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SPECIAL REPORT

12 DRY AS A BONE: The Drought Will Affect Ratings In Some U.S. Corporate Sectors

By David P. Wood, Managing Director, New York

From the fields to the shopping cart, the impact of the most severe U.S. drought since the 1950s has been broad, with nearly half of the nation's counties declared as natural disaster areas. Although the drought is having a relatively modest effect on our corporate ratings so far, should it continue through the 2013 growing season, the credit ramifications will be wider and more serious.

20 U.S. Drought Will Likely Wilt Crops More Than Demand For Agricultural Equipment

By Dan Picciotto, CFA, New York

Even though the U.S. drought has driven down crop yields, our ratings on agricultural equipment manufacturers should remain stable. We think high crop prices and the widespread use of crop insurance will mitigate the effects of the drought. In fact, we expect farmers' income and cash receipts for this year and next to generally remain robust. Another factor working in equipment manufacturers' favor is the global nature of their businesses.

24 Will Fertilizer And Agricultural Chemical Producer Ratings Weather The U.S. Drought?

By Paul J. Kurias, New York

In general, fertilizer companies face greater exposure to the effects of the drought than seed and agricultural chemical companies. Vulnerabilities vary, in our view, depending on the degree to which each company relies on sales to the U.S. agricultural markets affected by the drought. Although this situation is still unfolding, we believe the drought will not affect credit quality sufficiently to result in rating changes.

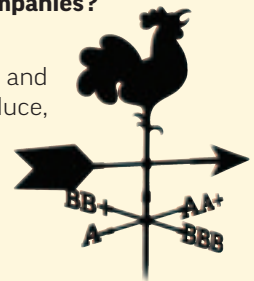


29 Will America's Drought Wither Ratings For U.S. Food, Grain, And Ethanol Companies?

By Jeffrey A. Burian, CFA, New York

The drought could hurt revenues and earnings for companies that produce, process, and distribute grain, food, alcohol, and ethanol products, and could affect their ratings or outlooks to varying degrees—particularly if it were to continue through the 2013 growing season.

The drought has already caused a marked drop in corn yields and stocks and an associated rise in prices this year. Soybean and wheat prices are also up substantially.



34 U.S. Barge Companies Navigate Through Shallow Waters

By Funmi Afonja, New York

The U.S. drought is weighing on barge transport companies in more ways than one. The drought has caused water levels to fall, making it difficult for barges to navigate the inland river systems. As a result, barges are operating at slower speeds and carrying reduced volumes. The drought also has damaged crop yields, causing reduced cargo volumes for domestic shipping companies that transport agricultural commodities such as corn, soybeans, and wheat.



38 Drought Shrinks Railroads' Grain Traffic

By Anita Ogbara, New York

Across the U.S., shippers and transportation companies alike have been feeling the pain of the most severe U.S. drought since the 1950s. Nonetheless, the drought is having relatively little effect on our ratings on large Class I railroads—Union Pacific Corp., Burlington Northern Santa Fe LLC, CSX Corp., Norfolk Southern Corp., Canadian National Railway Co., Canadian Pacific Railway Ltd., and Kansas City Southern—which should navigate drought conditions adequately given the sector's freight diversity and efficient operations.



41 Drought Will Hurt U.S. Crop Insurers, But Won't Dry Them Up Completely

By Jason S. Porter, CFA, New York

With the corn and soy crops severely damaged, this year's harvest will be substantially less than in past years. Farmers will call on crop insurers to defray their financial losses, and we expect they will see some of the worst underwriting results on their books of business since the drought of 1988. However, the results will be manageable because of loss sharing from the U.S. government, among other things.

44 The Drought Spurs Municipally-Owned Utilities To Rethink Their Long-Term Plans And Funding

By Theodore A. Chapman, Dallas

While Standard & Poor's believes the drought's immediate credit impact on most utilities is small, we note that nearly every state already had plans to deal with this eventuality and that planning has been indispensable. The drought placed fresh emphasis on the sector's needs and long-term challenges. Our view of the current impact assumes that the drought does not prolong or become more pronounced.

51 A Prolonged Drought May Leave Some U.S. Local Governments Parched

By Emmanuelle Lawrence, Dallas

The worst U.S. drought in more than 50 years is hurting rural and urban communities, especially those that depend heavily on revenue from agriculture and water-related tourism, and those susceptible to wildfires. A piecemeal federal approach to drought relief isn't helping matters, and Congress hasn't taken meaningful action. So far, the effect on state and local government ratings has been limited, but the full effects of the drought are still unknown.

EDITOR'S NOTE: Through this series of reports titled "Dry As A Bone," Standard & Poor's Ratings Services is providing insight as to how the current drought in the U.S. can potentially influence corporate and municipal credit quality.

DRY AS A BONE

The Drought Will Affect Ratings In Some U.S. Corporate Sectors

Overview

- Though the current U.S. drought is the worst in over 50 years, it has, to date, had only a limited impact on the credit quality of nonfinancial corporate debt issuers.
- If the drought should extend into 2013, however, rating implications would be more grave.
- Currently, we view ethanol and poultry producers as being the two most at-risk corporate subsectors because of the drought.

From the fields to the shopping cart, the impact of the most severe U.S. drought since the 1950s has been broad. The U.S. Department of Agriculture (USDA) has designated nearly half of the nations' counties as natural disaster areas. But the drought is having a relatively modest effect on Standard & Poor's Ratings Services' ratings on corporate borrowers—at least this year. Not surprisingly, though, if the drought continues through the 2013 growing season, the credit ramifications will be wider and more serious.



From a credit perspective, we have identified 22 U.S. nonfinancial corporate subsectors for which the drought (or a protracted drought) is (or could) impair revenues and earnings. Of these industries, we see ethanol processors and poultry producers as having the greatest downside ratings risk in 2012.

Summary Of The Potential Effect On Subsector Ratings

In the case of investment-grade ethanol processors (those rated 'BBB-' or higher), we see the potential for negative rating outlook revisions, and even one-notch downgrades, in 2012 and 2013. The industry's currently weak profits pose an even higher risk to the credit quality of speculative-grade borrowers in the sector (those rated 'BB+' or below), and could possibly lead to some further defaults as early as this year. For chicken producers, we believe the 2012 drought could lead to both negative outlook revisions and one-notch downgrades for some investment-grade and speculative-grade issuers. A two-year drought could have a high impact on speculative-grade chicken producers' credit quality, with some issuers at risk of downgrades of up to two notches.

For some other sectors in 2012 with downside credit quality risk from the drought, we believe the effects will be mainly limited to outlook revisions to negative. Industries in which some issuers have already been, or are likely to be, affected in this regard include grain and animal-feed processors and distributors.

Of course, should the drought persist through 2013, the ratings effects would almost certainly be considerably more severe. In addition to the sectors mentioned above, industries in which some downgrades would likely occur in the case of an extended drought include beef, pork, dairy, and packaged-food production, food distribution, supermarkets and restaurants, and the grain and animal-feed sectors. We believe, at this point, that most of these downgrades would be limited to one notch.

For producers of fertilizer, agricultural chemicals, and seeds, we see the drought as potentially positive for revenues and profits, owing to increased demand for their products later this year and into 2013. However,

we don't believe these benefits will be large enough to lead to any rating upgrades.

The ultimate effects on credit quality in many industries will depend on the extent to which companies can pass rising costs through to consumers via price increases. It will also depend on their ability to improve operating efficiency, their sales diversification outside the U.S., and balance sheet strength.

We've examined the degree to which we believe the drought will affect ratings this year and through 2013 if it persists (*see table 1*). We assessed the effects on ratings and outlooks using the following scale:

- VERY HIGH—suggesting potential defaults by weaker entities;
- HIGH—indicating potential one- to two-notch downgrades;
- MEDIUM—implying potential one-notch downgrades; and
- LOW—having little or no effect on ratings, with the potential for some negative outlook revisions.

The Impact On Agricultural Commodity Prices And Farm Incomes

Crop yields have fallen materially, and prices have risen markedly this year (*see table 2*). Yet the effects on the revenues of U.S. grain farmers has been considerably more muted than in previous major droughts—the most recent of which was in 2008. This is largely because of materially increased crop insurance and subsidies in recent years, higher grain prices this year, and the benefits of good harvests in the past few years.

Cattle ranchers have been harder hit as a result of lower levels of government support, the Texas drought last year, and the lack of material beef price increases. The U.S. cattle herd—at 97.8 million head—is at its lowest since the USDA began keeping records in 1958. High grain prices and the shrinking availability of grass and alfalfa feed are forcing many ranchers to reduce their herds, both by increased slaughter and reduced calf birth rates. Meat prices have remained relatively stable compared with cereals in the short term because of herd reduction. However, we expect meat prices to spike materially later this year and into 2013 as the impact of the reduced herds plays out.

Subsector Breakdown

Ethanol processors

High corn prices directly affect ethanol producers, as they are a significant input cost. Despite U.S. regulatory support, weak North American gasoline demand has lowered the amount of ethanol needed. In addition, refiners are able to dip into ethanol inventories rather than hike prices during periods of high corn prices. Our outlook for the sector is negative, and we expect marginal producers, particularly speculative-grade ones that are smaller or lack business diversity, to come under significant ratings pressure. On July 30, we lowered our rating on Aventine Renewable Energy Holdings Inc., a midsize ethanol producer, to 'SD' (selective default) after it agreed to a debt forbearance, in large part because of weak margins.

For investment-grade companies that are typically larger and more diversified, the credit risk in a one-year drought scenario is low to medium. We revised our rating outlook on Archer Daniels Midland Co., (A/Negative/A-1), one of the two largest U.S. ethanol producers, to negative on Aug. 2, in part because of the effects of higher corn costs on future ethanol margins. We also changed the outlook on Valero Energy Corp. (BBB/Negative/—), the third-largest producer in the U.S., to negative in early August, following the announcement that it plans to divest its retail operations. We believe investment-grade producers, most of which are well diversified, could face a medium risk to credit quality in a two-year drought, particularly if mitigating business factors weaken.

In the long term, we believe the U.S. Environmental Protection Agency's (EPA) Renewable Fuel Standard (RFS) will effectively support a base level of ethanol demand, allowing the most efficient producers and those with enough liquidity to weather periods of margin volatility to survive. A recent call from bipartisan lawmakers, including 25 U.S. senators, to suspend the RFS highlights an ongoing risk for the industry, particularly during lean fiscal periods with high commodity prices. While we don't expect the elimination of the RFS, such a

move could have major negative implications for the sector.

Poultry producers

Of the three primary meat industries, we believe chicken producers will most feel the effect of a one- or a two-year

drought. Chicken production is the most susceptible to feed costs (the majority of which are for corn and soy-based meals). Moreover, the industry has a history of overproduction, which has made it difficult to raise prices to offset higher feed costs. We believe a one-year drought

Table 1 | Degree To Which The Drought Could Affect Subsector Ratings

Potential for one-notch downgrades through to defaults	—Impact of one-year drought—		—Impact of two-year drought—	
	Investment-grade	Speculative-grade	Investment-grade	Speculative-grade
Ethanol processors	Low/medium	Very high	Medium	Very high
Poultry producers	Low/medium	Low/medium	Medium	High
Food distributors	Low	Low	Medium	Medium
Supermarkets	Low	Low	Medium	Medium
Restaurants	Low	Low	Medium	Medium
Animal feed processors and distributors	Low	Low	Low/Medium	Low/Medium
Grain storage, processing, and distribution	Low	Low	Low/Medium	Low/Medium
Drybulk barge companies	Low	Low	Low	Medium
Pork producers	Low	Low	Low/Medium	Low/Medium
Beef producers	Low	Low	Low/Medium	Low/Medium
Dairy product processors/producers	Low	Low	Low	Medium
Packaged food producers	Low	Low	Low	Medium
Fertilizers	Low	Low	Low	Low
Agricultural chemicals	Low	Low	Low	Low
Seed producers	Low	Low	Low	Low
Farm equipment	Low	Low	Low	Low
Freight railroads	Low	Low	Low	Low
Alcoholic beverage producers	Low	Low	Low	Low
Hydraulic fracturing	Low	Low	Low	Low
Merchant power	Low	Low	Low	Low
Regulated electric utilities	Low	Low	Low	Low
Regulated water utilities	Low	N/A	Low	N/A

N/A—Not applicable.

Table 2 | U.S. Agricultural Price Changes (%)

Dates/periods	Wheat	Corn	Soybeans	Live cattle	Lean hogs
7/31/11–7/31/12	32.08	21.19	27.08	5.55	(9.56)
12/31/11–7/31/12	36.08	24.75	43.60	(3.28)	10.26
5/31/12–7/31/12	37.89	45.25	28.43	1.52	3.51

would have a low to medium impact on chicken producers' credit quality, and a two-year drought could have a high impact on speculative-grade producers' creditworthiness. We have already revised the 'B' rating outlook on Pilgrim's Pride Corp. (B/Negative/—) to negative from developing.

Food distributors

For now, we believe the probability of near-term negative rating activity resulting from the drought on food distributors such as Sysco Corp. (A+/Negative/A-1) and US Foods Inc. (B/Stable/—) is low overall. Although some initial customer resistance to distributor price increases is likely, we think the profit impact would be moderate and, over time, distributors would recoup most food cost inflation through price increases. The more significant risk, in our view, is the potential negative impact that a two-year drought would have on consumer demand for food away from home. We could see negative ratings activity resulting from volume declines, as consumers dine out less frequently in order to save money, in combination with persistent price resistance from restaurants and other commercial customers.

Supermarkets and Restaurants

We are expecting a bout of inflation beginning in the second half of this year and extending at least well into 2013. We are anticipating that a culling of the cattle herds will initially translate into lower retail prices for some meat products as a result of the additional supply going to slaughter. But we think this will be short-lived, and we expect much higher prices once supplies level off and then begin to decline.

Consumers will likely be more prudent with their grocery purchases by hunting for bargains and specials. Although this could have some short-term impact on rated supermarket companies, moderate food-price inflation is often good for this sector. We expect companies such as Kroger Co., Safeway Inc. (both BBB/Stable/A-2), Ingles Markets Inc. (BB-/Stable/—), and Whole Foods Market Inc. (BBB-/Stable/—) to raise

prices to counter their higher costs. Eventually, when cost pressures subside, we think that prices for groceries will remain at that higher level and result in better margins and cash flow. Based on this, we don't see any significant pressure on credit ratings from the drought.

As for restaurants, we think rising input costs will result in higher menu prices. However, as consumers hesitate to eat out or trade down from casual dining to fast food, companies such as Darden Restaurants Inc. (BBB/Stable/A-2), Brinker International Inc. (BBB-/Stable/—), Ruby Tuesday Inc. (B/Stable/—), and OSI Restaurant Partners LLC (B/Positive/—) may experience some market share pressure. The fast-food companies, such as McDonald's Corp. (A/Stable/A-1), Yum! Brands Inc. (BBB/Stable/—), and Burger King Corp. (B+/Stable/—), on the other hand, will likely enjoy increased traffic. But even for fast-food restaurants, we expect difficulties in fully passing on higher commodity costs. Still, at this point, we don't believe that higher-rated casual restaurants will come under enough pressure to jeopardize credit ratings. Nor do we see that happening for major fast-food companies.

If the drought extends into 2013, ratings repercussions could be more serious. A protracted drought could crimp customer traffic in supermarkets and restaurants, and margin pressure could weigh on EBITDA and credit-protection measures.

Animal feed processors and distributors

We believe a one-year drought would have little or no effect on ratings for animal feed processors and distributors, but would carry the possibility of some negative outlook revisions, depending on the business and/or product diversification of the company. Feed distributors in North America are primarily investment-grade and participate in several business lines beyond feed—such as seed and other crop-protecting products. Moreover, we don't expect livestock herds to be culled at once, further mitigating the effects of a one-year drought. In fact, we think there could be a short-term benefit to feed sales as

cattle (often land-grazing) are brought to feed lots for early slaughter. Still, a prolonged drought could lead to significant declines in herds and less time at slaughterhouse feed lots as smaller and younger animals go to slaughter. In this case, a two-year drought could result in some one-notch downgrades.

Grain storage processing and distribution

While a smaller crop means less grain to process or distribute, relatively stable demand for agricultural products and the geographic diversity of grain merchandisers and processors would likely mitigate any effects on credit quality over the near term. Companies' vast networks and market knowledge will, in our view, allow them to position their sourcing and distribution (including sourcing grains from outside the U.S.) to manage through the drought. Therefore, a one-year drought would have only a low impact, in our opinion, and the effects would still be only low to medium even in a two-year drought.

Drybulk barges

The operating results of the U.S. drybulk barge companies we rate will likely remain vulnerable to crop yields and demand in the U.S. and abroad. Still, we believe that long-term charter coverage (i.e., vessels' operating days under committed contracts of at least a year) and diverse service offerings should temper the near-term effects of the drought and weather-related disruptions on profitability. If, however, drought conditions persist, operators could suffer more significant revenue and earnings declines. Some 2013 one-notch ratings downgrades for speculative-grade issuers could occur.

Beef and Pork

Commodity beef and pork processors' credit quality is less susceptible to one- and two-year droughts than their poultry counterparts, primarily because the borrowers we rate in these sectors have improved their balance sheets and are better-positioned to manage through weaker earnings. Still, we have revised

one outlook to negative—that of Cargill Inc.—in part because of the weak beef environment. All told, the overall risk of weaker credit quality for beef and pork processors is low in a one-year drought scenario. The risk is only moderately elevated, to low to medium, for a two-year drought, primarily because of meat companies' improved balance sheets.

Dairy products

While most of the major milk-producing states aren't experiencing severe drought conditions, the drought is affecting feed costs and dairy herd sizes, as well as milk production per cow. Dairy farmers are facing the prospect of reduced milk/feed price margins, which leads to reductions in the size of herds dairy farmers are willing or able to maintain. One-notch downgrades are a possibility for speculative-grade issuers if the drought were to extend into next year. For example, a continuation of drought conditions beyond 2012 could negatively impact our outlook on Dean Foods Co. (B+/Positive/—).

Packaged foods

The degree to which the drought will affect each company in the packaged foods sector depends on the company's commodity basket composition, as well as its ability to push through price increases and reduce costs. The amount of private-label penetration or substitutes in its categories will also be a factor.

We believe the effects of one- and two-year droughts on the ratings of investment-grade packaged-food makers and producers of non-alcoholic beverages will be low. This is because these companies have relatively strong financial risk profiles, including greater cash flow generation, operating scale, and liquidity, to withstand additional cost increases. We also believe that the effects of the drought on rated speculative-grade packaged-food companies will be low over the next 12 months because most of these borrowers have taken actions to offset the cost inflation they are currently experiencing. If drought conditions persist for another year, however, these companies could

face low-to-medium downside ratings risk because they tend to have limited scale and less pricing power, which may lead to liquidity constraints. The companies that currently carry negative outlooks are especially vulnerable to rating pressure.

The companies with the most grains and proteins in their commodity baskets may very well feel the greatest pinch from the drought. Packaged food companies with higher grain exposure include Post Holdings Inc. (B+/Stable/—), General Mills Inc. (BBB+/Stable/A-2), Kellogg Co. (BBB+/Negative/A-2), Ralcorp Holdings Inc. (BBB-/Negative/—), and Flowers Foods Inc. (BBB-/Stable/—). Those with the most protein exposure include Kraft Foods Group Inc. (BBB/Negative/A-2) and The Hillshire Brands Co. (BBB/Stable/A-2). Those companies that are unable to offset rising costs or, in the case of investment-grade borrowers, pursue more aggressive financial policies in conjunction with weaker operating performance will face the greatest risk of a negative rating action.

Fertilizer, agricultural chemical, and seed producers

The drought will likely contribute to continuing high fertilizer demand into next year as farms try to offset a weaker-than-anticipated 2012 crop and increase planted acreage and fertilizer application in 2013. The drought didn't meaningfully affect fertilizer sales for the key 2012 spring planting season because farms largely made fertilizer purchases before the impact of the drought hit. Planted acreage for corn—a key crop as far as fertilizer demand goes—was at very high levels of 96 million acres in 2012, and the USDA now forecasts it to be at similar levels next year. Overall, the ongoing strength in demand, combined with favorable natural gas prices for nitrogen-based fertilizer producers and generally favorable prospects for long-term demand, will likely support the credit quality of the rated North American fertilizer producers.

If the drought extends beyond this year, or if legislative changes like a waiver of the ethanol mandate come

about, there will probably be a higher level of uncertainty in demand for 2013—but we don't expect a negative effect on credit quality as our base case. Most rated North American fertilizer companies are well-diversified, and the U.S. market makes up a minor portion of their overall revenue. Demand overseas continues to be favorable, with increased demand from South America and Asia for fertilizers including potash and phosphates. In addition, many rated fertilizer producers have strong leverage-related credit measures for their ratings and have some cushion for weather-related risks. Still, an extended drought or unexpected setbacks to the farm economy are key risks to our base-case expectations.

We don't expect the drought to have much of an effect on rated agricultural chemical producers' credit quality, with the exception of fertilizer producers—including producers of herbicides and pesticides, and seed producers. While there may be some uncertainty related to demand in the second half of this year, it's unlikely that it will meaningfully decline. Most agricultural chemical producers are diversified geographically and from a product standpoint. Even within the U.S., many agricultural producers focus on a range of farmed produce, including fruits and vegetables, grown in a broader geographic area than the drought-affected regions.

Similarly, we expect credit quality at rated seed producers to remain stable under our base case. Domestic seed production for sale into farms is focused on select well irrigated areas and, in some instances, is supplemented by overseas seed production. Seed producer products with drought resistant traits could potentially benefit from a slight uptick in demand if the drought extends itself beyond 2012.

Agricultural equipment companies

The drought will not likely affect ratings for equipment manufacturers, in our view. Still, a number of risks remain, such as the drought's impact on domestic equipment demand from those who've been hurt the most, such as livestock farmers. Also, we see the potential for changes in mandated levels of ethanol

blended into gasoline (which the USDA predicts will use more than 40% of domestic production this year). In addition, a protracted drought could affect farmer confidence or trigger further reductions in livestock herds. Offsetting these risks are farmers' high income levels in recent years and healthier balance sheets than in decades past. On the other hand, we believe that livestock farmers—who don't benefit from similar levels of insurance coverage—will be more seriously affected as withering pastures and soaring feed costs work through the system and hit their bottom lines, although federal disaster assistance may mitigate this concern.

Rated manufacturers are global providers of equipment, so to the extent that other regions (such as South America) benefit from higher prices, manufacturers could see increased equipment demand overseas. We believe that a two-year drought would increase the risks, but we see a low probability of downgrades.

Freight railroads

Despite weak grain volumes, we expect overall volumes will rise modestly this year and next, given the freight diversity of the large Class I rated railroads. Volume gains will likely come from automotive, chemicals, domestic intermodal (combining railroad transport with other modes such as trucking), and shale natural gas-related traffic. Weakness in grain and utility coal will likely offset some of this added volume. Overall, we don't expect reduced grain volumes or a prolonged drought to have a significant credit impact on the rated railroads. In our view, pricing gains, better operating efficiency, and cost controls will likely result in earnings, cash flow, and credit measures that support ratings through next year.

Alcoholic beverages

We expect the ratings impact of a one- or even two-year drought to be low for the investment-grade and speculative-grade U.S. alcoholic-beverage makers overall. Most companies have some product and geographic diversification, and typically

source key ingredients locally for their production outside the U.S.

Hydraulic fracturing (fracking)

A prolonged drought would likely have a modest impact on the creditworthiness of borrowers in the oil and gas exploration and production sector. While the majority of new well development incorporates hydraulic fracturing (a water-intensive process in which pressurized fluids are injected into an oil or gas reservoir to enhance well productivity), no rated issuers have thus far reported any significant disruptions in operations or modification of development plans due to difficulties in procuring water. While there is anecdotal evidence suggesting water supply could become a bigger issue in certain areas, the industry has numerous techniques for mitigating potential supply disruptions. These include tapping into underground aquifers, sourcing non-potable water, the reuse of industrial wastewater, water recycling, and short-haul trucking. For this reason, we don't anticipate that the drought will have a meaningful disruptive impact on development plans through next year. While we anticipate that the drought could reduce the profitability of a number of companies, we believe that the overall industry impact will be modest.

Merchant power

Under drought conditions, coal and nuclear plants, which intake large amounts of water, are more susceptible to curtailed power generation. In the U.S., over the hot summer months this year, there have been reports of some plants curtailing power production because the cooling water temperatures were too high. Examples of power plants that have experienced this include Exelon Corp.'s (BBB/Stable/A-2) Braidwood nuclear plant in Illinois, Dominion Resources Inc.'s (A-/Stable/A-2) Millstone nuclear plant in Connecticut, and FirstEnergy Corp.'s (BBB-/Stable/—) Perry nuclear plant in Ohio. While a prolonged curtailment could materially affect a merchant company's financial measures, such reductions have been short term to date, and haven't

affected credit quality. Broadly, though, merchant power producers that rely heavily on coal or nuclear-fired generation—with a large proportion of generation in drought-prone areas such as the Southwest or Texas—would feel the greatest effect, in our view.

Also, the U.S. power industry has thus far put off the effects of water-intake rules into future years. But frequent incidents of drought conditions could hasten these rules, affecting merchant operators' cash flows. For instance, New Jersey regulators want to build expensive new cooling towers at its Oyster Creek nuclear station, but the company has said the cost—estimated at more than \$800 million—would be more than the 45-year-old plant was worth. However, these decisions are several years into the future. While Exelon has announced that it will shutter Oyster Creek, it won't decommission the plant until 2019.

Regulated electric and water utilities

As with merchant generators, persistent drought conditions could affect some operations at regulated water and electric utilities. When water temperatures exceed a threshold, operators may need to curtail—or even shut down—power production from generating units at a plant site. However, because we view regulation as generally supportive of credit quality, we don't expect drought conditions, even if they extend into next year, to impair the credit ratings on regulated utilities.

For regulated water companies, a prolonged drought could result in an undersupply of water for their customers. To manage this, rate-regulated water utilities plan conservatively, maintaining more than sufficient supply. Additionally, mandatory restrictions provide an added cushion if water-supply levels were to materially decline. However, in a more extreme drought, utilities would be required to buy water in the open market, increasing their costs. Some utilities have a regulatory mechanism that allows them to pass these costs to customers, preserving cash flow measures and credit quality.

Others would defer these increased costs, filing for recovery in a future rate case. This could weaken a water company's cash flow in the short term, possibly pressuring its credit quality. We don't anticipate that credit quality at any of the regulated water companies we rate will suffer as a result of the current drought, or even if the drought extended into next year.

This summer, regulated electric utilities have reported no material curtailments due to high water temperatures. Regulators generally permit regulated utilities to recover replacement power in a timely manner, ultimately preserving their credit quality.

Most of the U.S. regulated utilities that materially rely on hydroelectric generation, such as Idaho Power Co. (BBB/Stable/A-2) and Avista Corp. (BBB/Stable/A-2), are in the Pacific Northwest. Despite the drought, hydro conditions generally remain strong. This is because the Pacific Northwest has been much less exposed to the extreme drought than the middle of the country, and approximately 80% of the water that flows through the Northwest's dams is snow-pack runoff, rather than rainfall. The Northwest has had a more robust snowfall than usual this year, assuring that the current drought—or even an extended one—wouldn't hurt regulated utilities' credit quality. **CW**

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U.S. Drought Will Likely Wilt Crops More Than Demand For Agricultural Equipment

Overview

- The severe U.S. drought will hurt farmers with significant livestock exposure and could damage overall farmer confidence.
- We expect the widespread use of crop insurance and high crop prices will mitigate the economic effects of the drought on crop farmers that buy most of the agricultural equipment.
- Our ratings on agricultural equipment manufacturers will likely remain generally stable, unless the drought lasts two years or more.

This summer's drought in the U.S. has been, by some measures, the most severe since the 1950s and has hit major crop-growing regions in the Midwest especially hard. Even though the drought has driven down crop yields, we expect our ratings on agricultural equipment manufacturers will remain stable. We think high crop prices and widespread use of crop insurance will mitigate the effects of the drought. We expect farmers' income and cash receipts for this year and next to generally remain robust. In fact, Deere & Co., the biggest U.S. agricultural equipment seller, has recently estimated record net cash receipts and income for 2012 and 2013, with record levels of more than \$400 billion and \$110 billion, respectively, for next year.

Another factor working in equipment manufacturers' favor is the global nature of their businesses. Some regions are likely to step up activity to take advantage of high export prices, which should help soften the blow if domestic demand declines. Furthermore, high domestic farmer income in recent years and healthier balance sheets than in past decades should help them weather a difficult season.

Still, the industry faces a number of risks. The drought has had an impact on domestic equipment demand from those who've been hurt the most, like ranchers or farmers with significant livestock exposure. Domestic biofuel demand is likely to be down as long as corn input costs remain high. The potential suspension or reduction in mandated domestic levels of ethanol production (which is blended into gasoline) could also hurt farmers. And a protracted drought could diminish farmer confidence or trigger further reductions in livestock herds. We are monitoring these risks and the potential effects, but we believe it's too early to say our ratings on the sector will likely change.

The Largest Equipment Manufacturers Operate Globally

Standard & Poor's rates the world's three largest agricultural equipment (tractors, combines, and other related equipment) manufacturers: Deere & Co. (A/Stable/A-1), CNH Global N.V. (BB+/Stable/—), and AGCO Corp. (BBB-/Stable/—). All three of these companies compete globally and mainly serve North America, Europe, and South America.

Deere is the market leader and the clear leader in North America. For the

past 12 months, Deere's North American sales exceeded CNH's and AGCO's combined. That means Deere has the most exposure to the potential effects of the drought, but it also has the strongest financial risk profile, in our view. Through its financial services arm, Deere also has crop insurance operations in the U.S. under authorization from the federal Risk Management Agency. Because Deere reinsures this business, we expect the losses to be relatively modest, though it will experience losses related to residual risk. Deere projects less than \$50 million of losses versus more than \$3 billion in net income this fiscal year.

Other regions have more balanced overall market shares for agricultural equipment. In Europe, all three companies compete in the tractor and combine markets with no clear overall leader. South America (primarily Brazil) historically has been a strong market for AGCO's tractors, though the company has lagged the others on combines. Emerging Asian markets like China and India could increase in importance as farmers trade up to more productive machinery that these three companies supply. Russia, with its expansive arable land, presents another large market with growth opportunities given the outdated equipment commonly in use there. But a lack of consistent equipment financing has been holding back demand.

In total, the market is globally competitive with well-capitalized players. The industry is cyclical and demand is subject to external factors such as volatile crop prices. Therefore, we don't view the effects of the drought as new or likely to

trigger meaningful competitive reactions such as price discounting on equipment. In fact, because the companies we rate are global, overseas demand may prove to be a bright spot. High crop prices will likely encourage farmers in other regions (like South America) to increase production and take advantage of the high prices through exporting their goods. Exactly how this will trickle down to near-term equipment demand is not clear, but it is likely positive.

The industry has experienced a number of tailwinds over the past decade. Global population growth, increasing demand for protein (which requires more crop inputs per consumed calorie), and increased biofuel demand have supported generally healthy crop prices and boosted demand prospects for agricultural equipment. Despite advances in productivity because of more sophisticated equipment, seed, fertilizers, and farming practices, stocks of crop have remained relatively low. For the upcoming year, the U.S. Department of Agriculture (USDA) projects global stocks of corn at less than 15% of use and soybeans to hover at about 20%. This contributes to higher crop prices and, in the U.S., record levels of farmer cash receipts and income, which has encouraged farmers to invest in equipment to try to increase incremental productivity.

These fundamentals have translated into improved results for the agricultural equipment makers we rate, and rating actions have been mostly positive. We raised our rating on Deere to 'A' in late 2006 and upgraded AGCO to investment grade in 2010. We revised the rating outlook on CNH to stable from negative after taking the same action on its nearly 90% owner, Fiat Industrial SpA (BB+/Stable/B), earlier this year. This was largely due to progress on Fiat Industrial's credit measures that can be attributed to good results from CNH's agricultural equipment segment.

Different Farmers, Different Effects

Crop farmers account for more than half of U.S. farm cash receipts and an even larger proportion of the domestic

Equipment Manufacturers

	AGCO Corp.	CNH Global N.V.	Deere & Co.
Ratings	BBB-/Stable/—	BB+/Stable/—	A/Stable/A-1
Business risk profile	Satisfactory	Satisfactory	Strong
Financial risk profile	Intermediate	Significant	Modest
Total ag-related sales (\$ bil)*	9.6	19.0	27.4
Ag-related sales as % of total (%)*	100	78	80
North America revenue (%)§	24	43	57

*As a percentage of nonfinancial services revenues. Includes Turf equipment for Deere and grain storage/protein production systems for AGCO. Last 12 months through June 2012 for CNH and AGCO, and July 2012 for Deere.

§Geographic split is for entire equipment revenue base. For Deere, North America does not include Mexico.

markets that the equipment manufacturers we rate serve. High prices for major U.S. commodities, such as corn and soybeans, will help crop farmers. And the widespread use of crop insurance (about 85% of eligible acres are covered, according to the USDA) should also serve as a backstop for many crop farmers that are struggling amid the drought, in contrast with prior decades. For instance, only 25% of acreage was covered in 1988, another year of severe drought. Although the exact timing of insurance proceeds and willingness of farmers to redeploy these proceeds into equipment is not clear, it's certainly a better situation than in years before. So for high horsepower tractors and combines used in domestic row-crop farming, we think demand should hold up reasonably well.

On the other hand, we believe livestock farmers—who do not benefit from similar levels of insurance coverage—will be more seriously hurt as withered pastures and soaring feed costs (typically for corn) hit their bottom lines. Anticipated federal disaster assistance—such as the USDA's announcement on Aug. 13 that it would buy \$170 million worth of meat for national food nutrition programs—may mitigate the effects, but it will still be tough going for most.

To compound the damage for livestock farmers, near-term meat prices have been constrained because ranchers have sent more animals to slaughter as they cut costs. Inflation is likely to increase next year when the meat supply is curbed, which should help farmers. Still, in the near term we think the drought could moderately hurt lower horsepower utility tractors and hay and forage equipment, which rely more on livestock farmer demand.

Still, in general, fundamentals are better today for farmers than in decades past, which we believe should help farmers' solvency and willingness to purchase equipment. The past several years have been good for farm profits—measures like cash receipts, cash income, and net farm income have been high. Farmers' balance sheets are stronger than the past as well. For

More than 40% of domestic corn production will go to ethanol production this year despite some reductions from producers. . .

example, the USDA reports that the debt-to-asset ratio for U.S. farmers has declined to about 10% versus more than 20% in the mid-1980s.

And Where Does All Of That Corn Go?

Farmers produce a wide variety of crops in the U.S., but corn and soybeans represent most of the value of production. In 2011, domestic corn generated more than 40% of domestic crop value and soybeans represented more than 20%—combined, the two are close to two-thirds of total crop production. As of Aug. 10, the USDA's crop production report estimated that domestic corn and soybean production will be down 13% and 12%, respectively, this year, although slightly more area will be harvested this year than last.

According to the USDA's August projections, more than 40% of domestic corn production will go to ethanol production this year despite some reductions from producers who find the higher cost feedstock to be uneconomical. About 10% less corn will be used for ethanol than in 2011, although this remains the biggest use of corn. The USDA projects the second-largest use of corn to be for feed at about 37% of the total. However, demand this year will decline in absolute terms, as farmers reduce livestock herds and shift to other feed inputs like wheat. The rest of the corn goes to other uses, like domestic food, and for export—where the U.S. has historically made up about half of the global export market. The share of domestic soybeans going to export is greater than that of corn, with about 40% of production likely to hit the global markets.

Given the composition of domestic corn demand, we view ethanol policy

and livestock herd levels as important to sustaining high prices. We view some risk in potential suspension or relaxation of domestic mandated ethanol production requirements that could cut into demand for corn and lower prices. Also, given the importance of the U.S. in the export market, pressure may intensify from overseas buyers of corn who are hit with escalating food costs. If livestock farmers continue to reduce herd size, that could also hurt corn demand and price.

A Protracted Drought Would Increase Risks

We think the drought presents moderate near-term risks for portions of the industry (like ranchers), but, overall, we expect the farming sector to hold up. We believe that means agricultural equipment demand won't fall off the table. But it doesn't mean agricultural equipment makers will be immune if the drought persists. We believe that a more protracted two-year drought would increase risks for the entire industry. As with this year, we would need to consider lower yields resulting from an extended drought against commodity prices to determine the impact on crop farmers' cash receipts and net income. We would also watch for political and economic pressure on domestic ethanol fuel mandates, an even more severe potential impact on livestock farmers, and indications of skittishness among farmers in making equipment purchase decisions. **CW**

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Will Fertilizer And Agricultural Chemical Producer Ratings Weather The U.S. Drought?

Overview

- The fertilizer, seed, and agricultural chemicals producers we rate are facing some exposure to the severe and widespread U.S. drought.
- Particular situations vary, but fertilizer companies appear to generate a greater proportion of their revenues from domestic markets affected by the drought than seed and agricultural chemical producers.
- Nonetheless, we believe the companies we rate in all three sectors can withstand the effects of a one-year drought, and we don't expect to take rating actions on any of them in response to these conditions.
- Risks could arise in the low-probability scenario of a multi-year drought, or if unexpected demand declines exacerbate the impact of the drought.

The ongoing U.S. drought is already the most widespread since the 1950s and the most severe in recent times. Apart from the likely impact on the farm sector, how will the drought affect companies that produce fertilizer, agricultural chemicals, and seeds?

In general, fertilizer companies face greater exposure to the effects of the drought than seed and agricultural chemical companies (producers of various products including herbicides and pesticides). Vulnerabilities vary, in our view, depending on the degree to which each company relies on sales to the U.S. agricultural markets affected by the drought. Although this situation is still unfolding, Standard & Poor's Ratings Services believes the drought will not affect credit quality sufficiently to result in rating changes.

Some Companies Are More Vulnerable Than Others

Several chemical companies we rate sell products to the U.S. agricultural sector, but each company has a different level of expo-

sure. In general, we view the fertilizer companies as having moderate to high exposure to U.S. agricultural markets subject to the drought based on the generally moderate to high proportion of their revenues derived from domestic agricultural markets. Conversely, we view the agricultural chemical companies, including those that produce seed, as generally having lower exposure, with the exception of Monsanto Co. The latter has a high exposure because it derives over half of its revenues from domestic markets in our estimate. We base our assessment largely on the estimated percentage of revenue each company derives from the U.S. agricultural sector (*see table*).

This exposure is an important factor in determining the potential risk to credit quality in each segment and company. We believe agricultural chemical and seed companies are less vulnerable because they have relatively low proportions of sales to markets suffering from the drought and because we don't expect the drought to meaningfully lower demand for their products. We also think demand won't

Demand For Fertilizer And Seeds Should Remain Strong

Farmers purchased fertilizers and, in many instances, seed for 2012 before they felt the effects of the drought. That's because warmer than usual weather enabled an earlier start to the 2012 planting season and related agricultural purchases. Moreover, planted acreage in 2012 was the highest since the 1930s for corn, a key crop as far as fertilizer consumption goes, at 96 million acres, according to the U.S. Department of Agriculture (USDA). That high acreage has helped boost 2012 fertilizer sales.

The USDA anticipates large planted acreage in 2013, too, which should benefit future demand for fertilizers, and seeds, in particular. The USDA recently revised its estimates for 2013 corn planting upward, reflecting a general expectation that farmers will seek to increase output next year to offset lower 2012 crop yields and the resultant tighter inventories for key grains. For this reason, the USDA estimates that 2013 corn acreage will be close to 2012 levels.

We expect that the potential for a drought-related dip in farm income for 2012 will not hurt farmers' purchases of fertilizer and seeds for 2013. Farmers' capacity to purchase agricultural chemicals, including fertilizers, for 2013 should be generally adequate after several favorable years and because crop insurance is likely to compensate farmers for a significant amount of lost income in 2012. In addition, high crop prices might at least partly offset the diminished 2012 yield.

Drought-Related Risks Remain

A potential decline in demand because of the drought remains a risk, despite our base case view for ongoing strength in demand. A short-term drop in sales at some of these companies could occur if farmers defer purchases. However, this is always a risk in these sectors, in our view, and something we already factor into our ratings. For example, general expectations for declining fertilizer prices have caused farmers to defer purchases in the past, lowering short-term demand. However, further risks could develop if drought conditions persist beyond the current year, dampening demand or contributing to a weaker agricultural economy.

Demand for fertilizer and seeds could also drop as a result of declining corn demand because of changes to the ethanol mandate. The U.S. Environmental Protection Agency has announced it is weighing requests to waive the mandate to add ethanol to gasoline. If this occurs, it would cut into corn demand because ethanol production accounts for about 40% of U.S. corn consumption, according to USDA estimates. Although how this will play out remains uncertain, it is probable that if the EPA waives the mandate, it could result in lower corn prices from record levels and resurrect demand that has faded in some sectors because of very high prices.

The Credit Impact On Specific Companies Varies

Although agricultural chemical companies' exposures to U.S. markets suffering from the drought are key, other factors specific to companies and sectors also come into play in considering the potential credit impact.

Agrium Inc. (BBB/Stable/—)

Canada-based vertically integrated fertilizer company Agrium produces all three primary agricultural nutrients (nitrogen, potash, and phosphates) and markets fertilizer, seed, chemicals, and crop protection services through its retail stores. We view the company's retail business, which produces close to a third of its EBITDA, to have stable margins and offset volatility in earnings from the wholesale segment (about two-thirds of EBITDA). The retail

We expect that the potential for a drought-related dip in farm income for 2012 will not hurt farmers' purchases of fertilizer and seeds for 2013.

business also serves as a selling arm for the wholesale business and complements the company's fertilizer wholesale business by providing a better understanding of the fertilizer markets. In addition, Agrium's Vanscoy, Sask., potash operations (which are the third largest in North America) have a long resource life and are in the top quartile of the industry cost curve (a measure of their efficiency). The company is in the process of expanding its potash capacity by 50%, to 3 million metric tons by 2014, through expansions to existing facilities.

As of June 30, 2012, Agrium's Standard & Poor's adjusted debt-to-EBITDA ratio was 1.2x, versus our expectation for leverage to remain below 2x. Current cash flow protection, which we measure as funds from operations to debt, is about 70% compared with our expectation of above 40% over the next two years.

CF Industries Inc. (BBB-/Stable/-)

Deerfield, Ill.-based nitrogen fertilizer producer CF Industries has the greatest exposure to the U.S. domestic agricultural segment, among rated North American fertilizer companies. About 85% of its sales are domestic, most of that to the agricultural sector with a minor portion to industrial markets. This concentration in domestic markets, and in nitrogen fertilizer, which accounts for over 80% of revenue (phosphates generate the rest) is a key credit risk, in our opinion, increasing the company's susceptibility to any downturns in the domestic market.

Nonetheless, we don't expect the drought to hurt our ratings on CF in 2012 because several factors offset much of this risk. We expect no meaningful decline in fertilizer demand from a short-term drought and believe that CF might conceivably benefit from a continuation of favorable trends in fertilizer demand as the farm sector tries to increase output to offset a weak 2012.

Other mitigating factors include the underlying strength in long-term domestic demand for nitrogen, a domestic supply shortfall versus demand, and CF's lower costs versus imports, on account of low cost U.S. natural gas. These positives con-

tributed to CF's record 12-month EBITDA margins of over 50% as of June 30, 2012. In addition, demand may hold up for CF's nitrogen fertilizer because soil doesn't retain nitrogen as well as it does potash and phosphates. This necessitates more frequent application of nitrogen fertilizers. Consequently, farmers are more likely to defer purchases of potash and phosphate fertilizer before they would consider deferring nitrogen fertilizer purchases.

Finally, CF's financial risk profile, including "strong" liquidity (as our criteria describe the term), will enable the company to overcome any potential short-term demand disruptions, in our view. The key ratio of funds from operations to total debt was over 100% as of June 30, 2012, versus our expectation in the 40% to 45% range for the current rating. This strength relative to our expectations provides cushion for some cyclicity and weather-related event risks, such as the current drought.

Monsanto (A+/Stable/A-1)

St. Louis-based global producer of seeds and herbicides Monsanto manufactures seeds with traits such as herbicide tolerance and pest resistance. Exposure to the U.S. agricultural sector is relatively high—it represented 54% of revenue in fiscal 2011. However, offsetting the potential risk of this concentration are factors such as the

Rated Chemical Companies' Exposure To U.S. Agricultural Markets (Based On Estimated 2011 Revenues) (%)

Company	Rating	Sector
High exposure (above 50%)		
CF Industries Inc.	BBB-/Stable/—	Fertilizer
Monsanto Co.	A+/Stable/A-1	Seeds, agricultural chemicals
Moderate exposure (15% to 50%)		
The Mosaic Co.*	BBB/Stable/—	Fertilizer
Agrium Inc.	BBB/Stable/—	Fertilizer
Potash Corp. of Saskatchewan Inc.	A-/Stable/A-2	Fertilizer
Low exposure (below 15%)		
Chemtura Corp.	BB-/Stable/—	Agricultural chemicals
Dow Chemical Co.	BBB/Stable/A-2	Seeds, agricultural chemicals
FMC Corp.	BBB+/Stable/—	Agricultural chemicals
DuPont (E.I.) De Nemours & Co.	A/Stable/A-1	Seeds, agricultural chemicals

*Estimated exposure based on fiscal 2012 sales.

timing of the drought, which has not hurt sales for the important 2012 spring planting season. Additionally, the company's domestic seed production focuses on select, geographically diversified, mostly irrigated agricultural areas, and some seed production is overseas. The company reported a 17% revenue increase, mainly because of higher volumes, for the third fiscal quarter ended May 31, 2012, versus the comparable period last year. Monsanto attributed the volume increase partly to the

single product or market. Mosaic's scale and integration, in its mainly North America-based manufacturing facilities, provide it a competitive advantage especially in the U.S. market. Although we don't expect a meaningful demand downturn in the U.S. markets for its products, this competitive strength should enable the company to offset any temporary drought-related risks better than less integrated companies or overseas competitors without integrated operations in the U.S.

of about 108 years. The company is also a producer of phosphate and nitrogen fertilizer.

As of June 30, 2012, Standard & Poor's adjusted debt-to-EBITDA ratio was about 1.3x versus our target for the company of about 1.5x. Current cash flow protection levels, in terms of funds from operations to debt, are about 70%.

Agricultural chemical producers

Agricultural chemical and seed producers Dow Chemical Co. (BBB/Stable/A-2) and DuPont (E.I.) De Nemours & Co. (A/Stable/A-1) and agricultural chemical producers Chemtura Corp. (BB-/Stable/—) and FMC Corp. (BBB+/Stable/—) have limited exposure to domestic agricultural markets—amounting to about 15% or less of estimated 2011 sales for each company. Some of these companies focus on a broader range of crops in domestic agricultural markets than those the drought directly affects, which further insulates their agricultural chemical operations from such risks. Among these crops are fruits and vegetables, including those grown in or near coastal regions, which the drought has not meaningfully affected.

An Extended Drought Could Hurt Credit Quality

The U.S. drought will not meaningfully affect credit quality of our rated fertilizer, agricultural chemical, and seed companies, in our view. In fact, a one-year drought could contribute to sustaining high levels of demand into 2013. However, there are risks for these companies if the drought extends beyond a year, or if other weather-related events such as hurricanes exacerbate the loss of farm income from the drought, or affect demand by lowering expectations for a strong planting season next year. **CW**

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Fundamentals for the potash business are strong, given that about two-thirds of the world's high quality and economical potash is in Canada and the former Soviet Union.

increased adoption of its seeds, a factor that could help sustain volumes despite the drought. And demand for the company's seeds could benefit if planting acres increase next year in response to lower crop production this year. Monsanto's drought-tolerant corn is undergoing on-farm testing, and the company expects to launch the product commercially in the U.S. for the 2013 planting season.

The company's current financial ratios are above our expectations and provide potential cushion against unexpected earnings weakness. We expect EBITDA margins of 25% or higher and pretax return on capital of about 15%. For the 12 months ended May 31, 2012, these ratios were above 30% and 21%, respectively. In addition, we expect funds from operations to adjusted total debt of at least 50%. This ratio was 97% as of May 31, 2012.

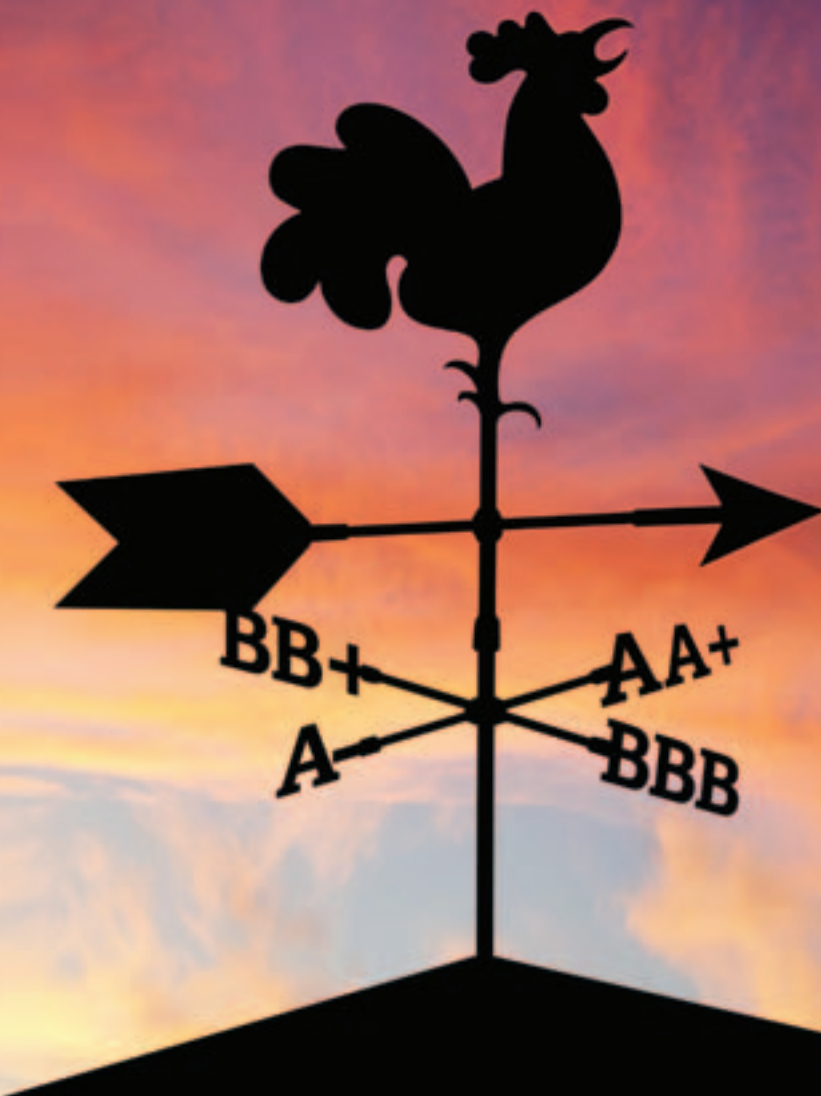
The Mosaic Co. (BBB/Stable/—)

Plymouth, Minn.-based Mosaic is the largest integrated phosphate producer in the world and among the top five global producers of potash-based nutrients. North American sales generate about 40% of its revenues. We view the company's product and market diversification as strengths, because they help offset risks arising in any

Mosaic's leverage financial ratios are strong for the current ratings. The key ratio of funds from operations to total debt was over 150% as of May 31, 2012, versus our expectations for the ratings of over 40%. As of May 31, 2012, cash on hand was \$3.8 billion, which we believe is a sufficient buffer against any unexpected drought-related setbacks, in addition to supporting large capital investments and diminishing operational risks.

Potash Corp. of Saskatchewan (A-/Stable/A-2)

Canada-based Potash Corp. is the largest global producer of potash fertilizer with about 20% of global capacity. It sells about a third of its potash fertilizer in North America. Fundamentals for the potash business are strong, given that about two-thirds of the world's high quality and economical potash is in Canada and the former Soviet Union. The company expects to increase its potash capacity to approximately 17 million metric tons by 2015. This, in our view, will allow it to maintain its market position in the long term. We consider the company's potash mines to be low cost, given the size and ease of accessibility to ore and their long reserve lives



Will America's Drought Wither Ratings For U.S. Food, Grain, And Ethanol Companies?

The U.S. is in the midst of its worst drought since the 1950s: Nearly two-thirds of the lower 48 states are experiencing some form of drought, and the U.S. Department of Agriculture (USDA) has designated half of U.S. counties as natural disaster areas. Standard & Poor's Ratings Services believes the drought could hurt revenues and earnings for companies that produce, process, and distribute grain, food, alcohol, and ethanol products, and could affect their ratings or outlooks to varying degrees—particularly if it continued through the 2013 growing season.

Overview

- Companies that produce, process, and distribute grain, food, alcohol, and ethanol products are contending with higher commodity costs and other difficulties as a result of the U.S. drought.
- A one- or two-year drought could affect the ratings on these companies to varying degrees, although the overall impact would likely be limited to some negative outlook revisions or one-notch downgrades.
- Ethanol processors and poultry producers are at the greatest near-term risk of downgrades resulting from the drought, with some defaults possible among the weakest ethanol processors.

The drought has already caused a marked drop in corn yields and stocks and an associated rise in prices this year. Soybean and wheat prices are also up substantially, and the high cost of feed has caused ranchers to reduce U.S. cattle herds to their lowest levels since the USDA began keeping records in 1958. While meat prices have been relatively stable, we expect them to spike later this year and into 2013 due to decreasing supply.

The drought's ultimate effect on ratings will depend on the extent to which these companies can pass cost increases through to their customers or consumers, their ability to operate more efficiently, and their sales diversification outside the U.S., along with the strength of their balance sheets. We believe ethanol processors' and poultry producers' creditworthiness are at the greatest near-term risk, with the potential for defaults among weaker ethanol companies. However, a persistent and more severe drought could also hurt ratings in the grain processing, animal feed production, meat, dairy, packaged food, alcoholic beverage, and food distribution subsectors. We've assessed the potential ramifications of a one- or two-year drought on credit quality using the following grading scale:

- Very high (VH), which indicates the potential for defaults;
- High (H), which indicates the potential for one- to two-notch downgrades;
- Medium (M), which implies the potential for one-notch downgrades;
- Low (L), which indicates the potential for some negative outlook revisions but little or no effect on ratings; and
- Positive (P), which implies a positive credit effect, including positive outlook revisions or rating upgrades.

Overall, we believe a one- to two-year drought would have a low to medium impact on most of these subsectors, with some potential for negative outlook revisions and one-notch downgrades in both the investment-grade and speculative-grade rating categories (*see table 1*).

The Drought's Effect On Agricultural Commodities Prices

The drought has already had a significant impact on prices for many key commodities since July 2011, as table 2 shows.

Sector Breakdown Ethanol processors

Corn prices have a direct effect on ethanol processors, for which the commodity represents a high input cost. Despite U.S. regulatory support that stimulates demand, weak North American gasoline demand and higher ethanol prices relative to gasoline have reduced the need and the economic incentive for ethanol blending. In addition, refiners are able to dip into inventories rather than bid up ethanol prices when corn prices are high. Our outlook for the sector is negative, and we expect marginal producers, particularly smaller and less efficient speculative-grade companies or those that lack business diversity, to come under significant ratings pressure in a one- or two-year drought scenario, with the potential for some defaults. On July 30, 2012, we lowered our corporate credit rating on Aventine Renewable Energy Holdings Inc., a midsize ethanol producer, to 'SD' (selective default) after it entered a debt forbearance agreement, due in part to weak margins.

For investment-grade companies, which are typically larger and more diverse, we perceive low to medium credit risk in a one-year drought scenario. We revised our outlook on Archer Daniels Midland Co. (A/Negative/A-1), one of the two largest U.S. ethanol producers, to negative on Aug. 2, 2012, in part because of higher corn costs' effect on future ethanol margins. We also changed the outlook on Valero Energy Corp. (BBB/Negative/—), the third-largest producer in the U.S., to negative in early August, following the announcement that it plans to divest its retail operations. We believe investment-grade producers, most of which are well diversified, could face a medium risk to credit quality in a two-year drought, particularly if mitigating business factors weaken.

In the long term, we believe the U.S. Environmental Protection Agency's (EPA's) Renewable Fuel Standard (RFS) will effectively support a base level of ethanol demand, allowing the most efficient producers and those with enough liquidity to weather periods of margin

volatility to survive. A number of industry and interest groups have challenged the EPA's mandate over the past few years, often citing food versus fuel arguments. None have been successful to date. But recent calls from bipartisan lawmakers, including 25 U.S. senators, to suspend the RFS highlight an ongoing risk for the industry, particularly during lean fiscal periods when commodity prices are high. While we don't expect it, a downward revision or elimination of the RFS's volumetric mandate could have major negative credit implications for the sector. In such a scenario, demand could decline, as producers would rely on ethanol's use as an oxygenate and on its blending value if its delivered cost is less than gasoline.

Chicken, pork, and beef producers

Of the three primary meat producers, we believe a one- or two-year drought would have the greatest credit effect on chicken producers. Because chicken producers grow, process, and sell their own chickens, this industry is the most susceptible to increases in the cost of feed (most of which consists of corn- and soy-based meals). Moreover, it has a history of overproduction, which has made it difficult to raise prices to offset higher feed costs. More recently, the industry appears to be reacting more rationally to rising feed costs: Cold storage levels are down year-over-year, and egg sets (a leading indicator of future chicken counts) have also been trending down. In addition, producers have adjusted their pricing agreements with customers to reduce their exposure to fixed-price annual contracts.

Nonetheless, we believe a one-year drought would have a low to medium effect on chicken producers' credit quality, and a two-year drought could have a high impact on speculative-grade chicken producers' credit quality. We recently revised our outlook on speculative-grade Pilgrim's Pride Corp. (B/Negative/—) to negative from developing, and on Simmons Foods Inc. (CCC+/Negative/—) to negative from positive, because of the drought's potential effect on their chicken businesses.

We believe a one- or two-year drought scenario poses less of a credit risk to commodity beef and pork processors, primarily because the rated North American companies' improved balance sheets are better positioned to withstand weaker earnings. Still, the drought could cut into earnings for pork and particularly beef producers, as last year's droughtlike conditions in the Texas Panhandle were partly to blame for weak beef cutout margins (the profit margin for beef packers based on wholesale prices on cuts of beef and live cattle costs) in the second half of 2011. Although beef select wholesale values had increased by about 6% year-over-year as of Aug. 8, 2012, beef packers have struggled with weak cutout margins since last year. Margins have improved a bit recently, in part because of the increase in cattle coming to slaughter. Nonetheless, we believe cutout margins could begin to drop again once the spike in cattle slaughter rates recedes. We revised our outlook on Cargill Inc. (A/Negative/A-1) to negative on Aug. 15, in part because of these issues. Still, we believe that because of their improved balance sheets, beef and pork processors face only a low credit risk from a one-year drought and low to medium risk from a two-year drought.

Food distributors

We currently believe the rating effect of a one-year drought on foodservice distributors such as Sysco Corp. (A+/Negative/A-1) and US Foods Inc. (B/Stable/—) would be low overall. Although some initial customer resistance to distributor price increases is likely, we think the impact on profits would be moderate and that distributors would recoup most food cost inflation through price increases over time.

A two-year drought, however, presents a more significant risk because of its potential effect on consumer demand for food outside the home. Volume declines could result if consumers begin to dine out less frequently, and restaurants and other commercial customers could

become more resistant to persistent price increases. These factors could lead to some negative rating activity.

At this point, we believe Sysco—which is experiencing higher costs and weaker profits, arising in part from its business transformation plan—would face a higher probability for a downgrade than US Foods in a two-year drought scenario. Our current ratings on Sysco assume that the company will be able to improve its credit metrics over the next 18 months, which might not be possible if the drought continues. We'd be unlikely to downgrade US Foods unless its leverage reached at least 8.5x. This would imply close to a 15% decline in EBITDA from current levels, which we view as unlikely.

Animal feed processors and distributors

We believe a one-year drought would have little or no rating effect on animal feed processors or distributors, although some negative outlook revisions could be possible for companies

Table 1 | Expected Impact Of The U.S. Drought On Sector Ratings

Industry	—Impact of one-year drought—		—Impact of two-year drought—	
	Investment-grade	Speculative-grade	Investment-grade	Speculative-grade
Ethanol processors	Low/medium	Very high	Medium	Very high
Poultry producers	Low/medium	Low/medium	Medium	High
Food distributors	Low	Low	Medium	Medium
Animal feed processors and distributors	Low	Low	Low/medium	Low/medium
Grain storage, processing and distribution	Low	Low	Low/medium	Low/medium
Beef producers	Low	Low	Low/medium	Low/medium
Pork producers	Low	Low	Low/medium	Low/medium
Dairy product processors/producers	Low	Low	Low	Medium
Packaged food producers	Low	Low	Low	Low/medium
Alcoholic beverage producers	Low	Low	Low	Low

Table 2 | U.S. Agricultural Price Changes (%)

Dates/periods	Wheat	Corn	Soybeans	Live cattle	Lean hogs
7/31/11–7/31/12	32.08	21.19	27.08	5.55	(9.56)
12/31/11–7/31/12	36.08	24.75	43.60	(3.28)	10.26
5/31/12–7/31/12	37.89	45.25	28.43	1.52	3.51

that lack business or product diversification. Feed distributors in North America are primarily investment-grade and participate in several business lines beyond feed, such as seeds or crop-protecting products. Moreover, ranchers aren't likely to cull livestock herds all at once, which further mitigates the impact of a one-year drought. In fact, the drought will likely provide a short-term boost to sales volumes if the higher feed costs prompt ranchers to bring cattle (often land-grazing) to feed lots for early slaughter. This would result in a short-term increase in slaughterhouse feed demand, and distributors can generally pass the higher prices on to the ranchers or slaughterhouses.

There is a risk of substitution to lower-cost feed products, including premixed feed and other less-profitable offerings, such as distiller grains (an ethanol co-product). However, this shift to premixed feed has already begun amid volatile grain prices over the past five years. Still, a prolonged drought could lead to significant declines in herds and less time at slaughterhouse feed lots as smaller and younger animals go to slaughter. As such, we believe a two-year drought would have a low to medium effect on ratings.

Grain storage, processing, and distribution

Although a smaller crop means less grain to either process or distribute, several factors will likely mitigate the near-term impact of a one-year drought on these companies. These include relatively inelastic demand for agricultural products, the geographic diversity of grain merchandisers and processors (including solid distribution footprints), and these companies' global market knowledge. A growing global population and emerging economies are boosting demand for food, particularly meat, and the agribusiness industry has expanded its origination footprint globally to meet this demand. A critical element of the grain business model is using a global processing and distribution footprint to profitably source, distribute, and

process products for end customers, thereby maximizing earnings. These companies' vast networks and market knowledge should allow them to implement effective sourcing and distribution strategies—including sourcing grains from outside the U.S.—to manage through the drought. Therefore, a one-year drought would have only a low effect on these companies, in our view, while a two-year drought could have a low to medium impact.

Dairy product processors and producers

While most of the major milk-producing states are not experiencing the worst of the drought, the drought is raising feed costs and reducing dairy herds, as well as cutting into milk production per cow. Dairy farmers are facing the prospect of lower milk/feed price margins, which lead to reductions in the size of herds dairy farmers are willing or able to maintain. USDA figures indicate a 32% reduction in the U.S. milk/feed price ratio over the past 12 months, which reflects, in part, rising feed costs. In addition, sustained high temperatures reduce the overall volume of milk that dairy cows produce. These factors may result in a significant decrease in domestic raw milk supply and higher prices for raw milk and processed dairy products.

The USDA has reduced its estimate of U.S. milk production during the second half of 2012 and projects the first annual decline in milk production levels since 2009 next year. The decline in U.S. milk prices that began in the fourth quarter of 2011 has started to reverse. The USDA had expected a rise in milk prices during the second half of 2012 even before the severity of the drought became evident, but is now projecting even bigger increases. In its latest forecast (on Aug. 16, 2012), the USDA raised its all-milk price projection for full-year 2012 by about 3.5% from its June forecast, although it still remains 12.4% below the overall 2011 level. The forecasted all-milk price in 2013 is about 3.7% higher than the full-year 2012 forecast.

The milk marketing operations of dairy cooperatives such as Dairy Farmers of

America Inc. (BBB+/Stable/A-2) are largely able to pass price changes for raw milk through to their customers. However, dairy processors, such as Dean Foods Co. (B+/Positive/—), could face margin compression similar to what they experienced in 2011 if they cannot adequately pass raw-milk price increases through to their wholesale and retail customers. In addition, a rise in retail milk prices could cause the ongoing gradual decline in domestic fluid milk consumption to accelerate. Lower volumes reduce production efficiencies for this commodity product. A continuation of drought conditions beyond 2012 could cause us to revise our positive outlook on Dean Foods Co. (B+/Positive/—).

Packaged food producers

According to a recent report from the Federal Reserve Bank of Kansas City, its economists believe that similar to 1988, the current drought could contribute to a 4% increase in annual retail food prices over the next year. The drought has already reduced production of crops including corn, soybeans, and wheat. This will result in price increases for cereals, bakery products, and other packaged food and nonalcoholic beverages sweetened with high fructose corn syrup. Although beef prices will decline initially because the drought is leading to increased slaughter rates as feed costs rise, prices will likely rise again after supplies fall back. We believe that if retail food prices climb as expected, sales volumes could suffer next year and possibly into 2014. In our view, the degree to which the drought affects each company will depend on its proportion of input costs related to grains, proteins, and dairy and its ability to offset these costs through pricing actions and cost-cutting efforts, as well as the degree of private-label options or other substitutes in its categories.

Since last year, high and volatile commodity costs have caused packaged food makers to raise prices significantly. As a result, consumers pulled back consumption and the industry experienced some sales volume declines, which led to industrywide margin compression.

Given the ongoing drought conditions, we believe input costs may rise further, particularly for grains and related inputs, as hedges roll off for most of these companies beginning in 2013. In light of the price sensitivity that consumers have shown in recent quarters, we believe that volumes could continue to suffer if rising input costs necessitate additional price increases.

We believe the effect of a one- or two-year drought on investment-grade packaged food and nonalcoholic beverage producers' ratings would be low, given these companies' stronger financial risk profiles. Most have the cash flow generation, operating scale, and liquidity they need to withstand additional cost increases. We believe the effect of a one-year drought on speculative-grade packaged food companies would be low as well, because most of these companies have taken actions to hedge against or otherwise offset the cost inflation they're experiencing, in our view. However, if drought conditions persist for another year, we believe these companies would face a low to medium rating effect because they tend to have limited scale and less pricing power than their investment-grade counterparts, which could lead to liquidity constraints and ultimately undermine the ratings.

While we view the packaged-food and nonalcoholic beverage producers as generally stable, we believe companies that rely most heavily on grains and animal proteins are likely to feel the biggest impact from the drought. In our view, the companies with the most grain exposure include Post Holdings Inc. (B+/Stable/—), General Mills Inc. (BBB+/Stable/A-2), Kellogg Co. (BBB+/Negative/A-2), Ralcorp Holdings Inc. (BBB-/Negative/—), and Flowers Foods Inc. (BBB-/Stable/—). Those with the most meat protein exposure include Kraft Foods Group Inc. (BBB/Negative/A-2) and The Hillshire Brands Co. (BBB/Stable/A-2). In our view, the companies with currently negative outlooks are the most vulnerable to ratings actions if they cannot offset the rising costs or, in the case of investment-grade entities, if they

pursue more aggressive financial policies in conjunction with weaker operating performance.

Alcoholic beverage producers

We expect the impact of a one- or two-year drought to be low overall for the investment-grade and speculative-grade U.S. alcoholic beverage producers we rate. In our view, most of these companies have some degree of product category or geographic diversification, and they typically source key ingredients locally. However, we believe the drought could have a bigger effect on domestic brewers, specifically Molson Coors Brewing Co. (BBB-/Negative/—), given their reliance on agricultural products. Molson Coors, through its U.S. joint venture with SAB Miller PLC, malts a portion of its U.S. production using barley purchased under yearly contracts from independent farmers in the western U.S., as well as other barley, malt, and cereal grains from suppliers in the U.S. Our current negative outlook on the company reflects its weaker financial ratios following the recently completed, largely debt-financed acquisition of StarBev L.P., a leading central and eastern European brewing company. **CW**

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U.S. Barge Companies Navigate Through Shallow Waters

Overview

- For the U.S. barge operators we rate, we expect long-term charter contracts and diverse service offerings to dampen the near-term effects of the drought on profitability.
- The operations of dry barge carriers are more susceptible to the drought's impact than liquid barge carriers.
- A drought through the fall of this year would have little or no rating impact on rated U.S. barge operators.
- If the drought persists beyond the fall, however, profitability could suffer more significantly and weaker, speculative-grade companies could be vulnerable to one-notch downgrades.

The U.S. drought is weighing on barge transport companies in more ways than one. The drought has caused water levels to fall, making it difficult for barges to navigate the inland river systems. As a result, barges are operating at slower speeds and carrying reduced volumes to meet draft restrictions (the depth to which a ship can sink according to its load). And in addition to hurting barges' operating efficiency, the drought has damaged crop yields, causing reduced cargo volumes for U.S. domestic shipping companies that transport agricultural dry bulk commodities such as corn, soybeans, and wheat. River barges transport about 60% of the U.S. grain harvest, along with 22% of oil and gas, and 20% of coal.

We believe that, despite these issues, long-term charter contracts and diverse service offerings should temper the near-term effects of the drought and weather-related disruptions on barge operators' profitability, thereby limiting the credit effect of a drought. If drought conditions persist beyond the fall of this year, however, barge operators could suffer more significant revenue and earnings declines, and weaker, speculative-grade entities could be vulnerable to one-notch downgrades.

The 2,300-mile-long Mississippi River carries the majority of cargo floating on the U.S. inland river systems. Water levels are as much as 21 feet lower than normal in places like Port of Vicksburg, Miss. Elsewhere, reported water levels are 12 feet below normal in Cairo, Ill., and 17 feet below normal in Memphis, Tenn. As a result, the U.S. Army Corps of Engineers has been dredging various points along the Mississippi River to alleviate the effect of low water and keep commercial barge traffic uninterrupted. Still, several barges have run aground, and the U.S. Coast Guard has had to shut down certain points along the river to commercial traffic.

The Coast Guard has also limited barge loadings to 9-foot drafts compared with the typical loading at about 9 feet 6 inches. If water levels fall further, lowering the draft limit will not help: tow boats that power and push barges have a draft ceiling of about 8.5 feet to 9 feet, so there is very little room left to maneuver.

In such a scenario, traffic will have to completely stop, as was the case in 1988 when a stretch of the Mississippi closed for transport for about two weeks, leaving upward of 700 barges stranded. Currently, there are about 100 barges and tow boats waiting near Greenville, Miss., to move cargo on the river. According to the CEO of the Port of New Orleans, closing the river would cost the industry about \$290 million per day, and he believes this figure would grow exponentially after the first four days of closure.

Barge carriers are operating their vessels below capacity because they are loading less cargo to meet draft restrictions. A standard dry cargo barge operates a tow that is five barges wide and four barges long, and liquid barge tows are three barges wide and five barges long. We believe that dry cargo barge carriers will likely have to make more adjustments to their wider tows to meet draft restrictions and reduce the risk of running aground. Barge companies are generating less revenue per mile travelled while still incurring the same costs to operate their barges. Given the high fixed costs involved with shipping, margins per shipment are lower.

Ultimately, however, profitability depends on a number of factors. Some carriers have clauses in their contracts that guarantee payment based on a minimum draft load, regardless of what water levels permit. They can also aim to reposition their vessels from the inland to the coast trade, which the drought does not affect, although this is less effective for spot operators because other carriers will be vying for the same business. If the drought persists, ship owners that have chartered some of their equipment (towboats or tugs) can

Table 1 | Barge Transport Companies

	Kirby Corp.	Marquette Transportation Co. Holdings LLC	Commercial Barge Line Co.
Rating	A-/Stable/—	B/Stable/—	B/Stable/—
Business profile	Satisfactory	Weak	Fair
Financial profile	Modest	Highly leveraged	Highly leveraged
Liquidity assessment	Strong	Adequate	Adequate

Table 2 | Fleet Statistics*

	Kirby Corp.	Marquette Transportation Co. Holdings LLC	Commercial Barge Line Co.
Description	Liquid bulk; Provides engine repair and other services	Dry bulk; Provides horsepower for tugboats and towboats	Dry bulk, Liquid bulk; Manufactures barges
Fleet	818 inland tank barges supported by 239 towboats, and 57 coastal tank barges supported by 64 tugboats	More than 800 dry cargo barges, more than 111 tugboats and towboats	1,617 dry cargo barges and 321 tank barges, 113 towboats, including 12 that are chartered

*As of June 30, 2012, for Kirby and CBL. As of Aug. 27, 2012, for Marquette.

return such equipment to lessors. Prolonged traffic delays could cause the charterer to incur demurrage charges (fees to cover the detainment of the vessel). Typically, if the demurrage results from weather delays, the shipper and the charterer split the costs.

The Drought Hits Dry-Cargo Carriers Hardest

In our view, Commercial Barge Line Co. (CBL; B/Stable/—) and Marquette Transportation Co. Holdings LLC (B/Stable/—) have the most exposure to the effects of the drought among the companies we rate, while Kirby Corp. (A-/Stable/—) has the least. CBL's grain transport segment, which accounts for 13.4% of the company's transportation revenues, mostly operates on the spot market. The company entered into fixed contracts on a portion of its capacity to mitigate potential revenue volatility because of the drought. CBL also generates revenues from the transport of other, nonagricultural bulk commodities and from its barge manufacturing seg-

ment. We believe that because of the diversity of CBL's operations and its reduced exposure to the spot market, the company should be able to weather the drought with only modestly lower revenues than we had previously expected for the company.

Marquette is the largest independent towboat operator in U.S. domestic shipping. Marquette's towboats provide the horsepower for river barges that transport liquid and dry bulk commodities. In addition to its tow boat service business, which accounts for most of its revenues and earnings, Marquette has a dry bulk barge transportation business that moves various commodities, including a small amount of grain. We expect the company's fixed-rate, long-term contracts, which make up slightly less than half of revenues, will partly offset the strain on revenue resulting from the drought.

Kirby is primarily a liquid bulk barge transportation company, carrying mostly petroleum products and chemicals on the inland river systems and on the coastal waters, which the drought does not affect. The company enjoys modest revenue

diversity from its marine engine service business. Since Kirby doesn't transport grain, reduced crop yields don't affect its shipment volumes. However, the company must handle the poor river navigation conditions and limit its loads to draft restrictions. We believe Kirby is better able than its competitors to deal with navigation-related delays because of its high contract coverage, which represents 75% of its transportation revenues. About 25% of Kirby's transportation segment revenue comes from the spot market, and this portion would have the most exposure to issues related to the drought. Even so, Kirby can reposition barges from the inland to its coastal liquid barge business, of which it has an 11% market share and long-standing relationships with major oil companies. The company also charters a portion of the tugboats and tow boats that provide the horsepower to move its barges. If the drought persists, Kirby can turn back the tugs and tows. We believe that Kirby's solid financial profile and strong liquidity will prevail despite any near-term revenue or earnings erosion from the drought.

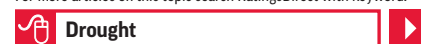
U.S. Inland River Systems



A More Prolonged Drought Could Cut Further Into Revenues

We expect that drought conditions will affect the operating results of the U.S. bulk barge companies that we rate. Dry bulk barge companies we rate will remain vulnerable to changes in crop yields and to demand cycles in the U.S. and abroad, since these commodities are consumed and are major exports. Still, we believe long-term contracts of at least a year, along with these companies' diverse service offerings, should dampen any near-term disruptions in profitability. The U.S. Army Corps of Engineers expects low water levels to continue through October. If, however, the drought lasts beyond the fall, operators' revenues and earnings could fall significantly further and put pressure on the financial risk profile of rated barge companies. **CW**

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Drought Shrinks Railroads' Grain Traffic

Overview

- We expect grain volumes for the North American railroads to fall between 10% and 15% over the next few quarters as a result of the U.S. drought, but other types of traffic will offset grain volume declines.
- Some truckers may experience slight but not significant gains in grain volumes because of low Mississippi River water levels.
- Overall, we do not expect any rating actions in the railroad or trucking sectors to result from a protracted U.S. drought.

Across the U.S., shippers and transportation companies alike have been feeling the pain of the most severe U.S. drought since the 1950s. The U.S. Department of Agriculture (USDA) has designated nearly half of the nations' counties as natural disaster areas. Nonetheless, the drought is having relatively little effect on Standard & Poor's Ratings Services' ratings on large Class I railroads—Union Pacific Corp., Burlington Northern Santa Fe LLC, CSX Corp., Norfolk Southern Corp., Canadian National Railway Co., Canadian Pacific Railway Ltd., Kansas City Southern (classification is based on operating revenue)—which should navigate drought conditions adequately given the sector's freight diversity and efficient operations.

Diversity Is Offsetting Lower Grain Volumes For Railroads

The drought has depressed the amount of grain U.S. Class I railroads carry. Grain volumes (the number of railcars loaded over a seven-day period) declined approximately 11% year-over-year for the 33 weeks ended Aug. 18, 2012, according to the Association of American Railroads. In the near term, we expect grain volumes that railroads transport to remain weak as a result of severe drought conditions and lower crop production, particularly corn.

The railroads use large single-commodity "unit trains" to carry grain, which is typically less time-sensitive and requires less handling than do some other commodities railroads carry. Railroads transport a fairly balanced mix of freight. Less time-sensitive commodities (coal, grain, and agriculture) primarily depend on weather conditions, export demand, and global supply. More-cyclically-sensitive traffic (intermodal, metals, automotive, forest products, building materials, and consumer goods) depend more on consumer spending, industrial production, and construction activity. In 2011, grain as a percentage of revenues for the large Class I rail-

roads represented about 15% to 20%, with railroads operating mostly in the western states having a higher proportion than the eastern rail carriers.

Despite weak grain volumes, given the freight diversity of the Class I railroads, we expect overall volumes will be up in the low-single digit percentage area in 2012. Volume gains will likely come from automotive, chemicals, domestic intermodal (combining railroad transport with other modes such as trucking), and shale natural gas related traffic. Weakness in grain and coal likely will offset some of this added volume.

Overall, we do not expect reduced grain volumes or a prolonged drought to have a significant credit impact on railroads we rate. In our view, pricing gains, better operating efficiency, and cost controls should result in earnings, cash flow, and credit measures that are acceptable for the ratings through 2013.

Barge Losses May Be Some Trucking Companies' Gains

This year's record drought has significantly reduced Mississippi River water levels, which are currently near historical

low levels. As a result, barges are reducing loads to remain afloat. To the extent barge capacity is constrained, some freight may be diverted to the railroads, or, in the case of short-haul freight, trucking may be an alternative. Still, the benefit of any such diversion would be far outweighed by reduced grain volumes on the railroads. Trucking is a much less economical mode of transporting grain and other agricultural commodities in comparison to shipping by barge. A single barge can carry up to the equivalent of 70 truckloads, which would require greater labor costs and higher fuel consumption. If low water levels continue to constrain shipping capacity, we expect transportation costs (for commodities that are transported on the river) to rise as a result of freight diversion to truck and, in some cases, to railroads.

Year-to-date 2012, compared with the same period last year, truckload tonnage was up about 4%, according to the American Trucking Association. Supply and demand appear to be balancing in the truckload sector because of increased regulations, bankruptcies of smaller carriers, and reduced fleet investment by some of the larger carriers. We do not expect a potential uptick in tonnage as a result of freight diversion from the Mississippi River to have an impact on ratings in the trucking sector. The truckload industry is highly fragmented, with the top 10 carriers representing 2% of the total trucking industry revenues. Although a modest increase in grain traffic may benefit some small regional truckload carriers, we do not expect it to have a material impact on our rated universe of trucking companies. In the event of a prolonged drought, we do not expect this potential freight diversion to have a significant credit impact on large, diversified trucking companies we rate. **CW**

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We do not expect reduced grain volumes or a prolonged drought to have a significant credit impact on railroads we rate.

Class I Railroads Agricultural Products As A Percentage Of Freight Revenues

(%)	2010	2011	6 months ended June 30, 2012
Union Pacific Corp. ¹	19	18	18
Burlington Northern Santa Fe LLC ²	21	20	19
CSX Corp. ³	17	16	16
Norfolk Southern Corp. ⁴	14	13	13
Canadian National Railway Co. ⁵	19	19	17
Canadian Pacific Railway Ltd. ⁶	33	33	30
Kansas City Southern ⁷	24	21	20

Source: Company filings. (1) Union Pacific includes grain, grain products, and food. (2) BNSF includes wheat, corn, bulk foods, soybeans, oil seeds and meals, feeds, barley, oats and rye, flour and mill products, specialty grains, malt, ethanol, and fertilizer. (3) CSX includes agricultural products, phosphates and fertilizers, and food/consumer. (4) Norfolk Southern includes agriculture, consumer products, and government revenues. (5) Canadian National Railway Co. includes grain and fertilizers. (6) Canadian Pacific Railway Ltd. includes grain, sulfur, and fertilizers. (7) Kansas City Southern includes agriculture and minerals, which consists primarily of grain and food products.



Drought Will Hurt U.S. Crop Insurers, But Won't Dry Them Up Completely

Overview

- Farmers in the most affected states are expecting one of their worst harvests since the drought in 1988.
- Crop insurance books of business will see some of the worst underwriting results since 1988.
- Primary insurance companies will share crop losses with the federal government and private reinsurance companies.
- Underwriting losses will be a drag on earnings, but by themselves, will likely not affect the capital of most insurers that we rate. Consequently, we do not expect to take any rating actions solely because of crop insurance losses at this time.

2012 is shaping up to be one of the worst years on record for farm production because of the most severe drought since 1988. With the corn and soy crops severely damaged, this year's harvest will be substantially less than in past years. Because of shortfalls at harvest, farmers will call on crop insurers to defray their financial losses. Standard & Poor's Ratings Services believes that crop insurers will see some of the worst underwriting results on their books of business since the drought of 1988. As bad as the results may be, however, they will be manageable because of loss sharing from the U.S. government and diversification with other lines of business.

We expect early estimates of insured losses to exceed \$5 billion for the pri-

vate crop (re)insurers if the 2012 drought is worse than the 1988 drought. Therefore, we expect that with the exception of a few outliers, these losses will be contained within third-quarter 2012 results. Based on these early industry estimated insured losses, we do not expect to take any rating actions solely because of crop losses at this time.

Crop insurers operate through the Multiple Peril Crop Insurance (MPCI) program, which is administered by the U.S. Department of Agriculture's (USDA) Risk Management Agency. The MPCI program supports the crop insurance industry by creating policy forms and actuarial premium rates, providing premium subsidies to farmers, providing administrative and operation expense subsidies for crop-

insurance companies, and reinsuring crop insurers through the Federal Crop Insurance Co. (FCIC). About 80% of insurable U.S. farm land is covered by the MPCI program. In other words, USDA's crop insurance program currently insures 264 million acres, 1.14 million policies, and \$110 billion worth of liability on about 500,000 farms.

Losses Will Be Uneven

Crop insurers' shares of underwriting losses will depend greatly on their geographic distribution and use of reinsurance. Insurers with higher concentrations of premiums in the most-affected states (such as Kansas, Illinois, Kentucky, Indiana, Missouri, and Tennessee) will see a larger share of the losses. Insurers with underweight positions in the Midwestern states could take a smaller share.

Results for specific companies vary not just with geography, but also according to their use of government and private reinsurance. On average, the FCIC takes in about 20% of the premiums and reinsures about 40% of losses. In an extreme year like 2012, however, the FCIC will take a much

larger share of the losses because of loss-sharing features in the Standard Reinsurance Agreement dictating that the FCIC take a greater share of the losses in each state as the loss ratio in that state increases. Losses in excess of a 500% loss ratio in any state are fully covered by the FCIC. Also, crop insurers can designate riskier premiums as "assigned risk," allowing them to retain less risk by passing more on to the FCIC. We believe that use of the assigned risk fund has greatly mitigated the impact of insurers' crop losses in 2012 (*see chart*). (For further discussion of the MPCI program and historical crop insurance results, see "Crop Insurance Is Volatile, But Profitable," published Dec. 15, 2011, on RatingsDirect, on the Global Credit Portal.)

In addition to government reinsurance, primary crop insurance writers often purchase quota-share and stop-loss reinsurance in private markets. Quota-share reinsurance typically lowers retained premiums and retained losses proportionally, and thus mitigates the absolute size of losses without changing the loss ratio. Stop-loss coverage, which typically attaches just above a 100% loss ratio, could

2011 Approved Insurance Providers

Insurer	(Mil. \$)*
Rural Community Insurance Co.	1,793.4
ACE Property & Casualty Insurance Co.	1,672.1
NAU Country Insurance Co.	1,397.1
Great American Insurance Co.	1,046.2
American Agri Business Insurance Co.	842.7
Producers Agriculture Insurance Co.	626.3
Farmers Mutual Hail Insurance Co. of Iowa	549.4
Stonington Insurance Co.	414.9
John Deere Insurance Co.	397.7
Austin Mutual Insurance Co.	344.5
Occidental Fire & Casualty Co. of NC	180.9
Hudson Insurance Co.	145.6
Country Mutual Insurance Co.	115.4
American Agricultural Insurance Co.	48.0
GuideOne Mutual Insurance Co.	20.8
Total	9,595.0

*Direct premiums written.

Source: National Association of Insurance Commissioners data.

substantially lower retained losses with a less-pronounced impact on premiums, providing a better loss ratio in higher loss years. Thus, this year's losses will be spread to private reinsurance companies through quota-share and stop-loss arrangements. We do not believe that reinsurers will report devastating losses, as crop premiums tend to be only a small portion (less than 10%) of their overall portfolios.

Diversification Prevents Capital Damage

Underwriting losses will be a drag on earnings, but by themselves, will not affect the capital of most insurers that we rate. Consequently, we do not expect to take any rating actions solely because of crop insurance losses. Publicly traded crop insurers have not yet booked this year's losses in their second-quarter financials,

because losses could be considered a third-quarter event. However, many (re)insurers have indicated on recent investor calls that they may be facing a worst-case scenario. Actual net losses will probably not be a true worst-case scenario, which usually means gross loss ratios hit 500% in every major state. Nevertheless, from our conversation with companies, analysis of historical results, and review of public information, we believe that the net loss ratio (before private reinsurance) retained by the insurance industry could exceed 120%. Actual losses will depend on harvests, the weather during the next few months, and corn and soy prices at the time of harvest.

However, such underwriting losses are manageable in the context of companies' capital levels and premium diversification. The loss ratio could be

lower for some companies depending on geographic concentrations and use of private reinsurance. For reinsurers, stop-loss portfolios could have poor results, but these portfolios tend to represent a small portion of reinsurance premiums.

How Long Will We Feel The Heat?

The effects of the 2012 drought may linger for some time. Already, the losses have become a talking point in the debate over the 2012 Farm Bill. Crop insurance appears to have gained support in Congress as a more acceptable form of support than many of the other subsidies to the agricultural industry. Politicians may be reluctant to cut this form of support in a year that so many farmers had devastating harvests. However, other items included in the Farm Bill, such as food stamps, make the ultimate outcome less certain.

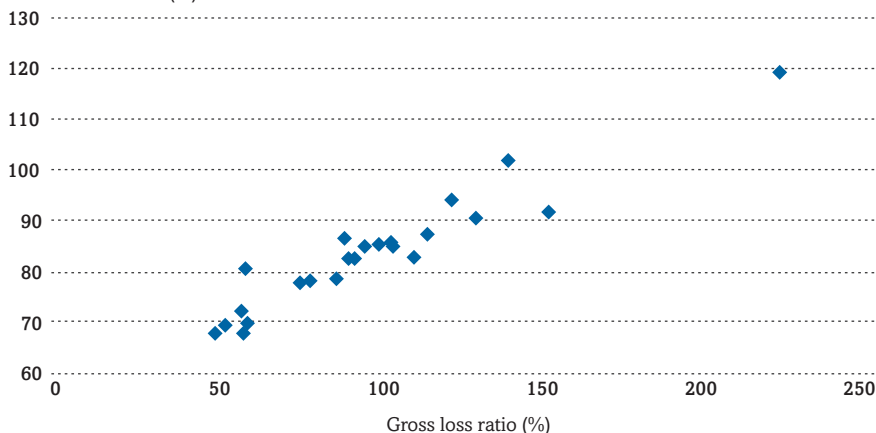
In addition, the poor harvests may be financially disruptive to some farmers that were less able to withstand financial setbacks. This may disrupt farming behavior for upcoming growing seasons and alter the landscape of crop risk. This is somewhat mitigated by profits during the past few years from higher crop prices. Furthermore, some fear that warmer weather in recent years is a product of global warming, which could make drought-like conditions more probable in future years. The insurance industry may need to adjust if any of these conditions become a future reality. However, we expect future premium rates to account for poor loss years, and crop insurers to maintain profitability over a longer time horizon, but to continue seeing volatile results. **cw**

Underwriting losses will be a drag on earnings, but by themselves, will not affect the capital of most insurers that we rate.

Loss Ratio Net Of Government Reinsurance Versus Gross Loss Ratio

(1989 To 2011)

Net loss after SRA (%)



In 1996, the USDA formed the Risk Management Agency (RMA) to manage the MPCP program for the FCIC. The RMA is responsible for setting the premium rates that approved insurance providers (AIPs) must follow and for negotiating the Standard Reinsurance Agreement (SRA), which defines the reinsurance relationship between the FCIC and the AIPs.

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Credit FAQ

The Drought Spurs Municipally-Owned Utilities To Rethink Their Long-Term Plans And Funding

While Standard & Poor's Ratings Services believes the drought's immediate credit effect on most utilities is small, we note that nearly every state already had plans to deal with this eventuality and that planning truly has been indispensable. The drought has placed fresh emphasis on the sector's needs and long-term challenges. Our view of the current impact assumes that the drought does not prolong or become more pronounced like the one experienced in the 1950s.

Q. *What exactly is a drought and how is it measured? Just how bad is the current drought?*

A. The National Oceanic and Atmospheric Administration identifies four types of drought, any of which could currently be interpreted as applicable in parts of the U.S.:

- Meteorological—a measure of departure of precipitation from normal. Due to climatic differences, what might be considered a drought in one location of the country may not be a drought in another location;
- Hydrological—occurs when surface and subsurface water supplies are below normal;

- Agricultural—refers to a situation where the amount of moisture in the soil no longer meets the needs of a particular crop; and

- Socioeconomic—refers to the situation that occurs when physical water shortages begin to affect people.

The federal government's National Integrated Drought Information System uses as a common measure called the Palmer Drought Severity Index, which incorporates temperature, precipitation, soil moisture, and supply and demand, and assigns a score that is usually between 4 (extremely moist) and minus 4 (extreme drought). As of Aug. 18, 2012, virtually the entire continental U.S.

between the Rocky Mountains and Mississippi River, as well as much of California and all of Illinois had a score of minus 4 or worse.

Q. *Is it possible to estimate the drought's financial toll?*

A. While it is too soon to determine all of the drought's measurable effects, we expect a significant financial impact across many sectors, such as emergency intergovernmental aid, insurance claims for agricultural and ranching losses, food prices, and electricity rates if certain plants are unable to generate power due to cooling water sources that are too low

States' Water Plans

State	Lead agency	Is state water plan mandatory for local utilities?	Year last updated or update frequency	Comments
Alabama	Department of Economic and Community Affairs Office of Water Resources	No	2004	State is subdivided into nine regions to coordinate planning
Alaska	Department of Natural Resources	N.A.	N.A.	No state-specific plan; there is only one which is related to a 1996 Western Governors Association agreement in concept
Arizona	Department of Water Resources	No	Annual	Encourages a perpetual "culture of conservation"
Arkansas	Natural Resources Commission	No	2012	No statewide plan until 2014, although 75 conservation districts help establish local/regional plans
California	Department of Water Resources	Yes	Annual	Any system with at least 3,000 connections must submit a plan to the state and update it every five years
Colorado	Water Conservation Board	Yes	2010	Thorough step-by-step action plan previously established has helped state deal with 2012 emergencies
Connecticut	Water Status	Yes	2003	State provides model water conservation ordinances for locals to follow
Delaware	Division of Water Resources	N.A.	N.A.	N.A.
Florida	Department of Environmental Protection	No	2007	Puts into place short- and medium-term steps for each state agency as droughts develop and worsen
Georgia	Department of Natural Resources	Yes	2011	Radically updated in concert with Tri-State Water War resolution efforts, with conservation a major focus
Hawaii	Commission on Water Resource Management	No	2008	State plan has a heavy emphasis on conservation
Idaho	Water Resource Board	No	2012	Latest update is more basin- and region-focused
Illinois	Department of Natural Resources Office of Water Resources	No	2011	Timely update recommended, giving the state the authority to implement restrictions in extreme conditions
Indiana	Department of Natural Resources Division of Water	Yes	2009	Can mandate as much as 15% restrictions in areas with water shortage emergencies
Iowa	Department of Natural Resources	No	2009	The most recent update focused on allocation and water rights to avoid conflicts in times of shortages
Kansas	Water Office	No	2009	Established priorities for each of the state's 12 river basins for the upcoming five years

or too warm. Thermoelectric power generation (49%) and irrigation and farming (33%) account for more than five times the water used for public supply (15%) in a typical year (see *"From Droughts To Conservation, Water Can Have Big Effects On U.S. Municipal Credit Quality," published Feb. 29, 2012, on RatingsDirect, on the Global Credit Portal*).

Q. *Texas in 2011 experienced its worst one-year drought. Are there any lessons from it that are applicable to the water utility sector?*

A. In February 2012, the state comptroller estimated that direct and indirect

agricultural losses from the drought were \$8.7 billion. That did not even include the 2,700 homes destroyed in the wildfires that burned almost 4 million acres of land, the harder-to-measure effect on local and regional tourism and economic development, or the longer-term impact from an accelerated migration from rural to urban areas.

From a water supply standpoint, however, most of Texas was in reasonably good shape entering 2011, as most key reservoirs and aquifers were relatively healthy and far above the safe-yield levels. A safe yield is the maximum amount of water that can be withdrawn from a water source during a drought without causing

an adverse effect. Cities and regions respond differently, however. For example, San Antonio Water System (SAWS; AA/Stable) has had for decades conservation-oriented rates and constant public education about the need for conservation. It successfully reduced demand on the Edwards Aquifer, and still maintained good debt service coverage and strong liquidity even through the 2011 drought. The city of Midland (AA+/Stable), which receives much of its supply under a contract with wholesale provider Colorado River Municipal Water District (CRMWD; AA-/Stable), has seen two of its three reservoirs fall to below 1% full, and could see the third drop to the same level by

States' Water Plans (continued)

State	Lead agency	Is state water plan mandatory for local utilities?	Year last updated or update frequency	Comments
Kentucky	Department of Environmental Protection Drought Monitoring Center	No	2008	State is subdivided into 15 regions to implement a tiered approach to drought, resource management, and long-term planning
Louisiana	Department of Environmental Quality	N.A.	2008	Plan is focused on hazard mitigations that are man-made (pollution control) and natural (flooding)
Maine	Department of Conservation	No	2010	Legislature in 2007 established Water Resources Planning Committee to plan for sustainable use of water resources
Maryland	Department of the Environment	Yes	2000	A 2000 advisory committee established a blueprint of recommendations that now include ability to declare water emergencies and conservation measures
Massachusetts	Department of Energy and Environmental Affairs	No	2010	In 2010, the state created an advisory committee that focused on stream flows, safe yields, and sustainability
Michigan	Department of Natural Resources	No	2008	In 2008, the state created an advisory committee that focused on withdrawals, water conservation, and identifying any legal conflicts before they arise
Minnesota	Department of Natural Resources	Yes	2009	State can work with local utilities to affect goal of 25% reduction in restrictive phase of drought and priority rationing in emergency phase
Mississippi	Department of Environmental Quality	N.A.	N.A.	State has a number of region-specific hydrologic studies to monitor supply and use, including in the Southern Hills sole-source aquifer area
Missouri	Department of Natural Resources	No	2002	Plan created coordinated response and advanced emergency planning by regions, which especially helps rural systems
Montana	Department of Natural Resources & Conservation	No	2012	Advisory committee that meets monthly has released annual reports on drought that build on decades of long-term plans across state government
Nebraska	Governor's Climate Assessment Response Committee	No	2000	Given its substantial agricultural economy, state plan looks at not just operational prioritization, but potential income loss and socioeconomic effects
Nevada	Division of Water Resources	Yes	2012	Governor can be empowered with emergency authority, but local systems are already compelled to have both drought management and water conservation plans on file

early 2013. The district, however, has a project to connect a large groundwater well field into the CRMWD system to replace the lost surface-water supplies. Midland has also fast-tracked an arrangement to develop and bring online a new well field by early 2013. Meanwhile, it quintupled the highest tiers of its volumetric retail water rates in April 2012. The rate adjustments were not just a major conservation signal, but also will provide funding to pay for the CRMWD and city projects. Midland would have started these projects anyway, but accelerated them because of the drought. It is reasonable to assume drought-affected utilities in other states will take similar actions.

Q. *Municipal utilities operate as enterprises. How does a drought affect the way they do business?*

A. The U.S. Environmental Protection Agency (EPA) estimates one-third of all residential water use in the U.S. is for outdoor irrigation. Some municipal utilities will see better-than-expected operating revenues as homeowners continue watering their lawns to maintain landscaping. Results for others would be even stronger but for emergency water restrictions that limit water sales. Standard & Poor's also expects some utilities' revenues to fall short of their target in cases of extreme water restrictions and/or customers realizing out-

door water use is more discretionary compared with essential consumption. Generally, a one-time revenue anomaly attributed to weather is not a cause for a rating change, all other things being equal. If there are other underlying credit changes that in our opinion are likely to become significant, we would review the rating.

Q. *What are some of the common characteristics of various states' water and/or drought management plans?*

A. Most states have at least some basic water plan (*see table*), even if it is just an amalgam of a number of local or regional plans based on common water-

States' Water Plans (continued)

State	Lead agency	Is state water plan mandatory for local utilities?	Year last updated or update frequency	Comments
New Hampshire	Department of Environmental Services	No	1990	Governor is tasked with coordinating multiagency response efforts based on detection and monitoring set up by the plan
New Jersey	Department of Environmental Protection	Yes	2002	State is divided into six regions for planning purposes, but the governor can implement restrictions in a specific area following an emergency declaration
New Mexico	Office of the State Engineer	No	2008	A gubernatorial task force has met semiregularly since 1996 to provide updates to the sector-by-sector plan that also looks at climate change effects
New York	Department of Environmental Conservation	Yes	1998	Aside from the nine regions in the state, New York City Municipal Water Finance Authority also has its own drought plan. All include the ability for emergency restrictions to be put into place at county or city level
North Carolina	Division of Water Resources	Yes	2008	Planning efforts became the law in 2008 that centralized authority of previous laws such as local water shortage response plans
North Dakota	State Water Commission	No	2011	Plan aims to tie projects to funding sources based on existing projects in the queue
Ohio	Emergency Management Agency	No	1999	State provides assistance to local communities for drought contingency plans
Oklahoma	Water Resources Board	No	2012	The 13 regions compiled their recommendations into a 2012 update to existing plan. It includes recommendation to create conservation incentives funded in part by the state
Oregon	Water Resources Department	N.A.	N.A.	Authority vested in various state powers that include emergency permitting, temporary water rights transfers, and enforcement of existing senior vs. junior water rights
Pennsylvania	Department of Environmental Protection	No	2008	One of most comprehensive in the state's history, the plan aims to implement data collection for sustainable resource management, especially in extreme conditions such as floods and drought
Rhode Island	Water Resources Board	Yes	2002	Governor can be empowered with emergency authority, but Water Resources Board mainly gathers data, coordinates response efforts, and makes recommendations

sheds and population centers. Even states that don't have a specific drought plan tend to have at least some kind of comprehensive water plan that addresses supply, consumption, and resource management. Some plans are dynamic and are updated regularly, while some remain largely or completely unchanged. Very few plans are anything more than state guidelines. Typically, the authority to mandate water conservation measures is left to the local utility, although some plans can authorize the state's governor to declare statewide conservation measures in extreme circumstances. In other cases, conservation requirements come indirectly, such as in Georgia, where the

local utility has to have a plan to meet eligibility requirements for consideration for a state revolving fund loan. Some plans are regional, such as those of the Delaware River Basin Commission for New York, New Jersey, Pennsylvania, Delaware, and New York City. Many state plans either compel or defer to the local utilities to come up with their own plans, either individually or regionally, based on common watersheds and population centers. State plans generally:

- Provide a framework for coordination of efforts among several agencies and departments;
- Establish best practices for resource management; and

- Define priorities among users, such as homes, agriculture, industry, and electric power generation, so that there is a clear methodology to rely on in the event of emergencies.

Q. *What are the long-term challenges that have come to the fore as a result of the drought?*

A. According to the American Public Power Association, there are 3,269 electric utilities in the U.S. and 68% of retail customers are served by an investor-owned utility. The North American Electric Reliability Corp. works with eight regional transmission organizations to manage the

States' Water Plans (continued)

State	Lead agency	Is state water plan mandatory for local utilities?	Year last updated or update frequency	Comments
South Carolina	Department of Natural Resources	No	2004	Includes recommendations to authorize state to regulate withdrawals from surface and ground water to avoid shortages as well as resource management guidelines to manage through a drought
South Dakota	Department of Environment & Natural Resources	No	Annual	Consists of both facilities and resource management plans, largely to prioritize and determine funding. Not mandatory, but a project won't be funded unless it is on the list
Tennessee	Department of Environment & Conservation	No	2010	Drought management plan includes some items from the Tennessee Valley Authority's Tennessee River Drought Management Plan
Texas	Water Development Board	No	2012	State is divided into 16 regions to coordinate planning for the next 50 years; plan is updated every five years
Utah	Division of Water Resources	No	2007	Drought plan is one of many that comprise the overall state water plan generally done by river basin
Vermont	Watershed Management Division of Department of Environmental Conservation	No	Varies by basin	State directs regional and municipal plans in one of 17 basins to be updated every five years
Virginia	Department of Environmental Quality	No	2003	The 2003 drought plan is a component of the state water plan currently under development
Washington	Department of Ecology	No	Various	One of the most widely developed resource management systems in the U.S. given the complexity of water rights and multijurisdictional water management responsibilities, including federal hydropower and riparian obligations and riverine habitat
West Virginia	Department of Environmental Protection	N.A.	N.A.	Although a number of smaller plans already exist, in 2008 the state legislature directed the Department of Environmental Protection to have a comprehensive water resources management plan by 2013
Wisconsin	Department of Natural Resources	No	2010	While the focus is on water quality, the state water plan also addresses resource management and the need for supplies to meet growth
Wyoming	Water Development Commission	No	2007	Plan is essentially a summary of all seven river basin plans and includes recommendations for future updates

N.A.—Not available.

electric grid for the continental U.S. In comparison, there are over 50,000 community water systems, of which about 85% of which are municipally-owned. Although the 4,000-plus largest systems serve about 80% of the U.S. population, the sector is decentralized as there is no water grid.

Identifying and planning for treatment capacity expansions or distribution system rehabilitation is done easily enough because this is a more unilateral, locally-decided action. Enhancing the long-term water supply can be more difficult, however, because more than one utility may rely on the same water source. Given that surface water sources such as rivers and lakes—which are usually more affected than groundwater by drought—serve 70% of the U.S. population, this challenge is exacerbated in times of drought. In any case, a water utility is one of the most capital-intensive enterprises a municipality is likely to operate, so even if there is consensus among the planners, funding projects is always a big challenge.

Q. What will all these projects cost?

A. In 2011, the EPA conducted its survey (done every four years) to assess the drinking water sector's needs. A similar clean water survey is currently underway. The 2011 results are expected to be reported to Congress by February 2013. The previous report, released in 2009, identified \$334 billion in needs over 20 years just to maintain existing infrastructure. However, the only water supply projects included in the surveys were those necessary to serve existing customers. Many projects for new reservoirs and dams that are based on growth assumptions might not be eligible for drinking water state revolving fund (DWSRF) loans and, therefore, might not even be part of that total.

Q. What about federal funding options?

A. DWSRF loans have been around since the 1996 amendments to the Safe Drinking Water Act. Federal funding by way of direct EPA appropriations to the states provides most of the DWSRF funding, with states providing a share as well. Results of the

EPA's needs assessment survey largely determine the allocation to each state. Aside from a temporary \$2 billion spike in funding in 2009 due to the federal stimulus package, DWSRF appropriations have been declining. The \$850 million proposed for fiscal 2013 is down 7% from fiscal 2012, and would be at about fiscal 2005's funding level. The Build America Bonds program that provided a federal subsidy for taxable municipal bonds expired Dec. 31, 2010, and is unlikely to be resurrected given concerns about the federal budget deficit. Direct appropriations for specific drinking water projects are also unlikely for similar reasons. As a result of the search for alternative funding sources, talk about lifting the volume cap on private activity bonds (PABs) is growing louder, although no changes in the law have yet been implemented. PABs are tax-exempt municipal bonds issued for certain privately owned facilities that are deemed to have a public benefit. The intent is to create a public-private partnership that is eligible for low-cost financing. While most commonly issued for 501(c)(3) entities and multifamily housing projects, utilities are also considered PAB-eligible. Unlike projects for 501(c)(3) entities that have no annual issuance limit, the issuance of water-related PABs is limited to a dollar amount per state per calendar year.

Q. If DWSRF money is harder to come by, what are the alternative sources of financing?

A. In 2011, legislators made competing proposals for a federal infrastructure bank. The Kerry-Hutchinson bill (S 652) as proposed would require the American Infrastructure Financing Authority to be, at worst, revenue-neutral and funded with \$10 billion in federal funds and at least that much in private seed money. Another proposal (HR 402) would provide \$25 billion to create the National Infrastructure Development Bank, with a U.S. Treasury backstop. In both cases, drinking water projects would compete with clean water, energy, and transportation projects. Neither would likely meaningfully close the funding gap.

A recent proposal that has gained increasing industry support is modeled

after the existing Transportation Infrastructure Finance and Innovation Act (TIFIA). Congress held hearings in early 2012 on the proposal, which would create a water industry equivalent called WIFIA. WIFIA would provide loans, loan guarantees, and lines of credit for eligible projects, even on a subordinate-lien basis to existing bondholders. The proposed bill (HR 3145) is currently in committee.

Q. Will these options, even the proposed funding sources, be enough?

A. Given the magnitude of investment requirements, Standard & Poor's believes that nonlocal funding sources will be helpful, although local utility customers will ultimately bear most of the cost. Having federal and state funding participation lined up can often help spur a project into the construction phase, but municipal utilities tend to begin construction on a just-in-time basis anyway. Droughts can and often do compel utilities to act quicker since public support may be at a peak, but utilities must have the ability and willingness to adjust rates to generate funding for their projects, absent an outright regulatory mandate.

Standard & Poor's maintains about 1,300 utility revenue bond ratings. The most common rating is 'A+'. In general, the residential water bill is about 1.1% of median household effective buying income and the residential sewer bill is about 1.3% for rated utilities. We assume 8,000 gallons of each service a month in our methodology. There is no formal definition of affordability, but the industry guideline considers a combined water and sewer bill high or less affordable when it is 4% to 5% or more of household income. Such a bill also would imply that the utility has a reasonable amount of revenue-raising flexibility in terms of raising its rates. **cw**

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A Prolonged Drought May Leave Some U.S. Local Governments Parched

Overview

- The worst U.S. drought in more than 50 years is hurting rural and urban communities, especially those that depend heavily on revenue from agriculture and water-related tourism and recreation and those susceptible to wildfires.
- A piecemeal federal approach to drought relief isn't helping matters, and a divided Congress has so far failed to take meaningful action.
- So far the drought hasn't had a meaningful effect on our ratings for state and local governments, but its effects are still emerging; the hardest hit communities are likely to have a harder time coping with them.

In 1934, at the height of the Dust Bowl, drought afflicted roughly 80% of the continental U.S. The current drought, the most severe in at least 50 years, is beginning to approach that magnitude. As of Aug. 21, 2012, the National Integrated Drought Information System (NIDIS) reported that about 63.2% of the contiguous 48 states were experiencing at least moderate drought conditions with nearly 44% of the lower 48 states experiencing severe conditions. As a result, yields for crops such as

corn, wheat, and soybeans have plummeted, leading food prices to rise.

The drought has also left its imprint on communities. Wildfires have increased, damaging public and commercial buildings, in addition to homes. Communities that depend on tourism and recreational activities for revenue are suffering from drought conditions as well. In some cases, economic development, especially in rural and less-diversified communities, has taken a hit. And the severe drought is even hurting larger, more economically diverse communities.

However, we believe that state and local government officials have responded with some policies and programs...that should mitigate some of the drought's harsher effects.

However, we believe that state and local government officials have responded with some policies and programs, including restrictions on water use and financial aid, that should mitigate some of the drought's harsher effects. Nonetheless, given the difficult conditions and a patchwork federal response, many governments will have difficulty addressing the longer-term problems caused by the drought. For now, however, we have not yet seen a meaningful effect on our ratings for state and local governments.

Agriculture-Based Communities Are Feeling The Heat

When rating the credit quality of urban and rural communities that issue general obligation debt, we evaluate factors that include the local economy, debt profiles, finances, and fiscal management. The widespread drought has hit the economies and finances of communities that rely heavily on agriculture, livestock, and water-related tourism. Although we believe the credit effect on these local governments has not been noteworthy to date, the longer the drought continues the more likely it is to weaken those economies and their revenue generation

potential. The drought also has hurt, to a lesser degree, more urban and economically diverse communities.

We believe the drought could disrupt the economies of rural communities with significant agriculture-based activity, particularly cities and counties that experience the greatest decrease in rainfall and areas that lack diverse economies. It could have a more immediate and greater effect on area economies that rely heavily on livestock production because federal crop insurance doesn't cover livestock.

U.S. Department of Agriculture (USDA) projections have nationwide soybean production decreasing by 12% in 2012 and corn production decreasing by 13% to its lowest level since 2006. NIDIS estimates that as of Aug. 21, 2012, 85% of the U.S. corn crop, 83% of soybeans, 71% of cattle, and 63% of hay areas are experiencing drought. Nearly half of the corn and soybean areas are experiencing extreme-to-exceptional drought. Federal insurance should somewhat mitigate the drought's effect on farmers. About half of the nation's livestock production, however, is in regions where the drought is severe. In fact, the USDA considers a record-high 59% of the nation's pastures and ranges are "poor" or "very poor." Combined with higher grain prices, this has increased production costs.

We believe a single year of a drought has an immediate, but not likely lasting, effect on sales tax revenue. Even if farmers receive crop insurance, proceeds might not generate the same household income as a successful harvest; this could result in a loss of buying power or scaled-back spending, as well as reduced sales tax revenue. Unless local businesses were already struggling,

however, most could withstand the lost revenue. And we don't believe a one-year drought would have much of an effect on property value or property taxes since taxpayers are unlikely to repudiate their tax bills or sell their farms under such conditions.

Over the longer term, a sustained drought would further hinder agricultural production and reduced farm profits would lead to still lower sales tax revenue. Farmers might eventually be forced to abandon or sell their farms. Farming-related businesses could also shut down or scale back operations, which would likely decrease property value and taxes. In addition, increased unemployment would lead to lower income tax revenue. Poor job prospects could spur migrations to other communities. This cycle of economic decline would likely undermine local communities' economic development efforts.

The record-setting drought has desiccated Texas' agricultural land and the state's economy

In 2011, Texas experienced the worst recorded year of drought in its history. The Texas AgriLife Extension Service estimates the state had direct agricultural losses of \$5.2 billion and indirect agriculture-related losses of an additional \$3.5 billion. Livestock accounted for the largest direct loss at an estimated \$2.1 billion. In addition, the Texas Water Development Board estimates a multiyear drought—where Texas experiences average rainfall between 22.3 inches and four inches of rain annually moving from east to west for five to 10 years—could have a \$116 billion effect on the state's economy.

The drought's implications on agriculture-based communities and credit quality

We believe the likelihood of credit deterioration is least likely in regions where the drought is short-lived because we think most local governments that significantly rely on agriculture could survive an exceptional drought that is relatively short. Cities and counties, however, tend to generate a significant share of their revenue from property taxes. We believe this revenue stream

could decrease if the drought persisted and lead to lower assessed value for agricultural properties and related businesses. An extended drought for multiple years could lead to credit deterioration if, in our view, the drought's effect on the local economy weakened the local government's ability to pay its obligations in a timely manner.

We believe economic diversification through comprehensive and regional economic development policies that address infrastructure, education, housing, jobs, and the environment is key to long-term economic viability and credit quality. Other options to minimize the drought's effects on rural communities include federal, state, and regional government assistance programs.

Even Diverse Urban Communities Aren't Immune To Drought

A community's ability to be economically diverse and stable largely depends on its having a variety of profitable sectors, an advantage we believe urban centers tend to have over their rural counterparts. While this makes larger cities and counties less susceptible to drought, urban centers are not immune. A drought can have short- and long-term consequences on economic development, regardless of locale.

Many cities in drought-stricken areas act as regional economic centers for agriculture-dependent areas. If leading city employers are in agriculture-related industries, such as livestock processing or food manufacturing, lower yields and higher prices could lead to layoffs. In addition, when farming or ranching revenue decreases, lowering residential income, cities could experience decreased sales tax receipts.

We believe a single drought season is unlikely to deter potential development and business plans that are already underway. In certain circumstances, however, sustained dry or drought conditions could make local economic development programs difficult to execute. For economically diverse communities, a drought could mean increased household expenses, due to higher food prices, and higher business costs. Overall, however, we consider those communities more resilient and better able to withstand weather-related disruptions.

Arid Conditions Are Spurring Wildfires

Prolonged droughts combined with environmental factors, such as dry fields and swampland brush, can create ideal conditions for wildfires. As the drought continues to spread, we believe many municipalities are facing an increased risk of wildfires. Last year, drought conditions contributed to record-setting wildfire activity in Texas, New Mexico, Arizona, and Minnesota. According to the National Interagency Fire Center, 73,484 wildfires burned 8.7 million acres of land nationwide in 2011, which exceeded the 2001 to 2010 annual average of 6.5 million acres. Through August 2012, 42,927 wildfires nationwide have burned roughly 7.04 million acres.

The effect of drought-influenced wildfires on a Texas community

In September 2011, a wildfire in Bastrop County in central Texas burned roughly 34,000 acres and destroyed more than 1,600 homes, making it the most destructive fire in state history. The fire affected at least three municipal issuers: Bastrop (A+/Stable), Bastrop County (AA-/Stable), and Bastrop Independent School District (A+/Stable).

Before the wildfires, Bastrop had been experiencing healthy economic growth and diversification due to its access to the rapidly expanding economy of Austin, roughly 30 miles away. After the fire, however, continued economic development in areas the wildfire didn't affect and the rapid reconstruction of damaged and destroyed properties resulted in a significant sales tax revenue spike and a minimal effect on the property tax base. The Bastrop area issuers didn't experience credit quality deterioration because land remained desirable, providing incentives for residents to rebuild damaged properties.

Credit quality deterioration, however, is possible for rural municipalities that lack significant economic depth and diversity or access to major economic centers. It is our opinion that severe economic dislocation is more likely due to the potential loss of agriculture-related industries caused by drought-influenced

wildfires, which are predominant in rural areas. An outflow of residents is also more likely in rural areas where residents have limited alternatives for employment and might lack incentives to rebuild after a wildfire, which could have a long-term effect on the local economy and tax base.

With two years of below-average water levels, lakeshore business around Lake Travis in Austin, Texas is down. Boating and fishing activities have decreased. Austin expects to take a sales tax revenue hit. The Lake Travis Chamber of Commerce estimates the drought could cost the area up to \$21 million of lost revenue.

entities, and the federal government have grappled with the far-reaching consequences of drought. Many state and local governments include drought scenarios in their comprehensive water management, land-use, and long-term planning strategies. And in response to drought-related challenges over the past several years, Congress has enacted laws to create federal programs to reduce the effect of drought on communities. Special Congressional appropriations of federal taxpayer dollars underwrite much of the drought relief.

Despite these efforts, however, the U.S. relies on a patchwork approach to reducing the effect of drought with no single federal agency responsible for preventing or responding to the effects of drought. Because of this, state and local governments must deal individually and separately with each federal agency involved in drought assistance. So, rather than planning and implementing proactive mitigation measures, which is also the goal of state and local governments, crisis management often characterizes the federal response to drought emergencies.

The USDA, however, is highly involved in many aspects of preventing drought effects and providing relief to agricultural producers. To assist producers facing extreme drought conditions, the USDA will immediately use nearly \$16 million of financial and technical assistance to help crop and livestock producers in 21 states cope with the drought. In addition, the USDA has pledged to initiate a \$14 million transfer of unobligated program funds into its emergency conservation program, which allows farmers to apply for funds to assist in moving water to livestock in need, providing emergency forage for livestock, and rehabilitating lands where the drought has been severe. The Federal Emergency Management Agency (FEMA) has, at times, explicitly excluded drought from its responsibilities. In practice, FEMA generally focuses on faster-moving disasters such as tornadoes and hurricanes.

On Aug. 2, Congress adjourned for the summer without passing a relief package for farmers and ranchers,

The U.S. relies on a patchwork approach to reducing the effect of drought with no single federal agency responsible for preventing or responding to the effects of drought.

Revenue For Many Freshwater-Based Tourist Communities Is Withering

Tourism and recreational activity is crucial to the growth and financial stability of many local governments. A healthy tourism and recreation sector can support a strong sales tax base, increase income tax, and expand employment and economic development. However, extreme weather conditions such as the year-over-year drought that certain areas are enduring has taken a toll on tourism and recreational activity.

Now that the water levels of numerous lakes have decreased significantly, freshwater recreational activities are dwindling, which means less revenue for area business owners. It doesn't stop there. Local governments are experiencing decreases in sales tax, franchise tax, and recreation fee and permit-derived revenue.

Recreational freshwater activities in Colorado and Texas dry up

More major rivers start in Colorado's Rocky Mountains than in any other U.S. state, feeding a \$155 million commercial rafting business. Rafting companies have lost half of their business due to the melt-water running dry. Beyond Colorado, the economic effect of the nation's most widespread drought in more than 50 years is trickling down to businesses that rely on anglers in Montana, boaters in Texas, and paddlewheel riverboat enthusiasts on the Mississippi.

The drought is also threatening lucrative hunting seasons, which start as early as September, in states such as South Dakota and Kansas. According to the Manitou Springs, Colo. chamber of commerce, hotel occupancy rates have also plunged.

Credit implications for recreational-based communities

For municipalities that depend on tourism and recreational revenue, Standard & Poor's focuses on the factors that may be boosting or hurting such activity. Some areas that have experienced a sustained drought period of two or more years have a higher urgency to respond to drought conditions due to the cumulative effect. From a rating perspective, we will assess the drought's overall effect on the municipalities and the local governments' responses to the problem. We believe communities with more financial liquidity will likely fare better than others. Those that depend heavily on tourism and recreation will have to look to replace lost income or cut back their services because of the drought.

The Federal Response Has Been Spotty

For years, farmers and ranchers, public land managers, scientists, economists, small business owners, small and large municipalities, counties, states, regional

which is taking its toll on those waiting for relief. With the Republicans and Democrats currently controlling the House of Representatives and the Senate, respectively, Congress failed to reach a consensus on how to handle the drought. It will not take up the drought issue again until September. Lawmakers usually create farm policy bills, which typically come up for renewal every five years, to garner bipartisan Congressional support by combining farmer subsidies for rural areas with food stamp allotments and nutrition programs for urban areas. Senators and representatives who felt such arrangements did not meet their constituents' needs voiced their dissent by not voting for the farm policy bill, leaving emergency relief measures in limbo until Congress returns.

While the federal government provides the majority of funding for drought-stricken areas, some of the burden still rests with state governments. In addition, the coordination of local, state, and federal governments has become a crucial component of managing aid disbursement to farmers, ranchers, small business owners, and individual citizens eligible for drought assistance. The Farm Service Agency (FSA), a branch of the USDA, implements farm policy through field offices based in states, counties, and territories. More than 2,346 state and county offices are the primary distributors of national FSA programs. At the local level, FSA committee members are responsible for making decisions regarding incentive, indemnity, and disaster payments for commodities and other farm disaster assistance, among other things.

Although 30 states have drought plans, most of those focus on relief rather than preparedness. In general, the states with larger populations and resources at risk tend to have more detailed state drought programs. Only five states report they have some drought funding mechanisms independent of a federal administrative or presidential declaration of drought emergency, which highlights the dependence on intergovernmental activity when dealing with the devastating effects of drought.

In addition, drought legislation, or lack thereof, affects the average consumer and global commodity prices. Corn futures traded in Chicago have surged 60% since mid-June while soybean futures have increased by 24%, prompting the United Nations to predict higher global food costs. Meanwhile, meat processor and meat agribusiness companies are facing lower profits this year because they've had to pay more for grain feed.

U.S. government figures show corn is the nation's biggest crop, valued at \$76.5 billion in 2011, followed by soybeans, valued at \$35.8 billion. The drought is not only having a significant effect on the value of these crops, but also on the allocation of this year's more limited stock.

A 2007 federal law mandates the use of 13.2 billion gallons of biofuels, such as ethanol, in 2012, increasing to 13.6 billion gallons in 2013. The law's purpose is to help reduce the nation's reliance on overseas oil. Tom Vilsack, the USDA's current secretary, has said that waiving this requirement could bring long-term harm to the investment in biofuel production without significantly keeping down food prices. Still, at least 25 senators and 156 house members have signed letters asking Lisa Jackson, the Environmental Protection Agency's administrator, to suspend or lower mandates on how much ethanol the nation must use this year and next.

How Bad Will It Get?

With little immediate relief in sight from either Congress or the weather forecast, farmers, ranchers, and businesses will continue to suffer through the drought. What remains to be seen, however, is what effect federal or local policies will have on dwindling crops and food supplies, as well as on livestock feed and commodities future prices. Although we expect the drought to have some adverse financial implications for state and local governments, primarily communities in the most severely drought-stricken areas, we don't necessarily expect an immediate change in credit quality. However, we believe that jurisdictions lacking economic depth and diversity will be the hardest hit and that a prolonged drought is likely to have a longer-lasting effect on rural communities. **CW**

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