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Low-Cost Shale Gas Gives North American Petrochemical Producers Advantages Over Europe

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Low-Cost Shale Gas Gives North American Petrochemical Producers Advantages Over Europe

The March IHS World Petrochemical Conference in Houston touched on several themes that Standard & Poor's Ratings Services believes could have important implications for the credit quality of chemical producers in North America and Europe. A key takeaway was that North American petrochemical producers will likely continue to benefit for the next several years from low-cost feedstocks derived from shale gas. However, producers in other regions, notably Europe, will probably remain at a cost disadvantage. This is consistent with our views. Chemical consulting firm IHS, the sponsor of the conference, voiced increased caution, however, about the potential for global oversupply of certain petrochemicals later this decade, when significant capacity is slated to come online.

North American producers' favorable cost positions played an important role in several of our recent ratings upgrades, as did our belief that our ratings on these companies can withstand the industry downturn we expect. And, despite the challenges that European chemical manufacturers face, we have stable outlooks on most of them. This indicates our belief that many will undertake profit improvement measures. Several also benefit from geographic diversity and a specialty chemical orientation, where other factors in addition to cost position contribute to their success. Nevertheless, rating pressure on European chemical companies could increase in coming years.

Overview

- The IHS World Petrochemical Conference underscored the advantages over Europe that cheap shale gas is giving North American petrochemical producers.
- Credit quality is likely to remain stable for most North American petrochemical companies, but potential changing industry dynamics are worth watching.
- European companies face a cost disadvantage in global markets, but most have been able to maintain credit stability through specialization and increased geographical diversity.

U.S. Shale Gas Is Fueling Large Capacity Increases

Following more than a decade without any major capacity expansions in the U.S., the availability of plentiful, low-cost natural gas liquids (NGLs) from the shale gas boom has spurred significant capacity increases. According to IHS, the U.S. petrochemical industry plans to add 40 million metric tons of new capacity in 20 key products by 2018, and IHS estimates that the U.S. could add another 45 million by 2030. The largest addition is likely to be in the ethylene chain, which could represent a 60% increase to the currently installed base by 2030. IHS reckons that investment through 2030 could total nearly \$120 billion.

Substantial though they are, these planned capacity additions in the U.S. represent only a fraction of those planned globally, with significant capacity likely to be added in the Middle East (the lowest-cost region) and Asia (where demand is growing fastest).

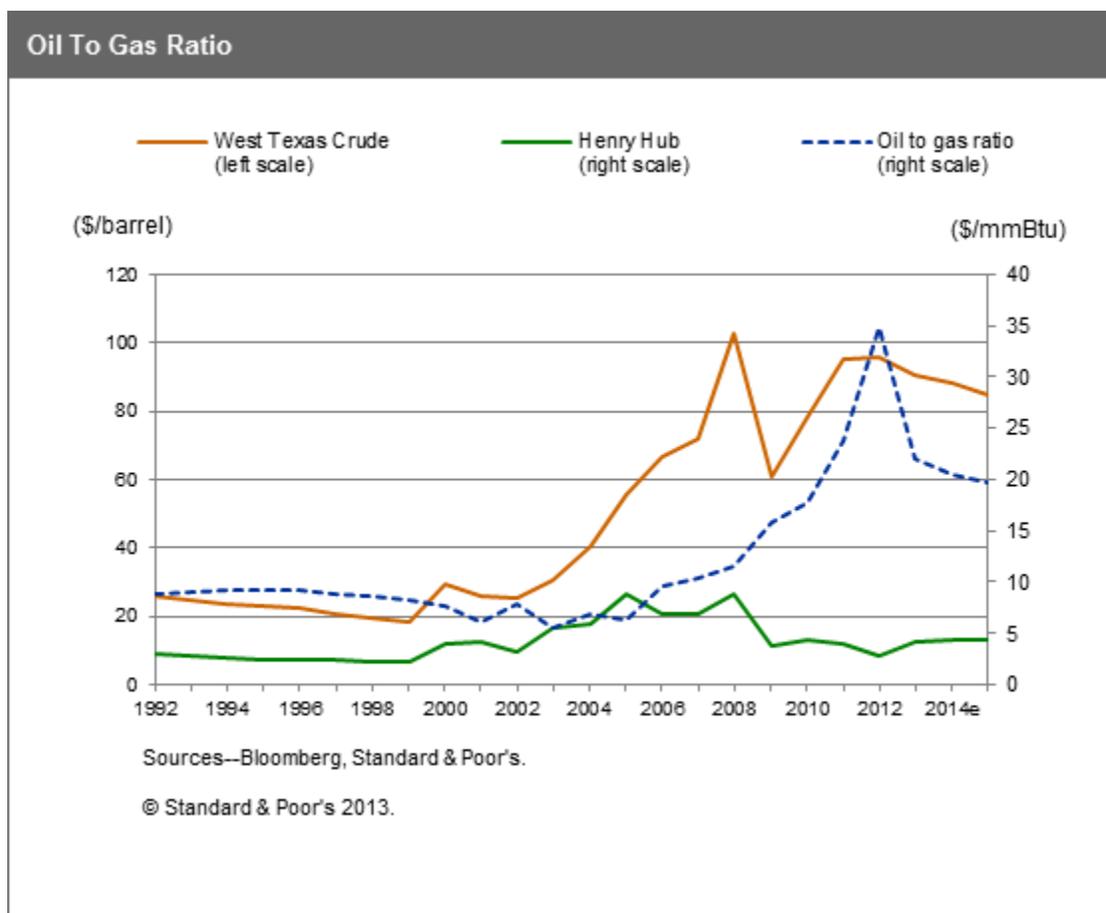
It remains to be seen whether all the announced capacity will be built. But even if, as IHS assumes, global GDP grows by 3.5% in 2013 and continues to grow at close to that pace for the next few years, with demand for petrochemicals increasing at a similar rate, global capacity growth could exceed demand growth with the addition of significant new capacity around 2017. Using ethylene--the largest petrochemical by volume--as a proxy for the industry, IHS now estimates that average operating rates will remain below 90%, with higher rates in low-cost regions and lower rates in high-cost regions. However, IHS does not expect the industry to overbuild into a deep trough.

North America Retains Cost Advantages

The shale gas boom has been a boon to the U.S. petrochemical industry by lowering input costs and, by proximity, to Canadian producers that are also able to source low-cost feedstocks. This has pushed North American production down the global cost curve, just above the Middle East and well below Europe and Asia. Natural gas-derived feedstocks are the source for most North American petrochemical production, as opposed to oil in much of the rest of the world. Energy is another important input cost in petrochemical production, and cheaper natural gas has also lowered North American production costs.

Although the oil to gas ratio may narrow somewhat, both IHS and Standard & Poor's expect it to remain above historical levels, favoring users of NGLs. In addition, IHS expects the supply of NGLs to be sufficient to support all announced petrochemical projects. It also forecasts a continued gap between U.S. and international natural gas prices, although the differential may be a bit narrower than it has been the last few years. All these factors should ensure continuation of a lower cost of production in North America compared with all other regions except the Middle East.

Chart 1



North American petrochemical manufacturers and other types of companies that benefit from low natural-gas costs (such as fertilizer producers) should enjoy prosperity during the next few years as global demand for their products increases and before they complete their capacity additions. Toward the end of this decade, when new capacity starts up, markets are apt to become more competitive, but we believe these companies should retain their favorable cost position and therefore remain profitable. However, for most companies we see credit risks potentially arising in three main areas: export capability, capital spending, and mergers and acquisitions (M&A). And the shale gas phenomenon has placed a handful of other companies at a disadvantage because they are heavy users of intermediate chemicals—such as butadiene—that were in greater supply when petrochemical producers were cracking more oil-based feedstocks.

Export capability

With the building of large new petrochemical projects in the U.S., supply additions will likely outpace domestic demand growth. Consequently, much of the new production will be destined for export from the U.S., either as chemicals or finished goods. In fact, IHS predicts that one-third to half of global production will ultimately travel between countries. This will place increasing importance on supply chain, transportation, and distribution; marketing proficiency and reach; and supportive policies governing international trade. These issues will be particularly important for companies such as chloralkali and vinyl producer Axiall Corp. The U.S. vinyl industry already relies on

overseas markets, exporting about 30% of production. But a U.S. housing comeback would help to boost domestic demand.

Nitrogen fertilizer is an important exception to this general trend of greater reliance on export markets. We believe that any increase in U.S. production would displace imports, which we believe constitute roughly 50% of the U.S. market. Several issuers we rate plan to expand their nitrogen production capacity through de-bottlenecking and brownfield expansions, and possibly through greenfield projects, but Agrium Inc.'s management estimates that it would require 12 to 14 new North American nitrogen facilities to displace all offshore nitrogen imports into the U.S.

Capital spending

World-scale petrochemical projects are typically multi-billion dollar investments and take years to complete. It would therefore be particularly risky for companies to incur significant debt to finance these projects and then complete them at around the same time, resulting in competitive pricing. For this reason, it's worth comparing the capital spending plans of some of the leading U.S. producers.

- Chevron Phillips Chemical Co. LLC repaid essentially all its book debt last year in connection with a change in its ownership. Although there is substantial debt at some of its Middle Eastern joint ventures, it is embarking on U.S. Gulf Coast petrochemical investments in good financial health and plans to finance them with internally generated cash flow or parent investment.
- LyondellBasell Industries N.V. has thus far refrained from announcing any major greenfield construction. All of its current plans call for de-bottlenecking, restarting idled facilities, and expanding operations at existing U.S. Gulf Coast sites. It should be able to accomplish this with moderate increases in capital spending and its goal of maintaining moderate leverage, and should have the additional advantage of its capacity coming onstream before its competitors complete most of their larger projects. In Europe, where LyondellBasell also has substantial operations, it is restructuring and moving increasingly to more value-added products, such as thermoplastics for automobile components.
- The Dow Chemical Co. has also announced significant U.S. petrochemical capacity additions, which we view as a shift in strategy to increased vertical integration. Dow's credit metrics are currently somewhat stretched for the ratings, with leverage still elevated following its 2009 acquisition of Rohm and Haas. However, its U.S. Gulf Coast investments are occurring in the context of significant corporate restructuring, a significant reduction in overall capital spending in 2013, potential divestitures, and the expected receipt of about \$2.5 billion in K-Dow arbitration proceeds.
- Methanex Corp. is in the process of relocating a plant in Chile to Geismar, La., to take advantage of low-cost shale gas. The company has entered into a 10-year supply agreement with Chesapeake Energy Corp. to procure all natural gas for this facility. The relocation should result in improved margins and earnings stability because natural gas supply constraints in Chile have in recent years resulted in underutilization of Methanex's assets there. The company is evaluating the relocation of a second Chilean plant to Louisiana and expects to decide during the first half of 2013 whether to proceed. The company will likely fund these projects through balance sheet cash, internally generated cash flows, and credit facility draws.
- Westlake Chemical Corp. is expanding its chloralkali and ethylene capacity but should be able to finance these expansions with cash balances and ongoing cash flow generation.
- CF Industries Inc. has board authorization for \$3.8 billion of capital investments through 2016, which we think it can accomplish at the current rating given its large cash balances, prospects for additional free cash generation, and financial profile strength.
- NOVA Chemicals Corp. has entered into long-term agreements to secure ethane from shale gas basins to supply to

its Joffre and Corruna facilities. The company is in the process of converting its Corruna facility to use lighter feedstock and in the latter half of 2013 expects to begin consuming ethane--the primary feedstock following the conversion--sourced from the Marcellus Shale Basin. NOVA plans to add significant polyethylene capacity through large-scale expansions that are likely to be partly debt-funded and that could weigh on credit metrics in the near term.

- PetroLogistics LP, a company that operates a single on-purpose propylene facility in Texas and is structured as a variable rate master limited partnership, had an early-mover advantage with the start-up of its propane dehydrogenation unit in 2011. We do not factor into our base-case assumptions for PetroLogistics any sizable capacity expansion projects.

Mergers and acquisitions

We think most of the major North American petrochemical producers are likely to grow organically rather than through major acquisitions. But there has been some M&A activity in the sector, and it could attract additional investment from overseas. In early 2012, Westlake Chemical Corp. made an unsolicited offer for Georgia Gulf Corp. However, Georgia Gulf rejected that offer and subsequently merged with PPG Industries Inc.'s commodity chemicals segment to form Axiall. We raised the ratings on Axiall to reflect its improved business risk profile after the merger, which included a significant equity component. We factor into all our ratings management's attitudes toward M&A and leverage, but the possibility of transformative transactions and the related credit impact are impossible to predict.

North American Producers: Low Costs And Changing Dynamics Shape Credit Quality

The cost advantage that U.S. and Canadian chemical producers and others with major operations in North America have gained from shale gas has played a major role in recent upgrades (see Table 1).

Table 1

Companies Benefiting From Low-Cost U.S. Natural Gas		
Company	Corporate Credit Rating*	Date Upgraded
LyondellBasell Industries N.V.	BBB/Stable/--	March 27, 2013
PetroLogistics LP**	B/Stable/--	March 15, 2013
Axiall Corp.	BB/Stable/--	Jan. 15, 2013
Chevron Phillips Chemical Co. LLC	BBB+/Stable/A-2	Aug. 24, 2012
NOVA Chemicals Corp.	BB+/Stable/--	Aug. 24, 2012
CF Industries Inc.	BBB-/Stable/--	July 2, 2012
Westlake Chemical Corp.	BBB-/Stable/--	Nov. 19, 2010

*As of April 16, 2013. **Our rating on PetroLogistics is a new rating. The former rating was on its subsidiary, PL Propylene LLC.

The U.S. industry's move to lighter cracking, which has resulted in certain key raw materials becoming scarcer, has worked to the disadvantage of some companies we rate. To date, those listed in Table 2 have been able to manage this risk within the context of the current ratings, and the stable outlooks on all of them indicate that we expect them to continue to be able to do so.

Table 2

Companies Disadvantaged By The U.S. Move To Lighter Cracking

Company	Corporate Credit Rating*
INVISTA B.V.	BBB-/Stable/--
Kraton Performance Polymers Inc.	BB-/Stable/--
Polymer Group Inc.	B/Stable/--

*As of April 16, 2013.

Factors that could change industry dynamics and credit quality

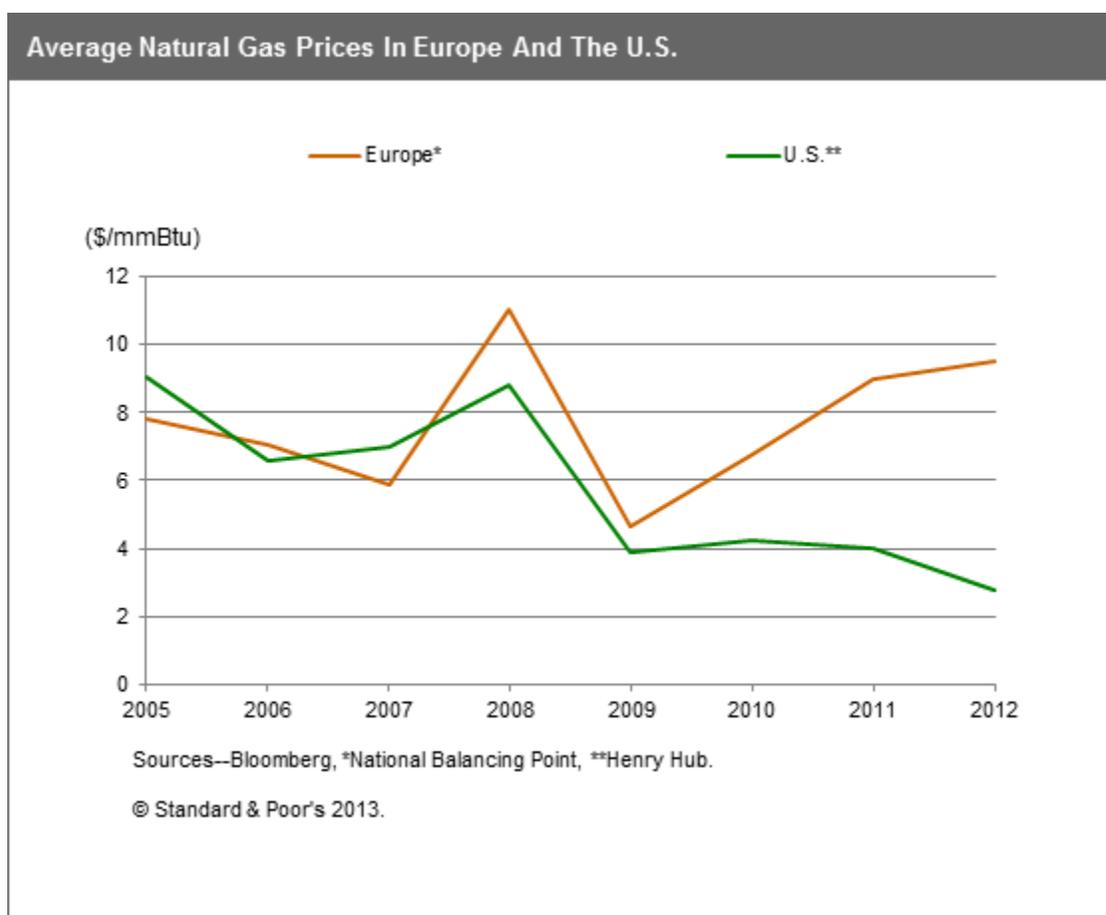
We intend to keep an eye on several factors that we think are unlikely to, but nevertheless could, undermine North American producers' cost advantage during the next few years:

- Environmental concerns that limit shale gas development or production.
- Increases in NGL exports that are significant enough to lead to meaningful price increases. IHS expects the U.S. to become a net exporter of energy, notably methane, ethane, and (to a lesser extent) liquefied petroleum gas within the next four to five years.
- The development of shale gas reserves in other regions. This may occur over a longer period of time, but the U.S. currently enjoys numerous advantages that have supported the rapid development of this industry that are not necessarily present to the same degree in other regions: private ownership of mineral rights, the presence of independent drillers, a well-developed infrastructure (including pipelines) and supply chain, broad access to risk capital, and supportive state and local regulations.

European Companies: Specialization And Geographic Diversity Counter Higher Costs

The outlook for European producers of basic chemicals and plastics for the next five years is challenging. This is because of not just the region's weak macroeconomic prospects (with negative GDP growth of 0.5% forecast for 2013) but also the limited access to low-price gas feedstock, in contrast to the U.S., Russia, and the Middle East. While the U.S. shale gas revolution has structurally lowered U.S. gas prices, we believe higher raw material and, secondarily, electricity costs will increasingly penalize European commodity chemical producers (see Chart 2). IHS believes, for example, that European operating rates, currently averaging about 80%, could decline further to about 75% as Europe moves during the next several years from a balanced position to becoming a net importer of petrochemicals.

Chart 2



Large capacity additions by U.S. chemical competitors make the threat to European chemical producers real. In our view, they will need to respond to this change in industry dynamics with a range of decisive measures aimed at improving production efficiency and enhancing their cost positions. Such measures could include:

- Importing low-priced ethane from the U.S.: Ineos Group Holdings S.A. (Ineos) has embarked on a project to exploit shale gas opportunities by exporting U.S. ethane to one of its European crackers by 2015.
- Closure of the highest-cost plants, and fixed-costs reductions: In January 2013, PVC manufacturer Kerling PLC (Kerling) announced some wide-ranging production rationalization measures, including certain site closures, as part of its internal asset review in response to the depressed demand for PVC in Europe.
- Ultimately reversing the trend of high priced gas: Estimates of shale gas in Europe are significant (16 tcm according to EU Commission studies compared with an estimated maximum of 47 tcm for the U.S.). However, we believe it will take considerable time and challenges to remove important barriers to develop such shale gas resources in Europe. For example, France currently bans hydraulic fracturing (the technique for releasing gas from rock beds by crushing the rock through injecting water and chemicals under high pressure) because of environmental concerns.

Needless to say, cost position is the first rating driver for commodity players, with higher cost producers clearly most exposed. For example, France-based PVC producer Kem One (unrated) recently filed for bankruptcy.

Despite these uncertainties, at last count, we had stable outlooks for 19 out of 24 chemical companies we rate in

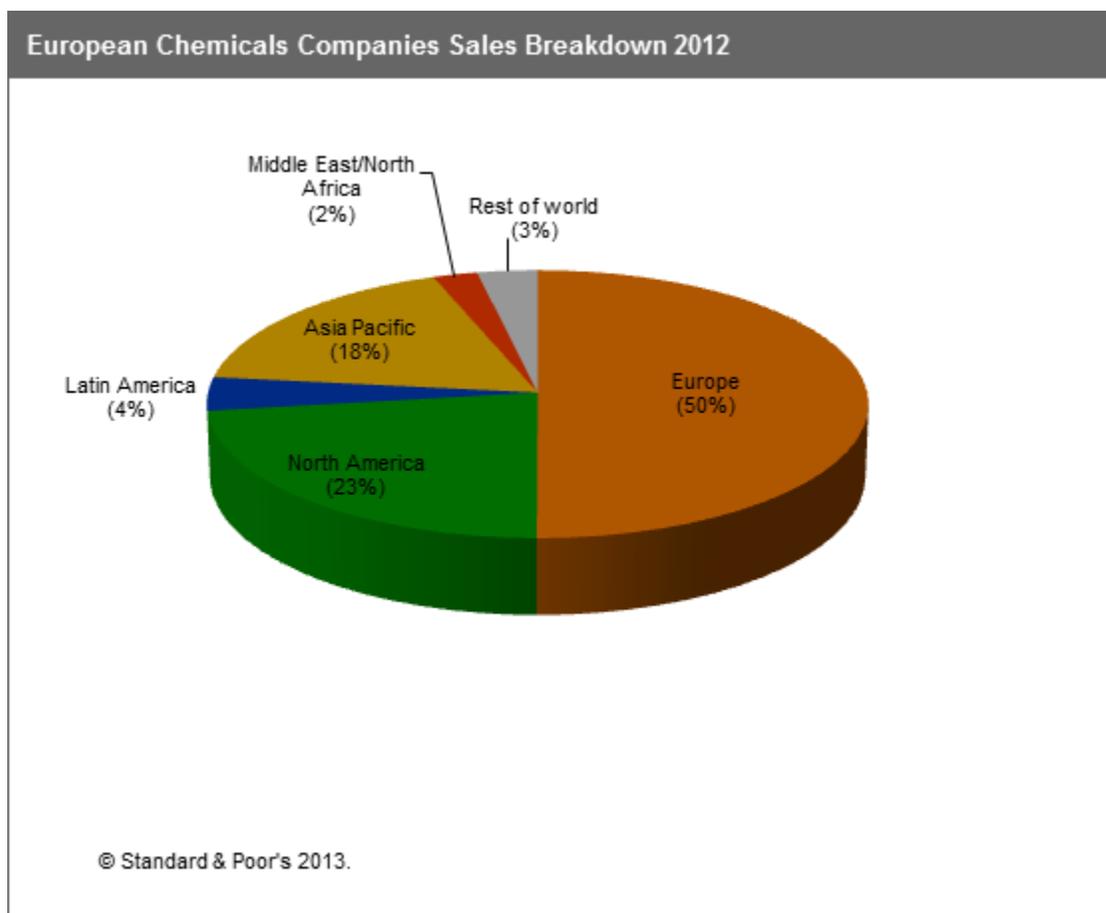
Europe, indicating that we anticipate their credit quality to remain broadly unchanged in the near term. The negative outlooks on Solvay S.A. and Kerling, however, are largely a result of the weak European environment. By contrast, the positive outlooks on Ineos and SPCM S.A. principally derive from the substantial share of profits they generate in the U.S.

Although additional rating pressures may arise in the coming years, the factors behind the large share of stable outlooks are:

- Significant financial leeway that we previously factored into the ratings resulting from the strong recovery from 2010 through the first half of 2012;
- The high share of specialty chemical players we rate in Europe;
- A more favorable euro exchange rate, which will somewhat mitigate the tough macroeconomic conditions in Europe; and
- Most of all, increasing geographical diversification, notably into the U.S. and Asian markets.

One indication of greater geographical diversification is the fact that the share of sales within Europe has declined to 50% of 2012 sales for the European issuers we rate in this sector (see Chart 3). We believe that European producers will continue to diversify away from Europe and into Asia, where growth prospects and structural shortages of certain products should deliver higher investment returns. In addition to the expansion of bigger players into emerging markets, smaller, niche players are expanding abroad: OXEA S.a.r.l., for instance, invested in a new oxo derivatives unit in China, while Perstorp is currently building a neopentylglycol plant in China.

Chart 3



Credit Stability Is Likely To Prevail In Both Regions

Low-cost natural gas should be a benefit for North American producers for the next several years. Despite the potential for competitive market conditions toward the end of this decade, when we expect a large amount of new capacity to come online, we think that the credit quality of most companies should remain stable given, on the whole, appropriate leverage for the ratings. Likewise, we expect the ratings on most European producers to remain stable despite their general cost disadvantage. These companies should benefit from balance sheets that are mostly in good shape, the greater pricing power many gain from having a specialty rather than commodity orientation, and increasing geographic diversification.

Related Research And Criteria

- Key Credit Factors: Criteria For Rating Companies In The Global Commodity Chemicals Industry, Sept. 19, 2012
- Industry Report Card: Modest Economic Growth Should Support Stable Credit Quality For North American Chemical Companies, April 17, 2013
- U.S. Economic Forecast: House Cleaning, March 20, 2013

- Economic Research: Entrenched In Recession, Europe Seeks A Balance Between Deleveraging And Growth, March 26, 2013

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