

© Illustration by Scott Bakal

Chemicals and capital markets: Still going strong

The chemical industry continues to ride high in capital markets. Our latest capital-markets update suggests that a number of the key value-driving trends remain in place.

Bing Cao, Obi Ezekoye, and Michael Glaschke

The continuing global economic expansion—albeit tepid—has been helping much of the chemical industry to report favorable sales and earnings over the past year. Major changes in the price of crude oil have historically had an influence on the profitability of segments of the chemical industry, but events are still unfolding around the fall in oil prices since last summer.

How have these developments translated into capital-markets performance? This article first presents the results of our latest analysis describing different aspects of chemicals' continuing strong performance.

Second, it looks at drivers of this performance and what they mean for the industry's prospects.

The best performer in the value chain

Our analysis shows that the chemical sector is continuing to do well, with its performance on total return to shareholders (TRS) among the highest of any sector (Exhibit 1).¹ Chemicals are also the TRS winner in their value chain, based on performance since 2000: the chemical sector is registering higher TRS performance than most of the upstream industries that provide its feedstocks, such as oil

and gas and minerals, and the downstream industries that consume chemicals such as automotive, consumer goods, and pharmaceuticals (Exhibit 2).

It is still too early to see the full impact of lower oil prices on the chemical sector's TRS performance. Our analysis shows a small bounce over the past six months in the TRS performance of the commodity-chemical companies we analyzed, after a sharp fall in the second half of 2014. The fall reflected more bearish investor expectations because of a narrowing of the naphtha-ethane price spread as oil prices fell during that period. There are two factors

underlying the recent bounce in TRS performance. First, it appears that some producers of oil-based commodity chemicals have been able to maintain their selling prices in select end markets, which has expanded their margins. Second, the significant uptick in crude-oil prices this spring—as of late June, they were up around 30 percent from January 2015 lows—has muted the expected negative impact of the narrower naphtha-ethane spread on the margins of many petrochemical players using ethane feedstock. (Our commodity sample excludes the chemical subsidiaries of oil companies, the largest group of petrochemical

Exhibit 1 The chemical industry has outperformed the world equity market.

Total return to shareholders (TRS),
\$, indexed, 100 = Dec 31, 2000



TRS,¹
compound annual growth rate, %



¹Figures have been calculated using \$.
Source: Datastream

companies globally, since they are not publicly traded. Their reported results, however, suggest they have also felt the impact of these chemical-market dynamics.)

Specialties have led the pack in the past three years

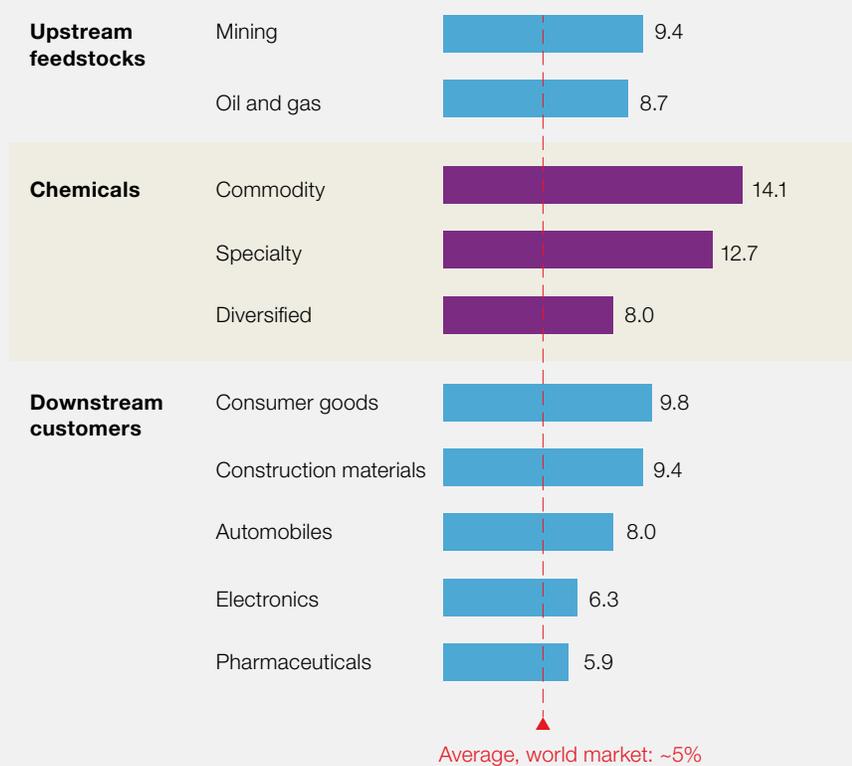
Commodities and specialties have jockeyed for leadership in TRS performance over the past

15 years, depending on the period analyzed.

In the three years since our last article that shared a capital-markets perspective,² specialty chemicals have been the best-performing chemical segment in TRS performance (Exhibit 3). This is largely the result of strong improvements in return on invested capital (ROIC). For most of the period since 2000, however, commodities have been slightly ahead. Looking back to the period in the immediate aftermath of the financial crisis starting at

Exhibit 2 The chemical sector has the strongest TRS performance in its value chain.

Total return to shareholders (TRS), compound annual growth rate, Dec 2000–Mar 2015, %



Source: Datastream; McKinsey analysis

Exhibit 3 Over the long run, specialties and commodities show similar TRS performance.

Total return to shareholders (TRS),
\$, indexed, 100 = Dec 31, 2000



TRS,¹
compound annual growth rate, %

	Dec 2000– Mar 2015	Dec 2008– Mar 2015	Dec 2011– Mar 2015
Commodities ³	14	22	10
Specialties	13	20	23
All chemicals	11	19	16
Diversified	8	18	13
Brent	6	6	-20

¹Figures have been calculated using \$.

²Brent crude oil.

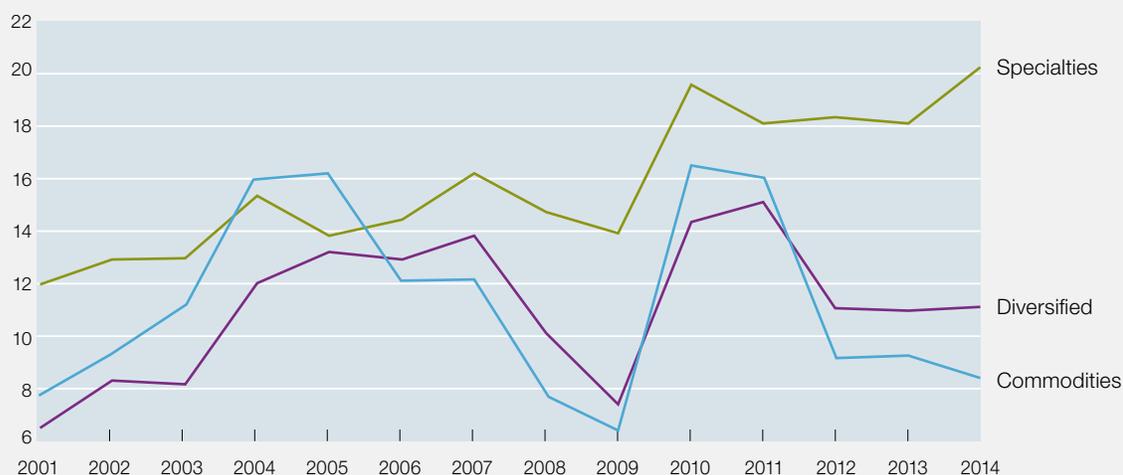
³Excluding fertilizers.

Source: Datastream; McKinsey analysis

Despite the conventional wisdom that specialty chemicals perform better than commodity chemicals, the longer-term TRS numbers suggest that investors have been similarly rewarded in both sectors.

Exhibit 4 The higher valuation of specialty chemicals has been driven by continuing improvement in ROIC performance.

Pretax return on invested capital (ROIC), including goodwill, %¹



¹Data are median of 100 selected companies from the chemical industry, excluding fertilizer companies and SABIC.

Source: Datastream

the end of 2008, commodities were the leader, two percentage points ahead of specialties, with both specialties and commodities slightly ahead of diversified companies. Assessing the 2000 to 2015 period, commodity- and specialty-chemical companies have demonstrated a similar performance, with commodities just one percentage point in front; again, both were ahead of diversified chemical companies.

The similar longer-term TRS performance that specialties and commodities sectors have registered suggests that investors have been rewarded in both sectors, contrary to the long-standing conventional wisdom that specialties are more attractive. Nevertheless, our analysis shows that there are differences in the drivers of each

sector's performance. Specialty-chemical companies' continuing ability to improve ROIC has spurred improvement in these companies' valuation over the past three years. Expectations associated with the commodity-chemical cycle have traditionally driven valuations in the sector, but they have become more muted over the past three years. At the same time, the ROIC of both commodity and diversified companies has slipped over the period, creating a slight drag on performance (Exhibit 4).

Western incumbents outpaced Asian companies in TRS performance

Looking at regional developments, American and European chemical companies have outpaced their Asian rivals over the past three years. This

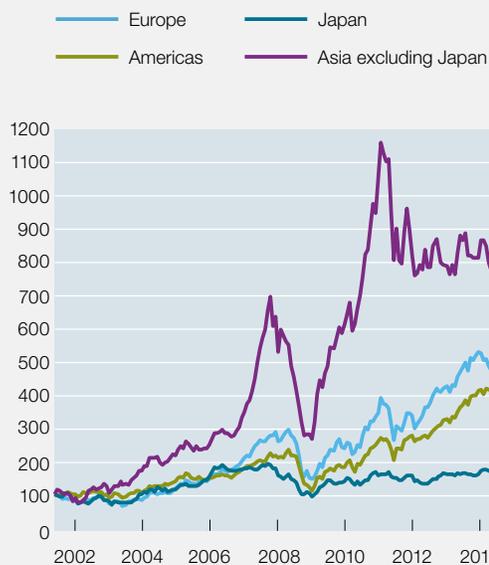
marks an accentuation of a trend dating to 2009: the Americas have registered the best performance, just ahead of Asia (excluding Japan) and Europe. However, going back 15 years, Asia has outperformed other regions overall (Exhibit 5).

There are a number of possible explanations for this recent trend. One is that Asian TRS performance is showing the effects of overbuilding capacity in the region during the first decade

of the century, leading to lower profitability. A second explanation is that the large European and US players have profited from the economic recovery since 2009. In addition, a number of companies have also benefited from the lower prices of shale gas-based feedstock in North America; many European companies also have extensive North American operations and so are profiting from the advantaged feedstock as well.

Exhibit 5 Asian chemical companies¹ have historically performed better than those in other geographies, but they've stalled since 2011.

Total return to shareholders (TRS),
\$, indexed, 100 = Dec 31, 2000



TRS,²
compound annual growth rate, %



¹Asian chemical companies excluding Japan.

²Figures have been calculated using \$.

³Comparison of chemical equities' performance against their regional equity market.

Source: Datastream

Value creation and its drivers: Latest insights

The chemical industry has been having a great run, but how long can it extend this superior performance? As chemical-company leaders know all too well, capital markets do not reward players for staying still.

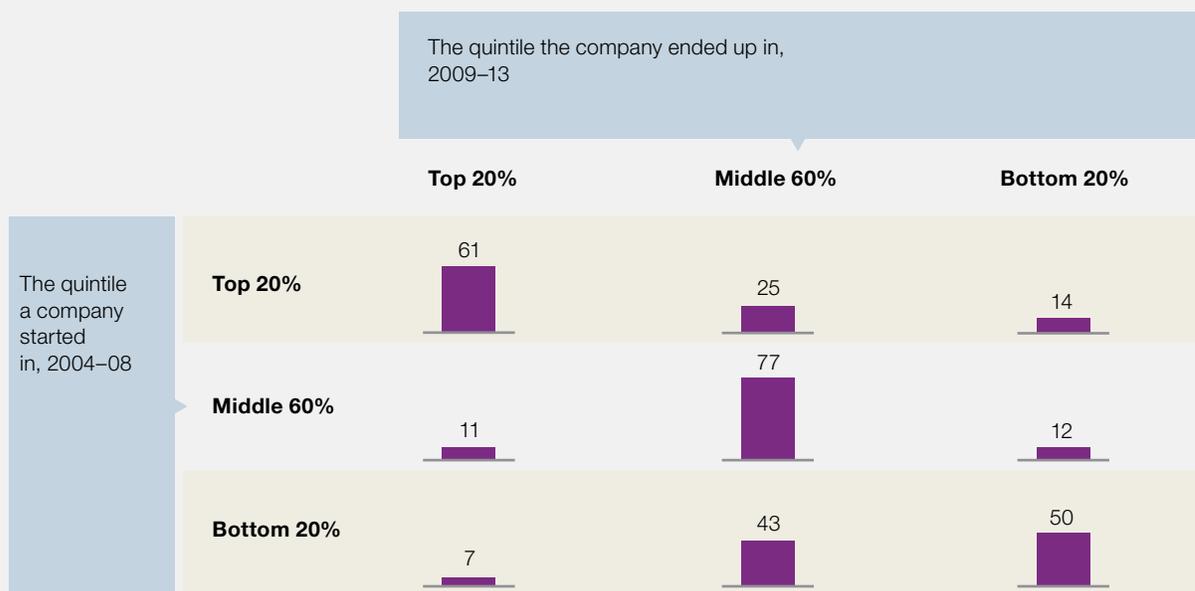
A variety of factors have contributed to the superior shareholder performance. For specialty-chemical players, the strong returns may indicate how company valuations reflect technology innovation, intellectual property-based entry barriers, and privileged customer access. On the commodity-chemical side,

many companies have captured the benefits of advantaged feedstocks by surmounting regulatory hurdles and successfully executing capital-spending initiatives.

What can companies do to sustain ROIC at these high levels—or even improve it? ROIC is determined by a combination of factors that company management can control, as well as ones that it cannot. While both specialty- and commodity-chemical makers can control their cost position, operations excellence, working capital, and M&A, specialty-chemical companies have

Exhibit 6 Turnover is dynamic, with a lot of upward and downward mobility among chemical companies.

Average economic profit,¹ % of companies, n = 140



¹Weighted average cost of capital: 7% for Japanese companies, 9% for others.

Source: McKinsey analysis

more control over end-market pricing. Commodity makers are subject to market-set pricing almost by definition. As we see in Exhibit 4, it's no coincidence that specialty-chemical companies are leaders in ROIC performance, given that their businesses are built around unique competitive advantages based on their product or service offerings and their selection of end markets—as well as, of course, their choice of markets with favorable dynamics when possible. In contrast, commodity players are more affected by external factors that are out of their control, such as oil prices, the naphtha-ethane spread, the octane slope, coproduct demand, and underlying market demand.

The play of these different forces underpins one of the enduring characteristics of the chemical industry: the dynamic turnover of leaders and laggards within the sector (Exhibit 6). Our latest analysis of how the positions of companies changed regarding economic-profit performance³ between two periods—2004 to 2008 and 2009 to 2013—shows that nearly 40 percent of the top quintile dropped out of it, and 14 percent ended up in the bottom quintile. Meanwhile, 50 percent of the bottom quintile moved up, with 7 percent making it all the way to the top quintile.

The message for leading companies is use it or lose it. Companies in the elite have a privileged ability to mobilize capital. In addition, they should make sure they know the formula that got them there and vigilantly watch for signs of change, rather than resting on their laurels. The pattern of movement that our analysis shows suggests the odds are almost even that top-quintile enterprises will slide down into the middle group or lower. But “using it” well isn't easy: our analysis shows for example that a number of the companies that slipped from the top to the middle or bottom of the pack were active with acquisitions, which may not have worked out well. Companies in the middle are typically ones that

lack a sustainable competitive advantage and face a constant account-by-account battle to hold their position as they ride industry trends.

For companies at the bottom, the challenge is often that their ROIC performance is weak. Companies unable to cover their cost of capital are in the position that any investment to try to grow will be the equivalent of throwing good money after bad; their first task is to improve ROIC to the point that they earn the right to grow. External circumstances can also help: the lift from advantaged shale gas-based feedstock has been a major success factor.

These findings pose important questions for chemical-company leaders. How can strong performers maintain their advantage to stay winners, and how can laggards move up? Looking at the challenge with regard to portfolio, how can focused companies continue to improve performance—and, by extension, where do executives need to look for the next profitable segment to grow? How can companies with diversified portfolios use this characteristic to help them address short-term volatility and stabilize overall performance? What is the right mix of specialty and commodity businesses? How can a company create sustainable competitive advantage in each?

The question of whether greater focus in a company's portfolio is a key to success remains a hot topic across the industry, with focus-inspired portfolio reshaping continuing to prompt considerable M&A action. Clearly there are examples of TRS and ROIC leader and laggard performance in both focused and less focused categories, signaling that there are no easy answers for senior-management teams trying to position their companies. To explore the issue further, we compared a group of companies that had more than 80 percent of sales in two businesses, constituting a focused group, with another

that had less than 50 percent of sales in two businesses, representing a less focused group. In our analysis,⁴ focused companies are better represented in the group with the highest ROIC performance than those with less focus (Exhibit 7).

There are a number of possible reasons for this. First, a focused portfolio can make possible a greater degree of management focus, while a less focused portfolio will require leaders to try to understand and manage very different types of businesses.

Second, companies with diversified portfolios—represented by our less focused cohort—can suffer from diseconomies of scale and costly cross-subsidization of businesses.

However, diversified portfolios can also perform strongly if leaders employ good management practices to enhance ROIC performance. While Exhibit 7 shows focused companies with a stronger representation at the higher end of the ROIC range, it also includes examples of strong ROIC

Exhibit 7 In the group of chemical companies with higher ROIC performance, focused companies are more represented.

Distribution of return on invested capital (ROIC) with goodwill,
% of companies in each range¹



¹Sample excludes fertilizer companies and SABIC. Focused companies are companies with more than 80% of sales in 2 businesses; less focused companies are companies with less than 50% of sales in 2 businesses. Figures may not sum to 100%, because of rounding.

Source: McKinsey analysis

Exhibit 8 The divergence in TRS performance between focused and less focused players has slowed since 2011.

Total return to shareholders (TRS),
\$, indexed, 100 = Dec 31, 2000



TRS,¹
compound annual growth rate, %

	Dec 2000– Mar 2015	Dec 2011– Mar 2015
Focused	13.4	16.3
Less focused	7.9	12.8

¹Market value-weighted TRS (reweighted monthly); sample excludes fertilizer companies and SABIC. Focused companies are companies with more than 80% of sales in 2 businesses; less focused companies are companies with less than 50% of sales in 2 businesses.

Source: Datastream

performance among less focused companies. Our analysis indicates that focused companies had higher TRS than less focused companies from 2001 to 2011, but over the more recent three-year period that we analyzed, the performance of the two groups has been closer (Exhibit 8).



Where next for the chemical industry? Even with the rebound from lows early in the year, oil prices are more than 40 percent under what they were a year ago. The lower prices could bolster GDP growth

and with it demand for chemicals. But the oil-price outlook is of course volatile, and so by extension are its effects on the competitive positions and profitability of chemical players in different geographies. On the M&A side, the high level of valuations of publicly held chemical companies could dampen deal activity, but it still represents an attractive environment for more IPOs and spinoffs. Looking at longer-term trends, the rise of emerging market-based producers in the specialties and commodities sectors will continue to reshape the industry. Amidst these uncertainties, there's a clear case to be made that chemical-company

priorities should continue to include the ROIC performance improvements that have already enhanced the industry's position in capital markets. ■

The authors wish to thank Anuj Gupta, Ashaya Jain, and Torsten Teichmann for their contributions to this article.

Bing Cao is a consultant in McKinsey's New York office, **Obi Ezekoye** is an associate principal in the Minneapolis office, and **Michael Glaschke** is a principal in the Munich office.

Copyright © 2015 McKinsey & Company.
All rights reserved.

¹ Our capital-markets analysis is based on our proprietary database of 140 chemical companies globally, with a combined market capitalization of \$1.5 trillion and revenues of over \$900 billion, covering all chemical subsectors. It does not include the chemical subsidiaries of oil and gas companies, or privately held chemical companies.

² Florian Budde, Christoph Schiller, and Christoph Schmitz, "Squaring the circle: Growth and value creation," *McKinsey on Chemicals*, Spring 2012, Number 4.

³ Economic profit is defined as operating profit net of opportunity cost of capital.

⁴ Our research compared the performance of a group of companies with more than 80 percent of sales in two businesses, which we used to represent focused companies, with a group of companies with less than 50 percent of sales in two businesses, constituting a less focused group. A database of approximately 120 global chemical companies was analyzed.