed its soybean imports somewhat in the first half of 2012/13 compared with the previous year. This is no doubt a result of the back-to-back South and North American droughts, and most analysts expect China to dramatically accelerate its purchases of South American soybeans over the next couple months. This slight dip in demand was hardly noticeable in the U.S., however, as exports have largely kept pace with the five-year average, drawing down limited supplies quickly.

Instead of continuing its torrid pace of imports during the past several months, China has elected to release a fairly significant portion of its stocks into the market. Industry estimates indicate that Chinese stocks have likely fallen by a third since last summer. China will continue to factor into the U.S. supply/demand situation in coming months, as the market waits to see whether China will cancel any of its U.S. old crop orders before they are shipped. China's crush margins have been very good, and its processors have not been willing to wait the 2 to 3 months required to get soybeans out of Brazil. Instead, they have placed orders for much more expensive U.S. soybeans well into March. Economics and logistics will determine whether all of these orders will be filled.

Soybean futures prices have made some gains against corn in recent months, but the new crop soybean-to-corn price ratio remains below the 2.4-to-2.5 mark typically needed for soybeans to steal acreage away from corn. The USDA's March 28 report on planting intentions supports this line of reasoning, with growers trimming back expected soybean acreage slightly from last year's near-record level. Problems associated with continuous corn plantings and the drought resilience of soybeans will help soybeans maintain acreage this spring, but prices would need to move higher against corn to see a net acreage loss of corn in favor of soybeans.

Wheat

The wheat market has been generally bearish for the past several months. Despite poor crop conditions in hard red winter wheat areas, prices have been falling steadily since last autumn. Crop projections have improved across Europe, Russia, and Australia, and the domestic wheat stocks-to-use ratio at 30 percent remains much less worrisome than those for corn and soybeans at 4-5 percent. With wheat futures having fallen below corn futures, hard and soft red winter wheat continues to make its way into feed rations around the country. And with global supplies of wheat expected to be more than ample, U.S. wheat will continue to follow corn and be priced as a feed grain substitute for corn.

The USDA's March 28 reports bolster the likelihood of this suggested chain of events, with the agency's projected wheat acreage rising 1 percent above last year's actual level. The USDA's estimated March wheat stocks turned out to be slightly higher than the average trade estimate, and wheat is the only major grain or oilseed crop to show an increase in March inventories relative to last year.

Above-average precipitation in some hard red winter areas of the Plains during February did help the crop's potential. But many agronomists are indicating that regardless of spring precipitation, some damage to the crop is irreversible and yields will be stunted. Precipitation over the next two months will determine whether many areas will have a crop at all, or whether

the land would be better used for corn or sorghum planting. Still, winter wheat is highly resilient, so plentiful spring rains could yet salvage a very respectable crop.

Ethanol

While most ethanol plant operators were happy to see last year end, market sentiment improved as the first quarter of 2013 progressed. Production rose through February into March, but stocks continued to fall, strengthening prices. Corn prices remained relatively static; and with oil prices adding support to ethanol prices, some shuttered ethanol plants were brought back into production in March. Ethanol inventories fell to a 4-month low in March, and were 15 percent below year-ago levels. The decline in stocks indicates that ethanol demand has been exceeding production in recent weeks, which should improve margins, but is also likely to encourage a continual uptick in production entering the second quarter.

Looking ahead, the industry is unlikely to produce enough ethanol to satisfy the Renewable Fuels Standard (RFS) blending requirements in 2013. As a result, blenders will be forced to buy leftover Renewable Identification Numbers (RINs), or credits, that were produced by blending an excess volume of ethanol in 2012. RIN values shot up from only a few cents in late 2012 to more than a dollar in early March, before falling back to the \$0.60-0.70 range. RIN markets are still thinly traded, which has contributed to the price volatility. It isn't fully known yet how many 2012 carryover RINs will be needed to meet the RFS in 2013, but estimates range between 1 and 2 billion gallons.

Ethanol margins should improve as the summer driving season approaches and stocks are further depleted. And a large corn harvest would do wonders for many of the ailing production plants across much of the Midwest.

Animal Protein and Dairy

With three months down, 2013 is shaping up as a challenging year for the animal protein sector. Tight supplies, high prices, and negative margins are plaguing the beef complex, with little relief in sight until the second

“*The pork and poultry industries appear to be betting that market conditions will improve markedly in the second half of 2013.*”

half of the year. At the same time, the pork and poultry industries are exhibiting no signs of herd or broiler flock liquidations, and both industries appear to be betting that market conditions will improve markedly in the second half of 2013 thanks to higher beef prices and lower feed costs.

Beef

As expected, cattle markets have begun 2013 with a tight cattle inventory and compressed-to-negative margins, especially for beef packers and cattle feeders. For example, beef packer margins in February are estimated to have dropped more than 20 percent below the depressed level of a year earlier. As 2013 progresses, packer and feeder margins are expected to improve, assuming that feed prices recede from their current high levels.

The number of cattle placed on feed has been trending downward since last May, posting a sharp 14 percent drop year-over-year (YoY) in February. Aided by the extra slaughter day in February, total slaughter was 5.6 percent higher YoY. A key factor pushing cattle slaughter above earlier forecasts has been closure of a Canadian packing plant, which has increased U.S. imports of culled Canadian dairy cows. Besides the obvious impact on slaughter rates, the increased importation of Canadian cattle also indicates the continued downsizing of the North American beef packing industry. Going forward, however, in view of the low domestic placements of cattle on feed in Q3 and Q4-2012, daily steer and heifer slaughter rates are expected to decrease significantly through Q2-2013.

Drought conditions continue to be a concern for the industry. Recent snows in February and March across the Plains States have improved prospects for favorable grazing conditions during the summer months. However,

drought continues to be a major concern for the Southern and Central Plains. With the cost of feed still high, coupled with the high cost of cattle, producers are taking every opportunity to put weight on cattle as cheaply as possible. Many producers are in need of healthy grazing conditions in 2013 to lower their production costs and improve margins.

With the cattle inventory having shrunk to its lowest level since 1952, the cow/calf sector is the only one still turning a profit. However, if drought conditions persist through 2013, its profitability could be at risk owing to compromised grazing conditions, inadequate hay supplies, and the dearth of water, reflected in the bone-dry stock ponds. Cattle feeders have had to contend with negative margins since March 2011. If feed prices recede with the 2013 crop, feedyard margins should begin to improve during Q3-2013.

Processors continue to be pinched and have not had positive margins since Q3-2012. Although retail beef prices are at record highs, processors have been unable to pass the full cost of beef production on to the consumer. Domestic demand for beef will be an important issue in 2013, especially given expected decreases in beef exports. A key question for 2013 will be whether domestic demand will be sustained with future increases in retail beef prices.

Beef exports got off to a strong start in Q1 with total beef shipments abroad up 5 percent YoY; and exports would have been even higher if Russia had not slapped a ractopamine ban on U.S. beef and pork products. Beef shipments increased by 151 percent to Hong Kong, spurred by strong Chinese demand for U.S. beef. Exports to Canada also remained strong due to tight Canadian beef supplies and a strong Canadian dollar. Beef exports to Mexico remained weak, down 25 percent YoY in January – mostly due to the high cost of U.S. beef and increased consumption of substitute proteins such as chicken and pork. Beef imports were up 4.7 percent in January, with beef imports exceeding exports in tonnage for the first time since June. Beef imports into the U.S. are expected to increase through 2013 to supplement tight domestic supplies.

U.S. beef exports are likely to slow as the year progresses, with strong headwinds coming from three different directions. First, the value of the U.S. dollar has climbed significantly, making U.S. exports more expensive for foreign consumers – especially in Japan and Mexico. Second, lackluster economic growth remains another impediment in several key export markets – most notably Japan. Third, ractopamine will continue to be a thorn in the industry's side with Russia having banned U.S. beef imports. Resolution to this impasse will need to be found, but it will take the USDA at least six months to devise a program to certify meat exports as ractopamine-free. If these headwinds persist, reliance on domestic demand will become especially important for the U.S. beef industry throughout 2013.

Pork

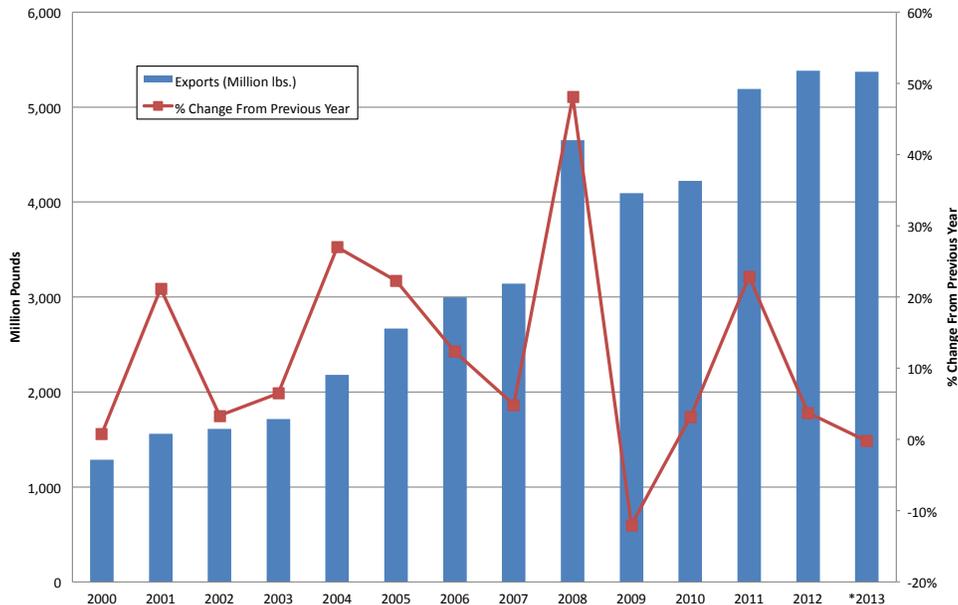
Contrary to widespread expectations that the pork industry would scale back production through Q3-2013, the industry appears to be taking a different tack. All signs indicate the pork industry is ignoring the current red ink and plans to “tough it out” until Q3 in anticipation of lower feed costs and higher beef prices.

Breeding inventory and sow slaughter numbers both support this hypothesis. The USDA's Quarterly Hogs and Pig Report for March indicated that the breeding inventory was essentially unchanged from a year ago, while sow slaughter has edged down just 1 percent through Q1-2013. Although the smaller-than-expected decline in sow slaughter rates can be partially attributed to seasonal increases, neither sow slaughter nor breeding inventory numbers suggest that a major liquidation is unfolding. Overall, pork production in 2013 is projected to be on par with what it was last year.

The pork situation is likely to go from bad to worse in coming months. Weak domestic and foreign demand has caused a glut of pork in the supply chain, and processors have cut retail prices in order to reduce their excess inventories. Cold storage numbers for the first few months of 2013 indicate that a significant overhang of pork must still be flushed from the supply chain.

Recent weekly pork wholesale prices have slipped below 2012 levels, falling below \$80 per cwt in late-February to

Exhibit 3: Total Pork Exports



* 2013 Forecast

** Source: USDA and LMIC

their lowest levels since September 2012. Similarly, lean hog prices (carcass basis) have dropped to the mid-\$70s per cwt, well below producers' breakeven levels of about \$90. With wholesale prices so far below breakeven levels, producer margins are currently well into the red – where they'll stay until either feed prices fall or herd liquidation chips away at the current supply glut. Neither of these two prospects is likely to occur until Q3-2013, at the earliest. Meanwhile, pork processor margins have drifted lower in early 2013 and are below what they were a year ago, but remain in the black.

The near-term prospects for pork exports are grim. (See Exhibit 3.) Japan has been the top importer of U.S. pork in recent years, and the recent steep fall in the value of the yen against the U.S. dollar will curtail Japanese imports of all U.S. goods, including pork. U.S. pork exports in January were relatively flat month over month – at 423 million pounds – but were 16 percent lower YoY. Exports to Japan fell 7 percent YoY. South Korea and China posted even bigger drops in January, but these declines reflected sharp rebounds in domestic pork production in both countries. South Korea's domestic industry is recovering from an outbreak of hoof and

mouth disease, while China's domestic industry is in the process of expanding numbers and stabilizing swings in domestic production.

U.S. pork exporters will encounter even stiffer headwinds in coming months. Russia has banned any U.S. exports of beef and pork that test positive for ractopamine, and China has followed suit, requiring that all U.S. pork exports be ractopamine-free as of March 1. As with beef, both industry practices and U.S. trade policy will require major adjustments to re-open these important markets. The USDA estimates that Q1 pork exports

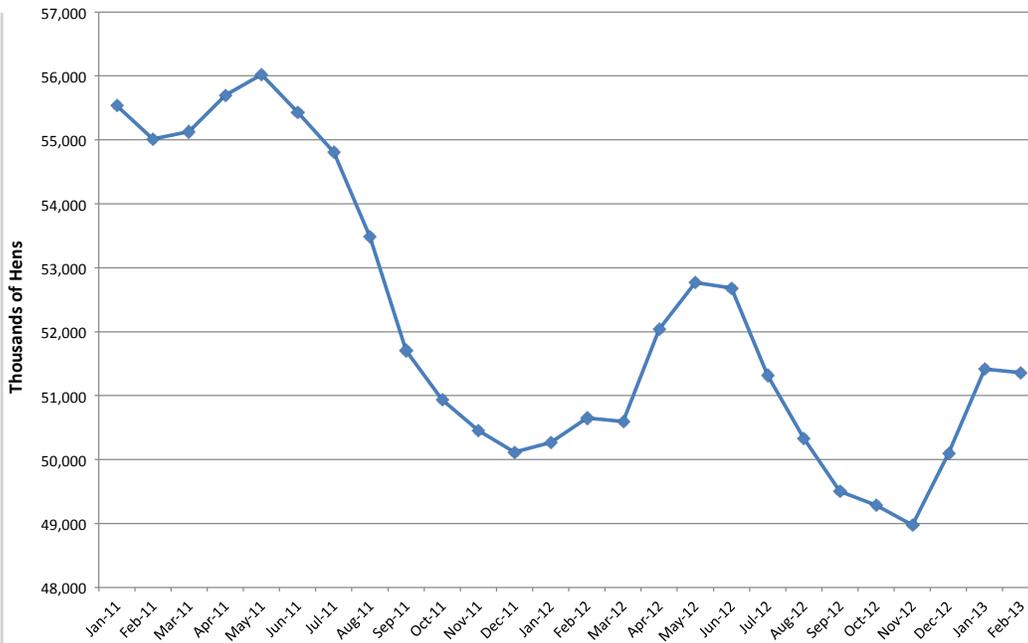
will be 10 percent lower than a year ago at 1.3 billion pounds, and it is anticipated that exports will continue to trend below 2012 levels during the remainder of 2013.

Given the expected weakness in export markets in 2013, domestic demand will become increasingly important in absorbing extra supply. Unlike the beef markets, which are struggling with tight supplies and high prices, pork markets are struggling with the opposite problem: excess supply and low prices. If the industry's gamble of ignoring current red ink in order to be well positioned to take advantage of lower feed costs and higher beef prices later in 2013 pays off, the industry could realize sizable margins and profits toward the end of 2013.

Poultry

The broiler industry demonstrated moderate restraint in Q1 and was rewarded with narrowly positive margins, although a few integrators have slipped into negative territory. Like the pork industry, the broiler industry appears to be in the early stages of increasing output, in anticipation of feed price declines in Q4-2013. Unlike the pork industry, however, the broiler industry is currently operating at a profit and is also well positioned to maintain or increase

Exhibit 4: Broiler Hatchery Supply Flock, USDA First of Month
(Thousands of Hens)



Source: USDA

profits as long as production is increased at a measured pace through the second half of 2013.

Broiler prices in Q1-2013 were well above year ago levels. February whole broiler prices were up 15 percent YoY at \$1.02 per pound, and had gained another \$0.05 per pound by the second week of March. Boneless skinless breast prices averaged \$1.42 per pound in late-February/early-March, a 12 percent increase YoY. Wing prices experienced their usual seasonal downtrend, settling at the low-to-mid-\$1.60 per pound in early- to mid-March, slightly below 2012 levels.

In response to high prices, slaughter rates have increased slightly and integrators have begun to cautiously increase production. In January, broiler meat production totaled 3.3 billion pounds, an increase of 5.6 percent YoY. This increase is attributable to a larger number of birds slaughtered, as well as an increase in the average live weight at slaughter. Average broiler live weights are expected to trend higher during 2013 as the industry continues to increase its big bird production. Aided by higher broiler live weights, total broiler meat

production for 2013 is estimated to be 2.4 percent higher than 2012 at 38 billion pounds.

The number of broiler chicks placed on feed continued to shrink during Q1, and the hatchery flock and egg supply will remain at unusually low levels throughout the year. (See Exhibit 4.) Mexico's flock has been ravaged by avian influenza, and producers there have tapped into the U.S.'s hatchery supply to rebuild their flocks. As a result, hatchery eggs in the U.S. are in short supply, and this scarcity will limit the U.S. industry's ability

to expand production quickly, even if consumer demand were to ratchet higher.

Broiler exports were up 2.7 percent YoY in January at 520 million pounds. Mexico was the top export destination for U.S. broiler meat, accounting for 20 percent of total shipments. Year over year shipments also surged to Angola (283 percent) and China (95 percent). Russia accounted for a large portion of broiler exports, importing 50 million pounds of broiler meat in January, more than double what it imported a year ago. However, broiler meat exports to Russia should be viewed with caution, given the U.S.'s currently tense trade relations with respect to the ractopamine ban.

Current turkey industry conditions resemble those in the pork industry much more than they do those in the broiler industry. Turkey margins were in the red throughout Q1, with losses averaging in excess of 10 cents per pound; and producers are scrambling to reduce production. In mid-March, House of Raeford Farms announced that it is shutting down its turkey operation, due to declining consumption and high feed costs.

As a result, the number slaughtered in January jumped 6.7 percent YoY, while turkey meat production totaled 524 million pounds, a 10 percent increase from 2012. Moreover, increased cold storage numbers and higher slaughter weights are adding further to the downward pressure on prices and margins. In January, turkey stocks were up 22 percent YoY, and the average weight of birds at slaughter increased 2.2 percent YoY. Consequently, prices for frozen whole hens in February were down 5 percent YoY and prices for breast meat were down 2 percent YoY.

Higher exports have absorbed some of the domestic turkey supply glut, due in part to cheaper turkey prices. Turkey exports were up 3.6 percent in January, totaling 56 million pounds. Mexico, the largest export market for U.S. turkey, imported 33 million pounds of turkey and accounted for 58 percent of total export shipments in January. Exports to China and Canada also exhibited strong increases of 219 and 66 percent. With U.S. turkey

prices expected to remain low, total exports in 2013 are projected to increase 8.8 percent from a year ago.

Dairy

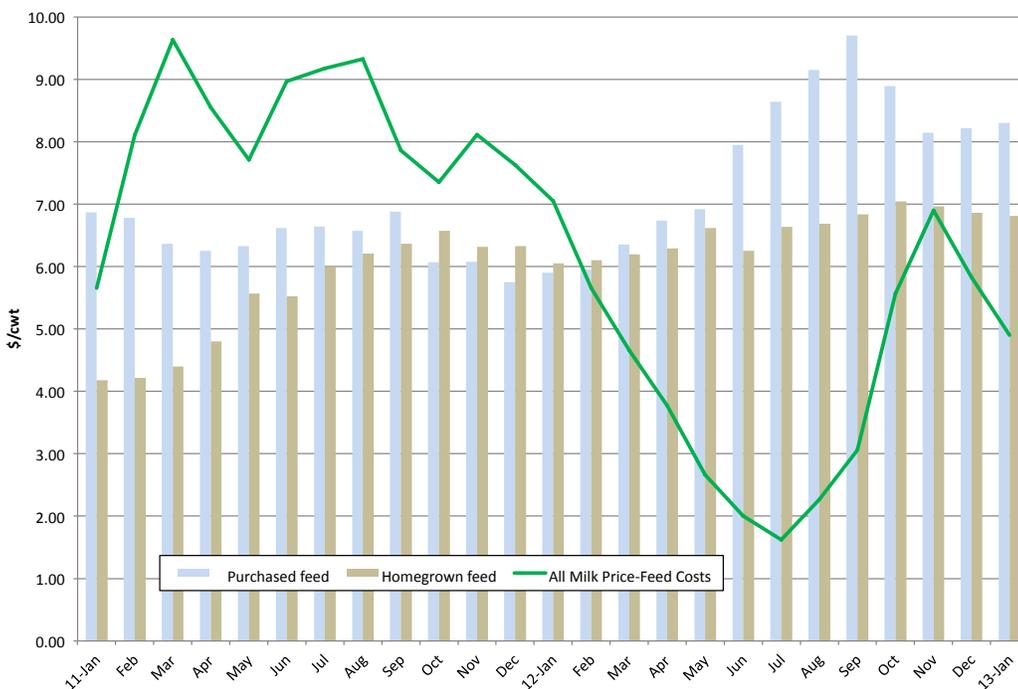
It's been a rough first quarter for the U.S. dairy industry. Class III milk prices fell precipitously in January and leveled off in the \$17.00-\$17.40/cwt range from then through mid-March. Continued high feed costs, a slower-than-expected contraction of the cow herd, higher production per cow, disappointing year-end exports, and sluggish demand in late-2012/early-2013 have all put a damper on the industry. (See Exhibit 5.) Despite some signs of improvement, the dairy complex will remain stressed over the next few months.

High feed costs are now old news, but an important dynamic has changed in the current year. While hay prices have been high in the West and South for several months, they have recently ratcheted significantly higher in the Upper Midwest as last year's already short

supplies now seem to have been whittled down to critical levels. Whereas Wisconsin hay averaged \$130/ton in December, prices there jumped above \$240/ton in January and \$260/ton in February, compared to a February national average of \$218/ton. This price bump will certainly eat further into producers' margins in a region that typically grows an abundance of feed.

As the U.S. moves towards its spring flush, milk supplies are expected to remain ample. Production in January edged up 0.5 percent YoY while production in February was unchanged YoY (after adjusting for the 2012

Exhibit 5: Dairy Operating Margins and Feed Costs



Source: USDA ERS

The USDA's monthly milk production report is scheduled to be discontinued from April 2013 onwards, due to the sequestration across-the-board cuts in spending. Its absence will present major challenges to analysts in assessing the supply-side of the dairy market going forward for this high value, perishable and volatile commodity.

leap year). Cow numbers held steady nationwide in February, with numbers continuing their slide in the West and Southwest regions. Given the continuing margin pressures and last year's mild early-spring weather, production may contract slightly YoY in March and April. From the current level of about \$17.40/cwt, the class III price is expected to firm as seasonal production declines, averaging \$18.97/cwt and \$17.93/cwt in the third and fourth quarters, respectively. For 2013, the class III price is projected to average \$17.55-\$18.15/cwt, versus \$17.44/cwt in 2012. If feed costs moderate beginning in the third quarter, producers should return to profitability in the second half of the year.

The global dairy picture is one of challenge. New Zealand, which is in its seasonal production decline, is now in the grip of a significant drought on the North Island where over 60 percent of milk is produced, and production has fallen off sharply, perhaps as much as 15 to 20 percent YoY. As New Zealand producers rely on pasture for feed, the drought has driven many of them to supplement feeding, reduce to once-daily milking, dry off cows early, or in some cases move animals to slaughter. In fact, the year-to-date slaughter is 45 percent ahead of the five year average. Australia is experiencing hot and dry conditions as well, and its output in January was down 5.5 percent YoY. In Europe, a shortage of high-quality feedstuffs and high priced feed reduced January production 2.1 percent YoY.

The sour international milk production outlook should provide opportunities for the U.S. In January U.S. exports began to rebound as sales totaled \$447 million, up 11 percent by volume and 6 percent by value from

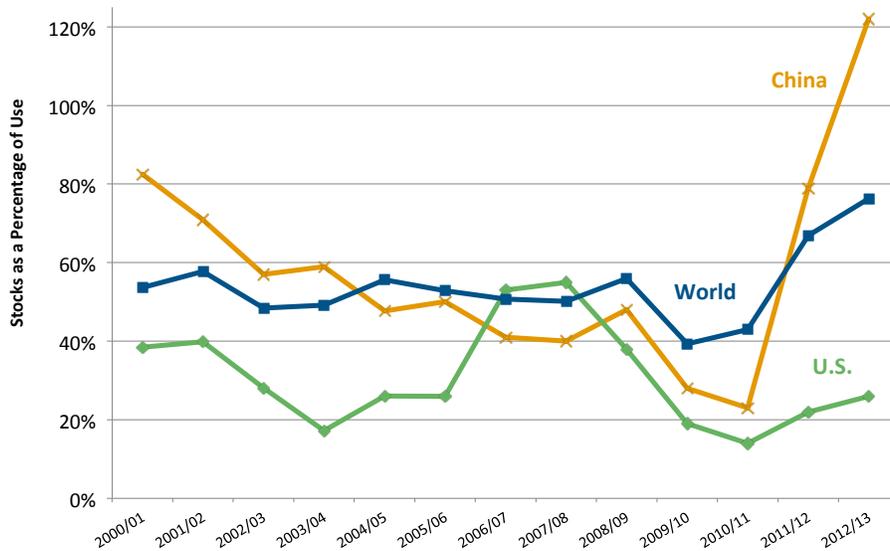
December and 4 percent by value YoY, countering the weak fourth quarter 2012 when some U.S. products were priced out of international markets. Cheese, butter, whey and lactose volumes all improved, but non-fat dry milk (NDM) and skim milk powder (SMP) are still waiting to turn the corner. Given China's continually growing appetite for whole milk powder (WMP) – a product produced in small quantities in the U.S. – and their major supplier's (New Zealand) production issues, China may reach to Europe for WMP, opening up other markets for U.S. NDM and SMP. There is still room for U.S. exports to grow, however, as January exports were 12.3 percent of milk solids equivalent production, well below the May 2010 through October 2012 pace of 13.5 percent production equivalent. On the whole, however, exports should continue to strengthen for the foreseeable future.

Going forward, consumer demand will be key for dairy products. With reduced disposable income and a continuing sluggish economy, U.S. demand growth will be limited. Butter producers will look more towards exports for growth, while cheese demand should increase nearly 2 percent domestically and 4 percent in international markets. Domestic milk powder demand will be weaker, whereas significant non-U.S. opportunities may arise. Overall, with the seasonally slow first quarter behind us, slowing milk production into summer and continued strong global demand, product prices should be supported and end up 2.5 to 3.5 percent higher on average in 2013, with only butter prices remaining on par with last year. Domestic and export demand should enable processors to capture reasonable margins through the summer months, even as seasonal milk production slows.

Other Commodities

Domestic cotton, sugar, and rice growers will be hard-pressed to maintain their current acreages in the face of the 2012/13 production shortfalls in the nation's corn and soybean crops. Rice and sugar will likely be somewhat sheltered from acreage shifts due to their favorable net returns, geographic limitations on where they can be grown, and U.S. policy. Cotton acreage, however, looks vulnerable.

Exhibit 6: Cotton Stocks-to-Use – World, U.S., and China



Source: USDA-FAS

Cotton

Cotton enters Q2-2013 on the heels of a swift price rally that launched futures from the mid-70 cent per pound range to 90-plus cents. The rally was spurred by China's continual appetite for stockpiling cotton and increasing speculative interest in taking long positions in the market. China's imports will fall in 2012/13 versus last year, but not enough to offset their decline in mill use of cotton. Chinese mill use is expected to fall 5 percent, while their share of world stocks will for the first time exceed 50 percent. (See Exhibit 6.) China will likely hold onto most of these stocks through the 2012/13 season.

The U.S. is following along a similar path. Domestic cotton consumption fell for the second consecutive calendar year in 2012, dropping 3.5 percent to the lowest level since 1996. And while exports to China and other textile producing countries rose 9 percent YoY, U.S. stocks are still slated to climb 25 percent in 2012/13 to the highest level in four seasons.

Market prices in Q1-2013 were moved mostly by speculators under the assumptions that strong import demand in Asia will continue and that China's "manufactured" cotton shortage could intensify. More than half of participants in the cotton futures market

have been non-commercial traders, which can add to short-term market volatility and cause cotton to trade on factors other than fundamentals for extended periods, as evidenced at several points since 2008. Most analysts project that China will continue to buy U.S. cotton through the remainder of the marketing year, but the pace of China's purchases is likely to decline considerably. Ample global supplies, China's faltering textile industry, and a significant price advantage for synthetics such as polyester should act as a drag on prices until they come back in line with fundamentals.

The U.S. cotton situation for the remainder of 2012/13 and into 2013/14 will be significantly impacted by the number of acres planted in the South and Southeast this spring. The USDA's March 28 report on planting intentions indicates that cotton acreage will be trimmed by 2.3 million acres, or roughly 19 percent. However, the recent rally in prices, along with diminished drought concerns in the Southeast, could limit the amount of acreage that is lost. Many market reports suggest that growers in Texas and the Southeast are taking another look at cotton, but they will only choose to maintain or increase cotton acres if they think that the recent increase in prices is sustainable.

Rice

Despite large global supplies of rice, the U.S. rice market has shown remarkable resilience in recent months. U.S. exports have surprised to the upside so far in 2012/13 even as the price spread between Asian suppliers and the U.S. has widened. The domestic rice balance sheet has gradually tightened over the past two quarters, allowing U.S. prices to decouple from the world market. Total marketing year export sales through February show a 19 percent increase YoY, which has supported the U.S. price premium. That premium is expected to

remain largely intact through the coming months, but any substantive price increases will be difficult to sustain as widening the U.S./world spread further would likely increase competition from Asian suppliers into Latin American markets.

A key risk to U.S. export sales hinges on a sharp rise in the value of the U.S. dollar, which could add to the 50 percent price difference between rice originated from the U.S. or Vietnam. Vietnam has also been gaining traction in Latin American export markets that have traditionally been relatively safe sales for the U.S.

“*The domestic rice balance sheet has gradually tightened over the past two quarters, allowing U.S. prices to decouple from the world market.*”

Many analysts expect that spring planting in the U.S. will result in a moderate loss of rice acreage as Delta growers attempt to reap results similar to last year's record returns in corn and soybeans. However, the domestic rice supply/demand situation is much tighter than that of cotton, so market fundamentals should keep a considerable number of Delta fields in rice production. USDA's March 1 survey results lend support to this argument, as their estimates indicate a minimal loss in acreage relative to last year. The March 28 rice stocks report also revealed a 2 percent decline in rough rice inventories compared with March 2012. These two USDA reports will likely furnish the most significant data points that the market will have to trade on for the remainder of the marketing year – and will provide market direction into 2013/14.

Sugar

In contrast to rice, sugar prices are likely to continue slipping in the coming season, as 2012/13 production is

estimated at a record 9.16 million short tons, raw value (STRV). Sugar beet production increased 8.2 percent YoY from improved yield. Sugar cane production outpaced a year ago by 7.6 percent due to increased acreage and yield. The projected tariff-rate-quota (TRQ) is expected to be the lowest since FY 2002 at 1.15 million STRV. This is not surprising given the less than 3 cent gap between domestic and world raw sugar prices. With an increased production estimate and use projections unchanged, ending stocks are now projected to total 2.358 million STRV, equating to a healthy 20 percent stocks-to-use ratio.

Worldwide and U.S. raw sugar prices have fallen slightly since the beginning of 2013 and have remained choppy through the last couple weeks of March. The world raw sugar price was 19.36 cents per pound in January 2013, down 4 cents YoY. However, the January 2013 U.S. raw sugar price was 22.50 cents per pound, down a full 12 cents YoY. And since January, the spread between the world and U.S. raw sugar prices has narrowed further to just 2.19 cents per pound in March. Ample domestic and world sugar supplies are likely to keep prices from rising substantially in the near term.

The USDA's Sugar and Sweeteners Outlook Report for February included sugar supply and use projections through 2022/23. The outlook estimates the potential federal government outlays required to support the U.S. sugar program, assuming the continuation of marketing allotments, domestic price supports, and the sugar TRQ. The three most important factors influencing the outlook are U.S. sugar programs, world sugar prices, and Mexican sugar imports. Two scenarios were presented. The first assumes support from world prices, and the second assumes support from the domestic price support program. Both scenarios conclude that sugar prices will remain above government forfeiture trigger levels throughout the entire projection period. This implies that minimal federal expenditures will be required to continue the current sugar program. However, production projections issued in March for Mexico indicate a higher likelihood of government outlays in 2013. It remains to be seen what types of program changes may occur as Congress continues to struggle with budget deficits and weighs a new Farm Bill.

Fruits, Nuts, and Vegetables

With spring just getting started, some niches within the fruits, nuts, and vegetables (FNV) sector are doing better than others. Spring vegetable harvests in the Southeast are ahead of schedule, spurred by a warm growing season and big yields. Although quality and yields remain strong, prices for Florida fresh vegetables remained depressed in Q1-2013 due to lagging demand from Northeast and Midwest consumers. Southern Florida got a blast of cold weather in early March, damaging about 20 percent of the sweet corn crop and decimating the region's green bean crop, sending prices soaring. Growers are expected to replant portions of the corn crop, but the damage to the bean crop occurred too late in the growing season to warrant replanting.

Analysts at the USDA are projecting that U.S. all orange production (both fruit and juice) will total 8.68 million tons in 2012/13, down 4 percent YoY. Florida's all orange production is projected to be 6.26 million tons, down 5 percent YoY. Sparse rainfall, heavy fruit sets, and added stress from citrus greening have led to increases in fruit drops throughout Florida citrus orchards. As a result, Florida's frozen concentrated orange juice producers are expected to curtail production by about 1 percent in 2012/13. California's all orange production is forecast to remain steady in 2012/13 YoY at 2.36 million. The quality of California's orange crop is on par with last year's, with higher fruit sets per tree offset by smaller average fruit size.

California's water scarcity has taken a turn for the worse. Growers in California's San Joaquin Valley recently were notified that their surface water allocations will be reduced 50 percent YoY to just 25 percent, given that January and February were the driest combined months on record. Planting will likely shift from annual row crops like cotton and lower-value vegetables in order to divert water allocations to higher-value perennial crops like tree fruits, grapes and tree nuts.

California's almond bloom wrapped up in early March, with favorable weather for adequate orchard pollination. Although there were early concerns of bee shortages during the bloom, most growers were able to get adequate supplies of bee hives. California's almond

“*Growers are becoming increasingly concerned that they will not be able to source adequate, reliable labor for the 2013 harvests.*”

growers expect to harvest around 2.2 billion pounds of almonds in 2013, up 10 percent from last year's crop.

Other challenges plaguing the FNV sector include labor and regulatory issues. Growers are becoming increasingly concerned that they will not be able to source adequate, reliable labor for the 2013 harvests. Such an outcome would be a recurrence of last year's labor shortage which prevented crops from being harvested during peak times in Q3 and Q4. With scarce labor supplies, the USDA estimates that farm labor costs will increase 10.8 percent YoY in 2013. The higher costs of sourcing adequate farm labor will be a strain on all FNV growers, small and large.

On the regulatory front, the FDA recently released proposed produce safety regulation under the 2011 Food Safety and Modernization Act (FSMA). The proposed rules outline enforceable safety standards for the production and harvesting of fresh produce. The cost of implementing the proposed rule is estimated to be \$30,000 annually for large farms and \$13,000 annually for smaller producers. These regulations do not come as a surprise to the FNV industry, as many growers have been waiting for the FDA to release formal guidance and regulations since the FSMA was enacted in 2011.

Farm Supply

Net farm income is projected to climb 13.6 percent in 2013 to \$128.2 billion, its highest level on an inflation-adjusted basis since 1973. The largest contributor to this growth will be the eagerly anticipated “bin-busting” grain volumes from trend yields with increased production outweighing price declines. Total farm expenses are expected to increase 5.8 percent in 2013 to a record \$353 billion.

Most analysts are calling for planted acreages in fertilizer-intensive crops to increase in the upcoming 2013/14

marketing year, with the exception of cotton. Assuming more normal weather patterns this spring, corn planting will likely total 96-100 million acres, bolstering fertilizer consumption. Strong farm balance sheets and ample insurance coverage for the 2013/14 crops will support crop inputs and fertilizer applications despite the uncertainty of springtime precipitation in many areas. Crop returns continue to favor corn over soybeans, but the disparity has been narrowing. Given the projected growth in 2013 farm income and last year's near-record farm income, farmers will likely choose to purchase the fertilizers and crop protectants needed to push yields as high as efficiently possible in the coming season.

Fertilizers

Fertilizer prices are expected to abate slightly in 2013 due to trend yield expectations and thus lower crop prices. (See Exhibit 7.) The USDA projects that fertilizer expenditures will edge down 0.4 percent in 2013. This time around, weather will again play a role in how fast the application season progresses. Water levels along the Mississippi River have recently improved creating

favorable barge freight rates to attract business back to the river. In any event, with many producers having pre-booked their springtime needs and many retailers having sourced their inventories early due to last fall's low river conditions, many retailers and growers are well positioned to fulfill their springtime fertilizer needs.

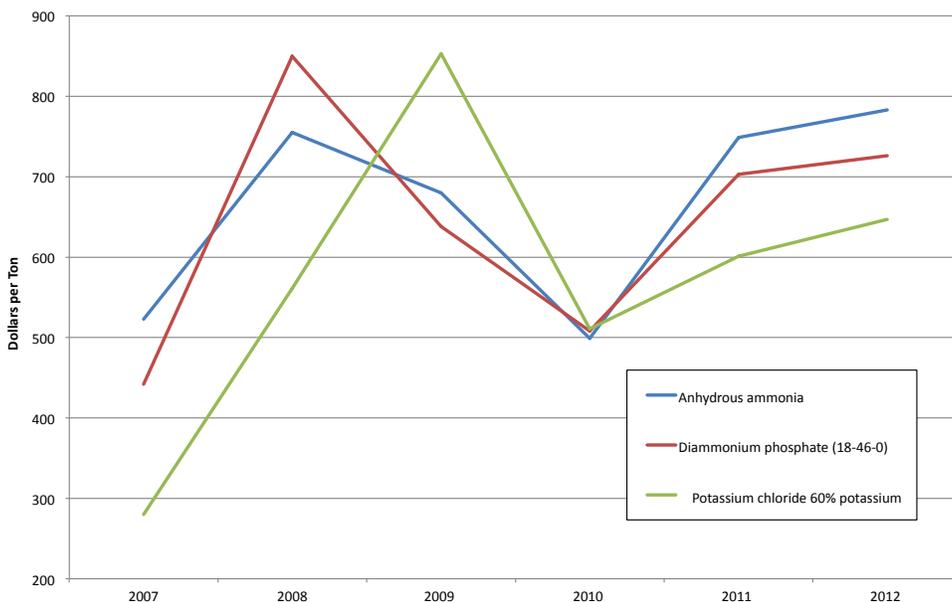
Ammonia markets have remained relatively flat in early-2013. Anhydrous ammonia imports were up 23 percent in January, but remain near year ago levels for the July-January time frame. Ammonia prices appear to be rising slightly as the planting season approaches. Near-term, the ammonia price may strengthen as demand picks up, but lower urea prices will likely limit price escalation in the medium term. Further out, local supply should increase as domestic plants come back online.

The urea market has remained fairly steady since the beginning of 2013. Uncertain weather conditions appear to have curtailed demand in late-2012/early-2013, but recent Corn Belt precipitation will undoubtedly help restore confidence back into the market. Urea imports in January were up 54 percent YoY while cumulative

imports in July-January were up 38 percent YoY. Some urea may be substituted for UAN as urea continues to be priced competitively on a per-unit nitrogen basis.

Mid-Corn Belt UAN prices have been increasing since the beginning of 2013. Heading into the planting season, UAN continues to be the product of choice for wheat top-dress and side-dress needs. While UAN imports in January were down 26 percent YoY, those for July-January were up 34 percent YoY. As the application season continues, UAN prices are likely to remain firm or strengthen slightly. In contrast

Exhibit 7: Select Fertilizer Prices



Source: USDA NASS

to last spring, urea may gain price support from UAN as the spring application season progresses.

Phosphate prices remain on a downward trajectory due to ample supply. Many phosphate producers have curtailed supplies to support prices. The spring corn pre-plant application is off to a slow start; however, as recent weather developments have caused delays while providing sorely needed moisture. Midwest DAP prices have fallen around 11 percent from their fall 2012 highs. As the spring planting season progresses, DAP demand should strengthen and bolster prices.

“Strong farm balance sheets and ample insurance coverage for the 2013/14 crops will support crop inputs and fertilizer applications despite the uncertainty of springtime precipitation in many areas.”

Lackluster demand for potash continues to weigh down prices. Midwest potash prices have continued their downward trajectory since November 2012. Retailers continue to be reluctant to build inventory amidst low seasonal demand, and are generally buying on an as needed basis. Potash production is expected to decline to reduce supplies and manage inventory buildup. In the near term, potash prices should remain flat.

Other Crop Inputs

The USDA's projected 5.8 percent increase in total farm production expenses will be driven mostly by prices rather than volumes, given the forecast of fewer total planted acres.

Continued robust corn and soybean planted acreages, strong commodity prices, and improved genetics will likely keep seed expenditures on an upward trajectory.

Seed prices are expected to increase about 3 percent YoY in 2013, well below last year's 8 percent run-up. Some growers are concerned that the drought-stricken crops of 2012 may lead to reduced seed availability due to reduced volume and potential germination problems. However, the major seed companies reportedly are monitoring the situation closely to make sure that they have adequate supplies, and many have ramped up South American seed production to counter domestic shortfalls. Despite seed companies' assurances that overall supplies are ample enough to handle demand, some growers are still concerned that the companies may have to limit allocations of their most popular varieties.

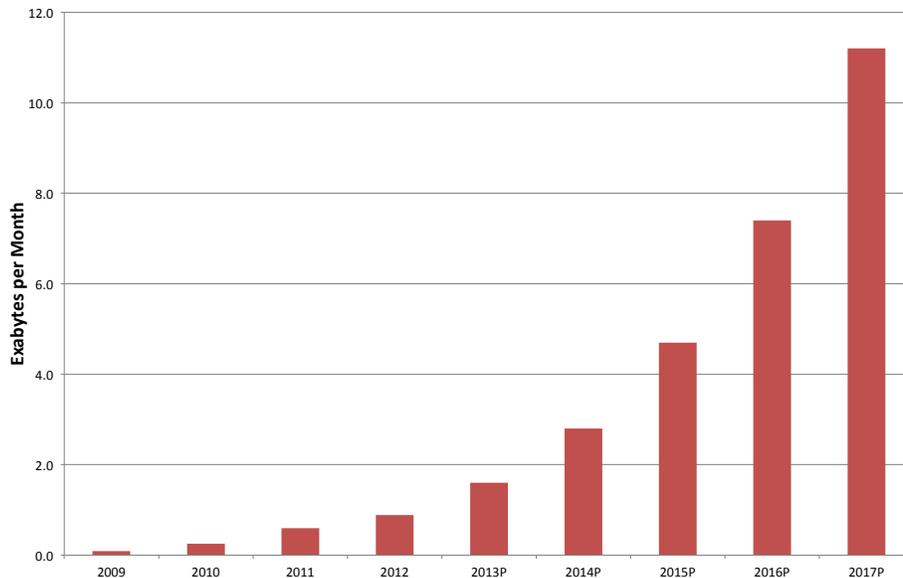
While the occurrence of trend yields would reduce commodity prices, current commodity price and insurance levels will likely incent farmers to purchase and apply appropriate amounts of insecticides and herbicides in 2013 to reach optimum yields. In 2013, pesticide expenses are expected to rise 1.6 percent YoY, while prices paid for pesticides are expected to climb 2.7 percent in 2013. In general, prices paid for pesticides have been far less volatile than those of many other farm inputs.

Other Farm Expenses

Farm production expenses cover many things besides crop inputs such as fertilizer, seed, pesticides, and herbicides. These "other" expenses account for roughly 38 percent of total farm production operating or variable costs (i.e., total costs excluding overhead and fixed costs).

Some of these other variable expenses will likely post double-digit growth rates. Marketing, storage and transportation expenses, for instance, are anticipated to jump 16.2 percent YoY owing to the larger commodity volumes. In addition, short-term interest expense is expected to soar 22.3 percent in 2013, due to higher loan volume rather than an increase in interest rates. These interest expenses will be driven mainly by increased capital requirements tied to the heightened volatility in the commodity markets, and by capital spending on equipment and machinery. A key tax provision (i.e., Section 179 depreciation, including 50 percent bonus depreciation) is expected to bolster

Exhibit 8: Global Mobile Data Traffic, 2009-17



P: Projected

Source: Cisco VNI Mobile Forecast, 2013.

machinery and equipment purchases in 2013 given that the current \$500,000 depreciation limit is slated to fall to \$25,000 in 2014. This reduction could impact decisions to lease rather than purchase equipment and machinery in 2014.

Fuel and oil expenses are expected to decline 1.9 percent YoY to \$15.7 billion in 2013. Diesel, the main fuel used for field equipment, averaged \$3.71 per gallon in 2012. Crude oil accounts for about 59 percent of the cost of diesel, refining for 13 percent, distribution and marketing for 16 percent, and taxes for the remainder. The USDA projects 2013 fuel and oil expenses will decline 6.7 percent due to reduced refiners acquisition costs (RAC) and slightly lower total planted acres.

Rural Infrastructure

Communications

When combined with users' seemingly insatiable demand for streaming video, the proliferation of wireless devices has unleashed a voracious appetite for bandwidth across the globe. Cisco's latest Virtual Network Index reports that global mobile data traffic soared 70 percent in 2012 and

anticipates continued rapid growth at a rate of 66 percent a year for the next five years. (See Exhibit 8.) Video accounted for 51 percent of the worldwide mobile data traffic in 2012, and its share is projected to climb to 66 percent by 2017.

Consumer and enterprise computing is also booming, as these user groups look to store their vast mountains of data in the cloud. Although these trends bring countless opportunities, they also usher in weighty challenges, as communications providers must make significant capital investments to build robust networks to deliver the data capacity and speeds that the market demands. For rural players,

the obstacles are compounded by regulatory uncertainty and dwindling network support.

Data center and fiber transport operators, including those in rural areas, are benefiting from the rising data and cloud computing trends. Both of these technology agnostic segments stand to profit from all increases in data traffic, whatever their source. According to the 2011/2012 Datacenter Dynamics Industry Census, data center companies invested \$9.2 billion in 2012, to accommodate the rise in demand. The expectation of a 9-fold increase in U.S. mobile data traffic over the next five years and simultaneous need for more wireless backhaul will be particularly beneficial to fiber companies.

Merger and acquisition (M&A) activity within the data center and fiber transport segments has been robust for the past several years, and industry insiders expect 2013 to be another active year. Fiber transport deals will continue to be driven by buyers' desire to increase capacity and extend or fill-in their existing footprints. Similar interests will drive data center deals as well, although this group will continue to see telcos and, increasingly, cable companies enter the bidding in an effort to diversify their revenue streams.

Rural local exchange carriers (RLECs) continue to look for ways to ramp up their non-regulated, broadband-based services and revenues in order to replace declining legacy revenue and federal support. However, the heightened level of uncertainty surrounding the future of cost recovery mechanisms that has gripped the industry since the Federal Communications Commission (FCC) released its Broadband Plan in 2010 has subdued investment. In a recent survey, the NTCA found that 69 percent of its member-respondents have delayed or abandoned broadband projects, totaling more than \$500 million in would-be network investments.

In the coming months, RLECs will continue to be active in those FCC proceedings addressing various Connect America Fund programs that will provide long-term and one-time support to help stimulate broadband deployment in underserved rural areas. The rural industry may have an advocate in Commissioner Pai who has publicly stated that the FCC has not done enough to promote regulatory stability and predictability. RLECs will also be attuned to proceedings that address the coming IP transition, as RLEC opponents maintain that incumbent LECs should no longer receive support based on landline service, as the public-switched telephone network (PSTN) will likely be shut-down in the next 10 years in favor of an all-IP network. Subsequently, all RLEC investments will need to recognize and address the fact that the PSTN, and all legacy support tied to that network, will be phased out. Due to the extreme uncertainty, deal flow among RLECs will remain sluggish for the rest of 2013.

Despite the cloudy outlook, RLECs do have options to ensure future success. Many companies, for example, have elected to roll out more non-regulated services, form partnerships and alliances, and adopt sales-oriented business cultures to improve their bottom lines. As the FCC establishes more rules and programs for rural areas, such as the recently announced Rural Health Care Program, savvy RLECs will no doubt be analyzing them carefully, looking to uncover any new opportunities.

Rural wireless providers are experiencing similar regulatory challenges, especially when it comes to support for serving sparsely populated areas. As data

“*Rural cable companies are finding success in delivering high speed data services to enterprise customers and providing fiber transport services to wireless companies.*”

demands from smart devices intensify, so do demands for more spectrum. Going forward, rural wireless operators will be advocating for rural-friendly conditions in the auctions for the second phase of the mobility fund, which will be rewarding ongoing network support. Many rural operators were successful in receiving deployment support in the first auction, so the players are optimistic. Wireless companies are also being urged to begin discussions with state emergency officials to collaborate on grant applications for FirstNet, the public safety wireless broadband network program, which will also allow commercial traffic on a secondary basis.

Wireless M&A activity should hold steady in coming months. Carriers are looking to acquire spectrum to widen their coverage areas and increase network capacity, while some smaller players are opting to exit the business. Industry insiders continue to scrutinize average revenue per user (ARPU), with the rising revenues from data having more than compensated for the drop in revenue from voice in past years. However, analysts anticipate that total ARPU will begin to erode at a certain point.

The cable industry's net subscriber losses have slowed markedly during the past year, and operators interpret this slowdown as a sign that the industry's subscriber-base will soon stabilize. While the big cable companies evidence little concern that cord-cutting and over-the-top options will erode cable subscribership because they account for just 2.5 percent of the TV-viewing population, analysts see a different story. Cable subscription rates are flat, cord-cutting is growing, and many analysts warn that cable providers may never see traditional video subscribers emerge from today's youth who meet their TV needs with streaming content.

Many cable providers have rolled out TV-Everywhere services, allowing subscribers to access content on mobile devices, yet the Wall Street Journal reports that fewer than 20 percent of subscribers have utilized this new feature. Content costs continue to creep higher, posing a major problem for the rural cable companies that lack the scale necessary to bargain effectively with the programming giants, thus making their broadband revenues more important than ever. For instance, rural cable companies are finding success in delivering high speed data services to enterprise customers and providing fiber transport services to wireless companies. The enterprise market was not historically a focus for cable companies but now promises to be a major growth area for them.

Rural cable companies will likely remain actively involved in the FCC broadband support proceedings to ensure that funding is not awarded to an area where an unsubsidized cable provider provides broadband service. Cablevision's antitrust lawsuit against Viacom is another issue that concerns cable providers as the outcome could enable a-la-carte cable pricing.

Despite challenges and concerns, cable M&A activity is expected to remain steady and active in 2013. Upgraded cable systems with existing subscriber bases will remain attractive acquisition targets for telcos, other cable companies, and private equity investors.

Electricity Industry

U.S. electricity consumption slipped nearly 2 percent in 2012 YoY – but has been essentially trendless for the past five years. (Statistics for year-end 2012 are the latest available.) With U.S. economic growth expected to hover in the range of 1.5 to 2.0 percent, the U.S. Energy Information Administration (EIA) is projecting that electricity demand will increase no more than 0.5 percent during 2013. In light of the continuing weakness in consumption, many energy analysts have come to believe that the long-run trend growth in electricity consumption has tapered off to less than 0.5 percent a year due to ongoing improvements in the efficiencies of appliances and building shells.

As a result of reduced power demand and low overall fuel prices, on-peak spot electricity prices fell sharply in 2012 from a year ago. Power prices declined 6 percent year-over-year in Southern California, 18 percent in Northern California, 42 percent in Texas, 10-15 percent in the Upper Midwest, and 20-30 percent in the East. Similarly, the average price paid by all retail customers edged down to 9.87 cents/kWh in 2012 from 9.90 cents/kWh a year ago. Retail prices declined for commercial, industrial, and transportation customers, but rose slightly for residential customers.

Power operation companies expanded their capacity about 1.3 percent last year. New capacity totaling 25,136 MW was added to the U.S. power grid in 2012, including 8,056 MW (32 percent) of natural gas fired capacity, 11,173 MW (44 percent) of wind capacity, 3,619 MW (14 percent) of coal-fired capacity, and 1,171 MW (5 percent) of solar capacity. However, the utilities also retired 10,150 MW of capacity nationwide, 78 percent of which consisted of coal-fired power plants. Regulatory and tax policies continue to favor the development of renewable generation and gas-fired peaking facilities, while discouraging development and retention of base load coal-fired generation.

As a result of these governmental policies, coal likely will remain relatively inexpensive on an energy-content basis for the foreseeable future. Central Appalachian coal prices have declined from about \$92 per ton in early 2011 to approximately \$60 per ton today. Declines in coal-fueled power consumption caused coal stockpiles at electric power generators to climb well above the five-year average throughout 2012. Coal consumption fell about 11.3 percent in 2012 YoY. The EIA is projecting that coal-fueled power consumption will increase over the next 18 months in response to higher natural gas prices.

Wind power installations posted a record year in 2012. Uncertainty over whether Congress would extend the Production Tax Credit for wind power generation led to a flurry of wind power projects before year-end 2012. However, in January 2013, Congress extended the Production Tax Credit as part of the "fiscal cliff" legislation. This latest extension of the Production Tax Credit applies

to all projects under construction by December 31, 2013, even if those projects are not completed until 2014. Due to last year's uncertainty about the extension of the Production Tax Credit, wind project installations are expected to taper off during the early months of 2013, but then ramp up during the later months.

Energy Policy – Regulatory Update

The last energy policy bill enacted by Congress and signed into law was the Energy Independence and Security Act of 2007. Since then, neither Congress nor the Administration has expressed any interest in revisiting energy policy, and there's been no new legislation. It would be a mistake, however, to conclude that U.S. energy policy is "dead-in-the-water." In fact, the Environmental Protection Agency (EPA) and the courts have emerged as the two rulemaking kingpins of U.S. energy policy.

Looking ahead to 2013 and 2014, the electric utility industry is closely monitoring several EPA regulatory initiatives that could potentially alter the futures of coal- and gas-fired power generation. Four separate rules are in the regulatory pipeline:

- One rule outlines the Mercury and Air Toxics Standards (MATS) designed to limit emissions of mercury and other hazardous substances from coal and oil-fired power plants with a capacity of 25 megawatts or more. The EPA is supposed to issue a final rule by March 2013.
- Another rule involves the Cross State Air Pollution Rule (CSPAR), designed to help "downwind states" meet the nationwide air-quality standards limiting emissions of nitrogen oxide and sulfur dioxide. Coal-fired power plants in about two dozen eastern states would be required to install costly scrubbers to reduce those emissions. Last year, the courts ruled that the EPA's original CSPAR was flawed, providing coal-fired plant operators with a reprieve. Lawyers for the EPA filed for a rehearing, but the Court of Appeals for DC rejected the EPA's motion at the end of January 2013. In the interim, as the EPA regroups and prepares to formulate a revised CSPAR, the EPA's previous rule, the Clean Air Interstate Rule

(CAIR) will remain in effect (even though the courts had previously rejected CAIR as flawed).

- A third rule will dictate whether coal ash will be regulated as hazardous or non-hazardous waste. Both approaches would entail costly compliance measures including groundwater monitoring at existing storage pits and surface impoundments along with corrective action for any contaminated groundwater. A final ruling is expected sometime in 2014. (Environmental groups and coal ash recyclers, however, have asked the courts to accelerate the timing.)
- A fourth rule deals with standards for water intake towers used by power plants to draw cooling water from rivers and other water bodies. Congress enacted section 316(b) of the Clean Water Act 35 years ago to address this environmental issue, but the issue remains unsettled. The EPA is scheduled to issue a final rule by July 2013.

These four initiatives bode ill for coal-fired power plants. However, over the years, the EPA has learned that it must tread carefully. Aligned on one side are proponents of coal-fired plants who want to see less stringent rules that will allow them to continue to operate their plants and open new ones. Aligned on the other side are environmentalist groups that want to see stricter rules designed to limit damaging pollution and greenhouse gases. Invariably, the EPA's rules displease both sides, and one or the other turns to the courts to advance its point of view.

In a surprise move, the Administration sent up a trial balloon in mid-March suggesting that it may be reconsidering its greenhouse-gas rules for new coal and gas-fired power plants. The EPA had issued these proposed rules on March 27, 2012; and the final version was due to be released on April 13, 2013. It is generally agreed that the new so-called New Source Performance Standards (NSPS) for new power plants would effectively block new construction of any future coal-fired power plants. Several recent reports from the Washington Post, the Wall Street Journal, and other newspapers indicate that the EPA will likely miss the April 13 deadline and that the Administration is considering

weakening the proposed rules for new power plants to the point where new “clean coal” power plants could be built incorporating the current best commercially demonstrated technology.

Natural Gas

Natural gas prices have edged higher in recent months. The Henry Hub natural gas spot price closed at \$4.08/MMBtu on March 29, 2013, up sharply from \$3.42/MMBtu on December 31, 2012. Though low by historical standards, natural gas prices have been trending upward since mid-April 2012 when they bottomed out at \$1.82/MMBtu. (As recently as 2008, spot natural gas prices topped \$13/MMBtu.)

“*The new shale basins lie in areas of the country that were previously unproductive and thus largely bypassed by the existing network of natural gas pipelines.*”

Natural gas production increased 4.5 percent in 2012 from a year ago, despite low natural gas prices. High crude oil prices have spurred producers to continue to drill for oil in shale formations, and natural gas is typically produced along with this shale oil. Although the natural gas rig count fell from 818 rigs in December 2011 to 420 natural gas rigs in early March 2013, the oil rig count has increased from 1,196 rigs to 1,333 rigs over that same time period. Because shale wells exhibit a very rapid decline in performance for both oil and gas, even a small drop in the oil rig count is likely to cause reductions in overall gas supply over time. Given the moderately strong drawdown of gas inventory in storage during the 2012-13 winter season, the near-term gas “bubble” should continue to shrink during the 2013-14 winter season, depending on weather conditions over the coming year.

Growing consumption should also help to deflate the near-term gas bubble. Natural gas demand for power generation is likely to continue to increase, driven by the power supply trends described above. Natural gas consumption for power generation has increased by 61 percent over the past 10 years, growing from 5,672 BCF in 2002 to 9,137 BCF in 2012. Moreover, in response to global gas pricing dynamics, many suppliers are maneuvering to be able to export natural gas from the U.S. In April 2012, Cheniere’s Sabine Pass terminal became the first facility to win approval from the Federal Energy Regulatory Commission to export liquefied natural gas (LNG) from the U.S., and suppliers are seeking approval for another 20 or so North American LNG export facilities. Over the next three to five years, the combination of increased natural gas demand for power generation and for LNG exports should put upward pressure on natural gas prices.

Increased drilling for gas and oil in shale formations has also led to substantial growth in the production of natural gas liquids (NGLs) throughout the U.S. As a result, NGL prices have slipped below 2011 levels, with ethane and propane prices trading near the bottoms of their five-year ranges. At the same time, however, the price of butane – another NGL, whose price is highly correlated with oil prices – has held up much better than the other NGL prices.

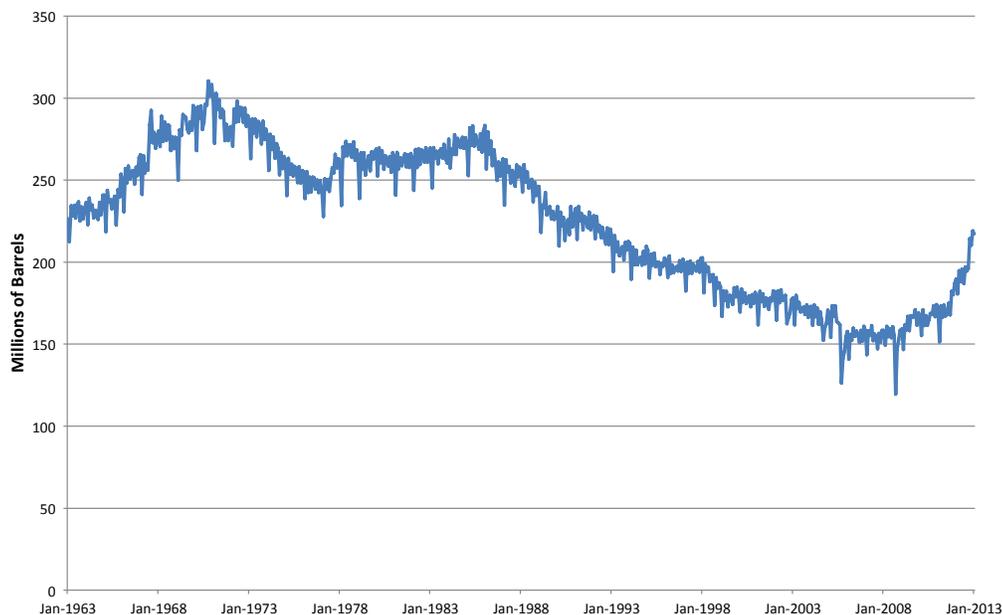
Midstream Gas and Oil Infrastructure Market

For all of its future promise, the natural gas industry must first address a serious supply-side constraint. North America’s existing natural gas pipeline grid was built primarily to move gas from the Gulf Coast, the southwestern U.S., and western Canada to the major population centers throughout North America. However, the new shale basins lie in areas of the country that were previously unproductive and thus largely bypassed by the existing network of natural gas pipelines.

Opportunities and challenges abound. Major new capital investments in infrastructure are needed to move natural gas from the newly emergent shale basins to the population centers of the country, including new

Exhibit 9: U.S. Field Production of Crude Oil

(Millions of Barrels)



Source: U.S. Energy Information Administration.

gathering systems, processing plants, transmission pipelines, storage fields, and LNG terminals. Some of the existing grid infrastructure, moreover, is nearing the end of its useful life and will need to be replaced. While estimates of total capital needs vary widely, they tend to cluster in the range of about \$200 billion, give or take \$50 billion.

Finding the capital needed to finance these new projects will be one challenge, but getting the projects approved could prove to be even more daunting. All of these new natural gas midstream infrastructure projects will need to get regulatory approval before they can be launched. Many observers question whether the industry's existing regulatory structure will be able to accommodate the flood of approval requests that will be filed with the regulators. Some observers are advocating that the pipeline industry's complicated regulatory structure should be overhauled and streamlined so that these new projects can be completed on a timely basis.

In addition, substantial capital investment will be required to gather, process, and transport the growing supply of NGLs to market from shale basins throughout

the U.S. NGL fractionation capacity (i.e., the refining capacity needed to separate ethane from propane from butane) is presently operating nearly at full utilization, and substantial additional fractionation capacity is needed and under development. Also, surplus NGL volumes are being exported to offshore markets. For example, on March 6, 2013, Boardwalk Pipeline Partners and Williams announced a joint venture to develop the Bluegrass Pipeline project to transport 200,000 barrels per day of

NGL's from the Marcellus and Utica shale plays in the Northeast to an export complex on the U.S. Gulf Coast.

Oil Markets

As of March 25, 2013, the spot price for West Texas Intermediate crude oil closed at \$94.55 a barrel, versus \$91.83 at year-end 2012 and \$90.64 a year ago. At present, oil prices are approximately four to five times higher than natural gas prices on an energy-equivalent basis.

With oil prices having remained strong, domestic U.S. oil production has increased dramatically in recent years. (See Exhibit 9.) U.S. crude oil production bottomed out in 2008 and has increased 29 percent since then, and the U.S. now imports approximately 45 percent of its oil consumption, down from over 60 percent in the mid-2000s. Geopolitical events in the Middle East and increases in the U.S. monetary supply have supported elevated oil prices, despite the dramatic increase in the domestic U.S. oil supply. Furthermore, restrictions in the use of hydraulic fracturing technology in some areas, restricted drilling access to Federal

lands, the delayed approval of the Keystone Pipeline from Canada, and offshore drilling restrictions in the wake of the April 2010 BP oil spill in the Gulf of Mexico have all hindered even further potential increases in the North American oil supply.

Even as production increased here in the U.S., liquid fuel consumption fell to its lowest level since 1996. At 18.6 million barrels per day, U.S. liquid fuel consumption was 2.2 million barrels below its peak level of 20.8 million barrels per day, which was reached in 2005. Liquid fuel consumption has declined in six of the last seven years. Higher petroleum prices have encouraged more efficient use of petroleum products, including improved fuel consumption standards for motor vehicles, as well as substitution of more economical fuels for oil. U.S. crude oil stocks are now well above the five-year range, and refiners are increasingly turning to export markets as an outlet for their refined products.

The current oversupply of domestic crude oil, however, has not translated into sharply lower gasoline prices. As of March 11, 2013, the average price of regular gasoline in the U.S. was \$3.64 per gallon, versus \$3.25 at year-end 2012 and \$3.75 a year ago. Heating oil costs are averaging \$4.06 per gallon, a decrease of only 4.2 cents per gallon from one year ago. Gasoline prices had been as low as \$3.20 per gallon in late-2012 and tend to rise towards the end of the first quarter and beginning of the second quarter of every year, as futures markets anticipate increased summer demand.

Water Industry

Droughts and temporary water shortages are forcing many industries and groups to re-examine their water consumption practices. Many farmers, for example, are re-inventing their operations to economize on the use of water. Some are relying on new irrigation technologies such as laser field leveling, drip irrigation systems, and enhanced soil moisture monitoring – all designed, as one pundit put it, to yield “more crop per drop.” Other farmers are switching to less water-intensive crops. In western Arizona, farmers are switching from cotton and alfalfa to more valuable but less thirsty crops such as citrus and grapes.

“*Droughts and temporary water shortages are forcing many industries and groups to re-examine their water consumption practices.*”

Town and city residents are also adapting. In response to droughts and temporary water shortages, many water utilities, especially in the West, typically impose water restrictions and temporary price surcharges. The public’s conservation efforts often yield startling results. Southwestern cities like Albuquerque and Las Vegas have managed to reduce their consumption per capita from 200-300 gallons per day to approximately 100 gallons per day. Similarly, following the drought of 2002, Denver succeeded in reducing its daily water consumption by nearly 20 percent. In some instances, however, these successful efforts at water conservation have proved burdensome to the water utilities supplying those conscientious consumers, because they have resulted in lower revenues. Many of these utilities have had to raise their rates, leaving their customers in an awkward situation where they are asked to pay more even as they use less water – not a very effective way to reward conscientious conservation efforts. California’s Public Utilities Commission addressed this problem back in 2008. It created financial mechanisms designed to decouple water sales from revenues and remove the financial disincentives for investor-owned water utilities to encourage water conservation. ■

This quarterly update is prepared by the Knowledge Exchange Division and covers the key industries served by CoBank, including the agricultural markets and the rural infrastructure industries.

Terry Barr

Senior Director, Knowledge Exchange

Daniel Kowalski

Lead Analyst, Grains, Oilseeds, and Ethanol

Luke Brummel

Analyst, Farm Supply Industry

Alison Krebs

Director, Knowledge Exchange

Rachael Dettmann Spiegel

Senior Analyst, Animal Proteins

Leonard Sahling

Manager, Knowledge Exchange

**CoBank's Knowledge Exchange Division welcomes readers' comments and suggestions.
Please send them to KEDRESEARCH@cobank.com.**

Disclaimer: *The information contained in this report has been compiled from what CoBank regards as reliable sources but is provided for general informational purposes only and is not advice. CoBank does not make any representation or warranty regarding the content, and disclaims any responsibility for the information, materials, third-party opinions, and data included in this report. In no event will CoBank be liable for any decision made or actions taken by the user while relying on information contained in this report.*