

***Chemical compounds***  
Second-quarter 2012 global  
chemicals mergers and  
acquisitions analysis





**Antoine Westerman**

Welcome to the latest edition of *Chemical compounds*, PwC's analysis of mergers and acquisitions in the global chemicals industry. In this report, you'll find an overview of M&A in the sector during the second quarter of 2012, as well as potential expectations for deal activity in the near future.

PwC analysts are monitoring several trends expected to affect the values and locations of deals in the chemicals sector:

- Deal volume improved slightly during the second quarter. Deal value, however, declined, driven largely by a decrease in mega-deals. Additionally, the global economy continued to slow, particularly in the Eurozone and other advanced economies. Emerging markets, including China and India, slowed as well.
- EBITDA multiples, as measured by median transaction value to EBITDA, improved during the second quarter, driven by healthcare-related deals.
- Asia & Oceania drove local deal value and volume during the first half of the year, and most of these deals were China-based.
- The outlook for the near term remains unpredictable, given the economic uncertainty exhibited during the second quarter. Europe remains a potential concern, as growth in the region's chemicals output in 2012 may be weaker than expected due to a slowing economy and inventory trimming. On the plus side, interest rates remain low, and companies have strong balance sheets, particularly cash.

We're pleased to present the second-quarter 2012 edition of *Chemical compounds* as a part of our ongoing commitment to provide a better understanding of M&A trends and prospects in the industry.



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## ***Perspective:***

# Thoughts on deal activity in the second quarter of 2012

The second quarter saw some improvement in deal volume; however, deal value declined compared with the first quarter. This decline in value was due primarily to a decrease in mega-deals, which fell almost two-thirds in value. Also, the outlook for the global economy has continued to slow, particularly in the advanced economies such as the Eurozone. The emerging markets are seeing slower growth as well. For example, China's GDP growth rate declined to 7.6% in the second quarter, the slowest pace in three years.

Over the past year, liquidity has remained strong. We have seen an increase in cash balances while debt-to-equity levels have declined. Normally, this bodes well for deals because it indicates that potential acquirers are becoming better capitalized over the long term. Although deals are being negotiated, they are, on average, smaller than we have seen recently.

Despite the decrease in average deal size, EBITDA multiples, as measured by median transaction value to EBITDA, increased this quarter. Healthcare-related deals such as Koninklijke DSM/Kensley Nash and Air Liquide/LVL Medical Group helped contribute to the higher multiple. Additionally, we are seeing that, despite the current deal environment, buyers may be seeing value in their acquisitions, particularly those that allow them to achieve economies of scale, realize synergies, or gain control over downstream products.

On a regional basis, Asia & Oceania continued to drive local deal value and volume in the first half, with 24 deals valued at \$7.4 billion. A large proportion of these deals was China-related (16 deals). This strong showing was aided by the largest mega-deal, a local-market Chinese transaction valued at \$2.8 billion, in which Yunnan Yuntianhua acquired Yunnan Yuntianhua International Chemical, making it the largest phosphorous-based fertilizer manufacturer in Asia.

Given the uncertainty in the economy this quarter, the outlook for the near term remains unpredictable. According to the European Chemical Industry Council, growth in chemicals output in 2012 will be weaker than expected, driven by a slowing economy and inventory trimming. However, there are some positives: interest rates remain low, and companies have strong balance sheets, particularly cash.

If M&A totals continue at this pace for the remainder of 2012, we could see a year-over-year decline of as much as 45% in deal value. Given this scenario, we may see the lowest annual deal value since 2009. This decline may not be surprising, given the slowing of the Chinese economy and the double-dip recession in the United Kingdom and parts of the Eurozone.

# Commentary

## Deal value declines in the wake of economic uncertainty

For the second quarter, the volume of deals increased; however, value declined, falling more than 13% compared with the first quarter. This decline in value is due in part to fewer mega-deals this quarter. The two mega-deals, valued at \$3.91 billion, comprised only a third of this quarter's value. This compares with the first quarter, in which six mega-deals were responsible for more than 80% of value. Despite solid liquidity positions for many producers, factors such as volatile energy prices may have created a challenging deal environment—particularly for large investors—and an uncertain economic environment—particularly in the Eurozone.

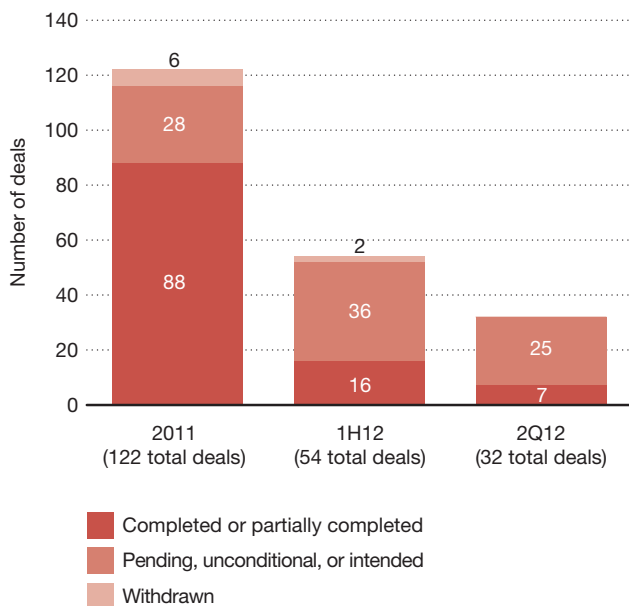
### Quarterly chemicals deal activity

Measured by number and value of deals worth \$50 million or more

	2009		2010				2011				2012	
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Number of deals	25	29	24	31	30	33	36	30	27	29	22	32
Total deal value (\$ bil)	8.6	8.5	27.4	16.3	50.8	24.8	41.2	14.6	26.2	8.0	13.5	11.8
Average deal value (\$ bil)	0.3	0.3	1.1	0.5	1.7	0.8	1.1	0.5	1.0	0.3	0.6	0.4

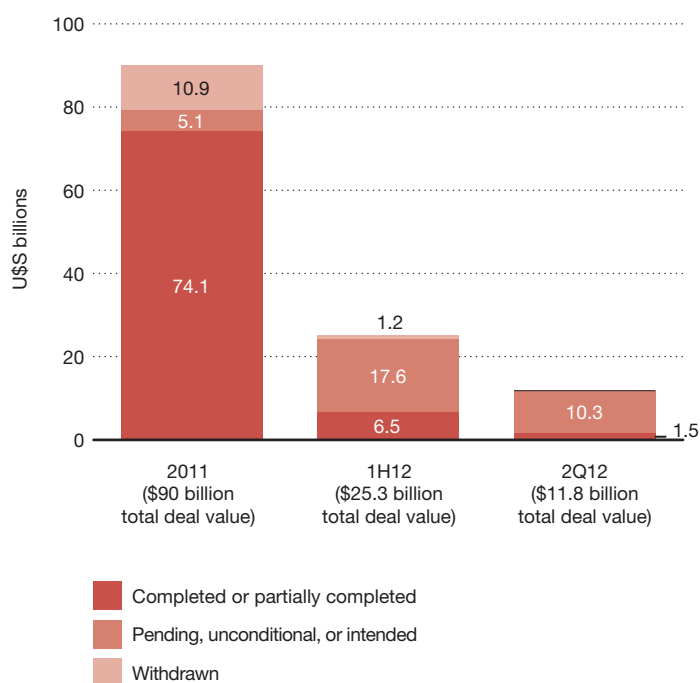
### Deal activity by number of deals

Measured by number of deals worth \$50 million or more

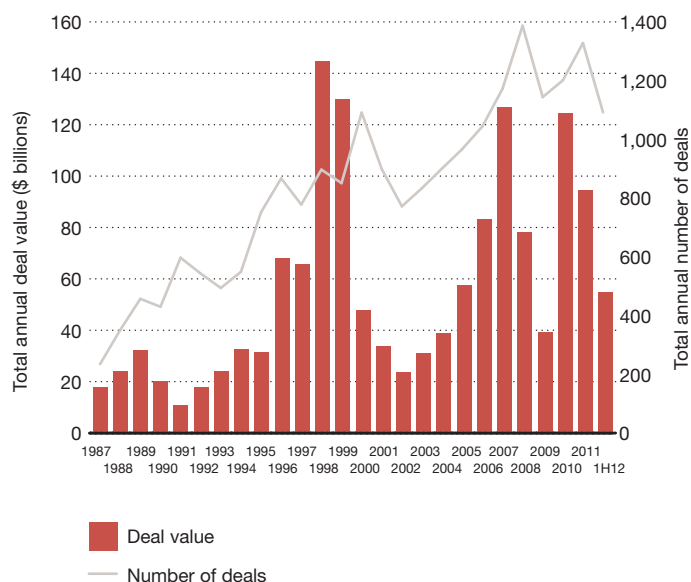


### Deal activity by total deal value

Measured by value of deals worth \$50 million or more



## Historical transaction value and volume (1987–2012 annualized)

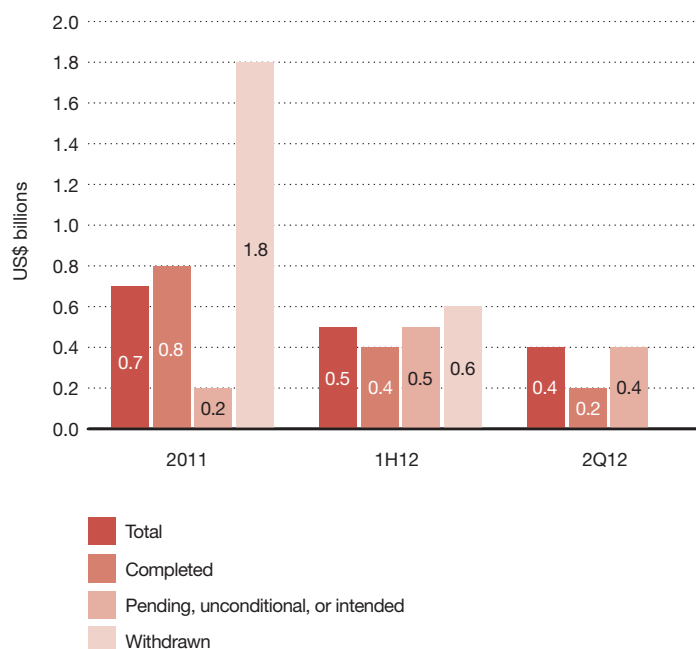


## Strong EBITDA multiple growth despite low deal value

Similar to the decrease in total deal value in the second quarter, the decline in average deal value reflects the announcement of only two mega-deals. Despite the decrease in average deal size, EBITDA multiples increased this quarter. One driver of this higher multiple was two healthcare-related deals, Koninklijke DSM/Kenney Nash and Air Liquide/LVL Medical Group, both of which were looking to achieve economies of scope and/or economies of scale. Two acquisitions in the second quarter were by financial investors, one of which was the approximately \$300 million purchase of a majority (50.7%) ownership of Zakłady Azotowe Pulawy SA, a Poland-based manufacturer and wholesaler of chemicals and fertilizers. Additionally, we are seeing that buyers may be seeing value in their acquisitions—particularly those that allow them to achieve economies of scale or gain control over downstream products.

## Deal activity by average deal value

Measured by value of announced deals worth \$50 million or more



## Mega-deal activity sees decline

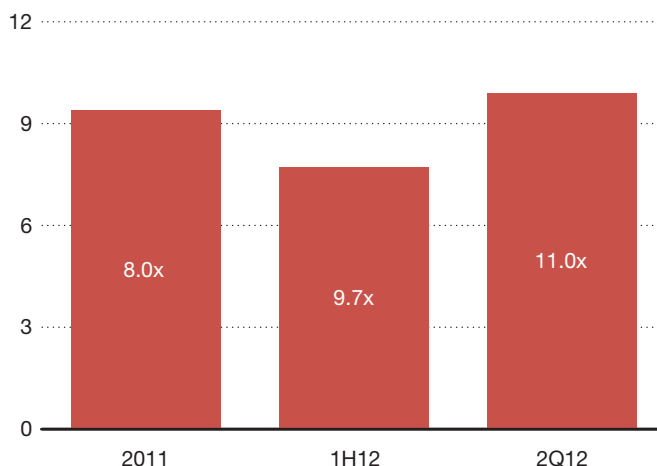
As mentioned previously, mega-deal activity declined this quarter, driving only approximately one-third of deal value. Ten of 18 mega-deals in 2011 involved a European entity, but only 1 of 8 mega deals in the first half of 2012 involved a European entity. It appears that the economic downturn in that region seems to have stalled large deal activity in the subsector.

In June, Yunnan Yuntianhua Co. Ltd. announced its plan to acquire the entire share capital in Yunnan Yuntianhua International Chemical Co. Ltd., a Kunming-based manufacturer and wholesaler of chemicals, from Chinese state-owned Yuntianhua Group Co. Ltd. for \$2.8 billion. After completing this and several smaller acquisitions, Yunnan Yuntianhua Co. Ltd. will be the largest phosphorous compound fertilizer producer in Asia and the second-largest producer globally.

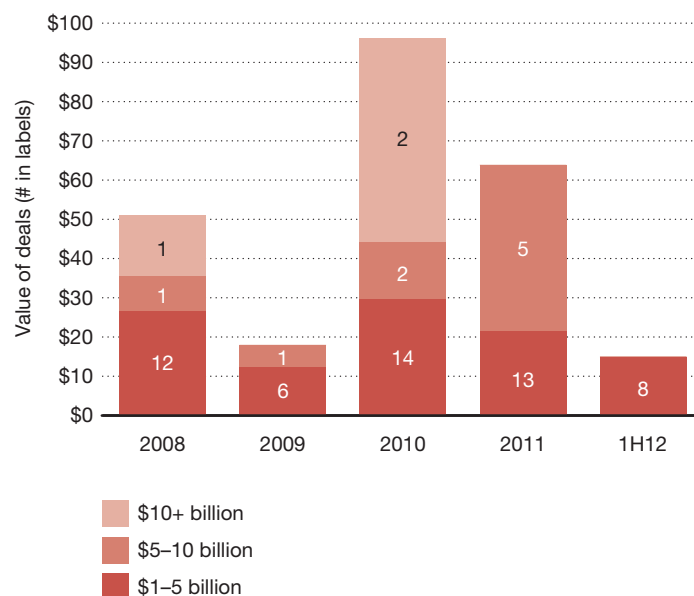
Also in June, Cabot Corp., a Boston-based specialty chemicals maker, agreed to acquire Norit NV, a Netherlands-based manufacturer and wholesaler of purification solutions, products, and systems, from Doughty Hanson & Co. Ltd. and Euroland Investments BV, for \$ 1.1 billion. Norit is a global leader in activated carbon purification, and the acquisition strengthens Cabot's specialty chemicals portfolio with a non-cyclical, high-growth and high-margin business. Cabot plans to sell \$600 million in debt securities to fund the acquisition.

## Deal valuation by median value/EBITDA

Measured by value/EBITDA for deals worth \$50 million or more in which target EBITDA was available



## Mega-deals



## Mega-deals in 2011 (value of \$1 billion or more)

Month announced	Target name	Target nation	Acquirer name	Acquirer nation	Status	Value of transaction in US\$ billion	Category
Jul	The Clorox Co	United States	Icahn Enterprises LP	United States	Withdrawn	9.42	Commodity Chemicals
Jan	The Mosaic Co	United States	Creditors	United States	Completed	8.88	Fertilizers & Agricultural Chemicals
Mar	Lubrizol Corp	United States	Berkshire Hathaway Inc	United States	Completed	8.79	Commodity Chemicals
Jul	Nalco Holding Co	United States	Ecolab Inc	United States	Completed	8.11	Specialty Chemicals
Jan	Danisco A/S	Denmark	DuPont Denmark Holding ApS	Denmark	Completed	7.21	Other
Apr	Rhodia SA	France	Solvay SA	Belgium	Completed	4.64	Commodity Chemicals
Feb	PTT Aromatics & Refining PCL	Thailand	PTT Chemical PCL	Thailand	Completed	3.78	Commodity Chemicals
May	International Specialty Products Inc	United States	Ashland Inc	United States	Completed	3.20	Commodity Chemicals
Feb	Sued Chemie AG	Germany	Clariant AG	Switzerland	Completed	2.63	Specialty Chemicals
Jan	Elkem AS	Norway	China National Bluestar(Group) Co Ltd	China	Completed	2.18	Other
Dec	Taminco NV	Belgium	Apollo Global Management LLC	United States	Completed	1.43	Commodity Chemicals
Sep	Exxaro Resources Ltd-Mineral Sands Operations	Australia	Tronox Inc	United States	Completed	1.33	Other
Apr	Evonik Industries AG-Carbon Black Business	Germany	Investor Group	United States	Completed	1.30	Commodity Chemicals
Jul	Arch Chemicals Inc	United States	Lonza Group Ltd	Switzerland	Completed	1.20	Specialty Chemicals
Sep	BASF Antwerpen NV-Fertilizer Production Plant	Belgium	OAO "Mineral'no-khimicheskaya kompaniya YevroKhim"	Russian Fed	Completed	1.13	Fertilizers & Agricultural Chemicals
Jun	Vale Fertilizantes SA	Brazil	Mineracao Naque SA	Brazil	Completed	1.13	Fertilizers & Agricultural Chemicals
Feb	Sued Chemie AG	Germany	Clariant AG	Switzerland	Completed	1.08	Specialty Chemicals
Jul	Vacuumschmelze GmbH & Co KG	Germany	OM Group Inc	United States	Completed	1.01	Other



### Mega-deals in 1H12 (value of \$1 billion or more)

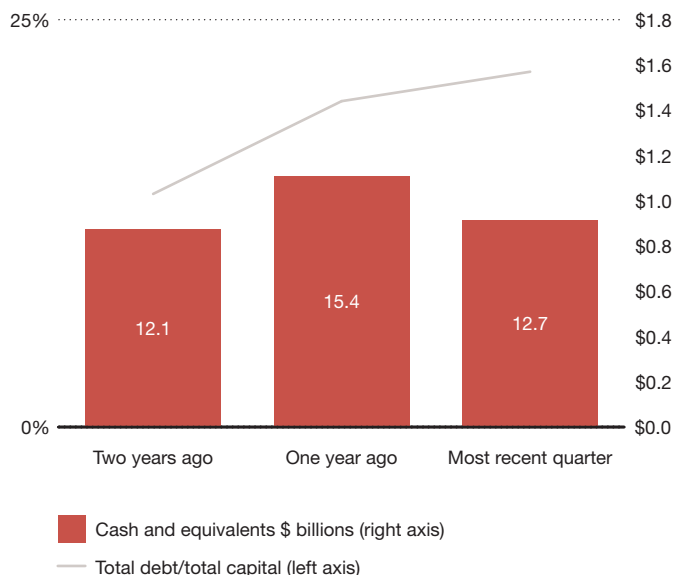
Month announced	Target name	Target nation	Acquirer name	Acquirer nation	Status	Value of transaction in US\$ billion	Category
Jan	Solutia Inc	United States	Eastman Chemical Co	United States	Pending	3.40	Specialty Chemicals
Jun	Yunnan Yuntianhua International Chemical Co Ltd	China	Yunnan Yuntianhua Co Ltd{YYTH}	China	Pending	2.81	Fertilizers & Agricultural Chemicals
Mar	ZOLL Medical Corp	United States	Asahi Kasei Corp	Japan	Completed	2.20	Other
Mar	Viterra Inc-Agri Products Business	Canada	Agrium Inc	Canada	Pending	1.81	Commodity Chemicals
Mar	Neo Material Technologies Inc	Canada	Molycorp Inc	United States	Completed	1.29	Commodity Chemicals
Feb	New Energy Mining Co Ltd	China	Hebei Veyong Bio-chemical Co Ltd	China	Pending	1.19	Other
Jan	Georgia Gulf Corp	United States	Westlake Chemical Corp	United States	Withdrawn	1.14	Commodity Chemicals
Jun	Norit NV	Netherlands	Cabot Corp	United States	Pending	1.10	Specialty Chemicals

### Mega-deals in 2Q12 (value of \$1 billion or more)

Month announced	Target name	Target nation	Acquirer name	Acquirer nation	Status	Value of transaction in US\$ billion	Category
Jun	Yunnan Yuntianhua International Chemical Co Ltd	China	Yunnan Yuntianhua Co Ltd {YYTH}	China	Pending	2.81	Fertilizers & Agricultural Chemicals
Jun	Norit NV	Netherlands	Cabot Corp	United States	Pending	1.10	Specialty Chemicals

## Financial leverage

Measured by average of top 50 global public chemical competitors



## 5 largest 2Q deals involve divestitures; stock swaps up

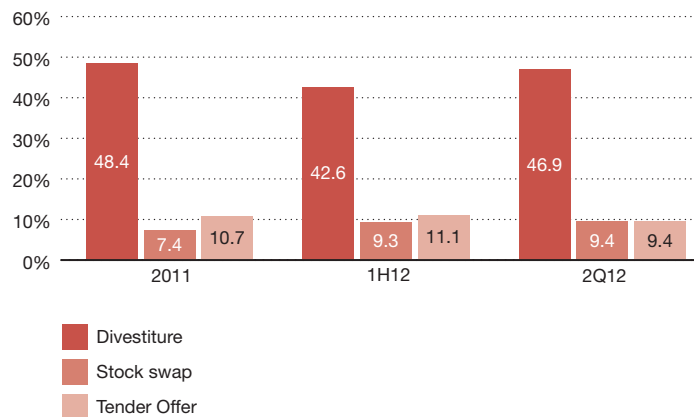
A review of the financial statements of the top 50 publicly traded global chemical producers reveals that, on average, these companies have increased their cash balances over the past two years. At the same time, debt to capital has declined 270 basis points since just one year ago, suggesting that potential chemicals acquirers have become financially stronger within the past year.

The five largest deals (valued at \$5.9 billion) were divestitures. The divestitures this quarter were primarily the sale of assets by chemical manufacturers, as companies eliminated non-core and/or underperforming operations. This is a way to improve overall EBITDA margin (by eliminating lower margin, non-core businesses) amid slower revenue growth for the core business.

Stock swaps increased this quarter. These transactions allow a company to acquire the assets of another without reducing its cash balances or increasing its debts. Some equity markets have performed relatively well this year, so their stock becomes better “currency.” It also allows them to maintain their liquidity. For example, in May, Hubei Sanonda Co. Ltd. announced plans to acquire an 80.93% interest in Jiangsu Anpon Electrochemical Co. Ltd., a Huaian-based chemical manufacturing firm. This deal was valued at \$120.4 million.

## Acquisition characteristics

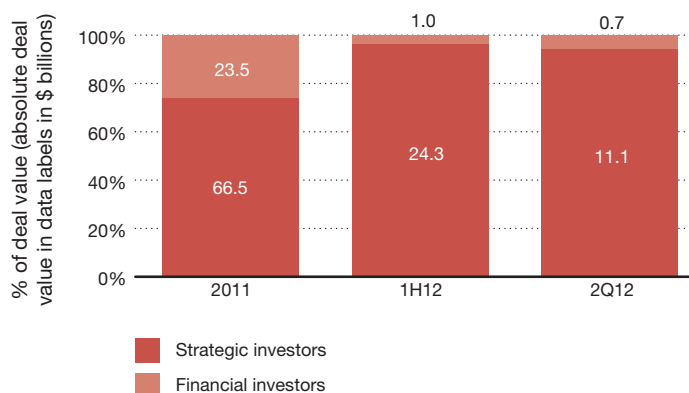
Measured by percent of number of deals worth \$50 million or more (2011, 1H12, 2Q12)



Recently, deals have largely been by strategic investors. These deals allow a company to enter more specialized markets and to diversify their product portfolios. There is evidence that fundraising has been relatively weak this year, which could be limiting financial investors' involvement in the deal environment. For example, there were only four deals by non-strategic investors this quarter, one of which was by a labor union.

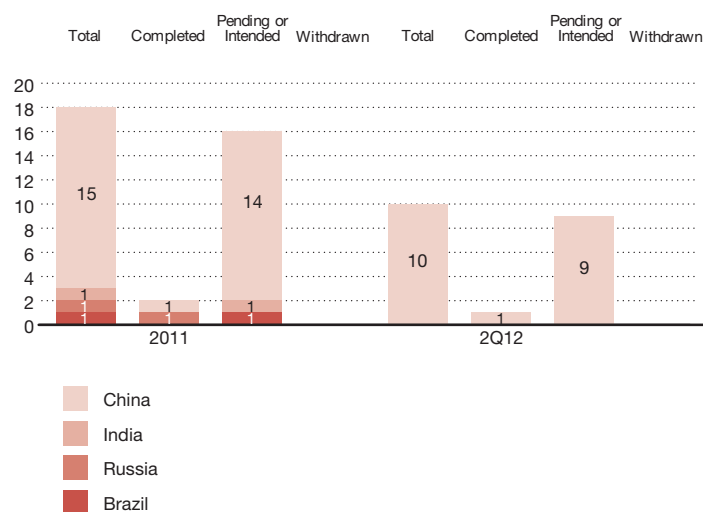
#### Deals by investor group

Measured by value of deals worth \$50 million or more



### Distribution of BRIC deals by target nation

Measured by number of announced deals worth \$50 million or more

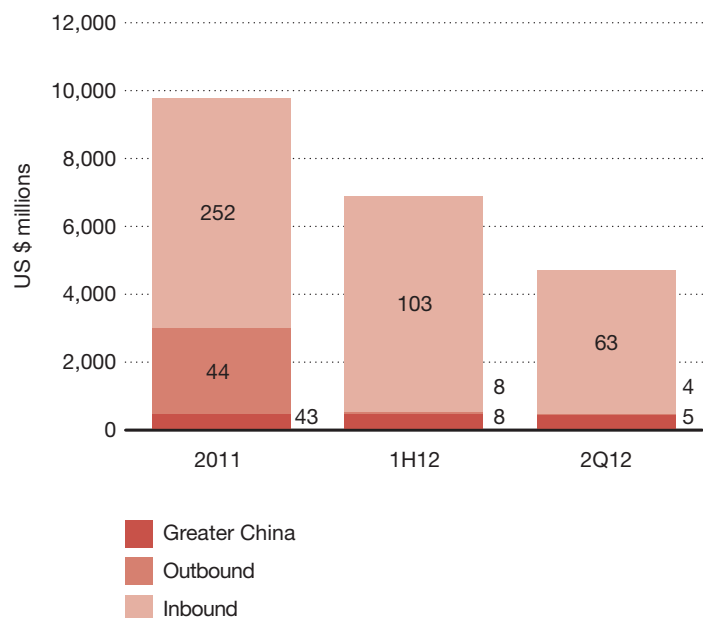


### BRIC-affiliated transactions increase as producers in China continue to consolidate

Despite a 45% increase in deal value in the second quarter, the level of activity related to Brazil, Russia, India, and China (the BRIC countries) for deals valued greater than \$50 million increased only 25%. This quarter all 10 announced BRIC deals were for China-based targets and acquirers. These deals were responsible for almost one-third of total volume for the quarter. In the Chinese government's most recent five-year plan, the focus for chemical manufacturers is increased innovation and improved manufacturing efficiencies. By combining smaller producers, the new, larger companies may be better able to meet these goals, while extending their reach and increasing their product lines. For example, Yunnan Yuntianhua's recent acquisitions will position it to become the largest phosphorous-based fertilizer manufacturer in Asia.

### Greater China deals

Measured by number of announced deals worth \$50 million or more

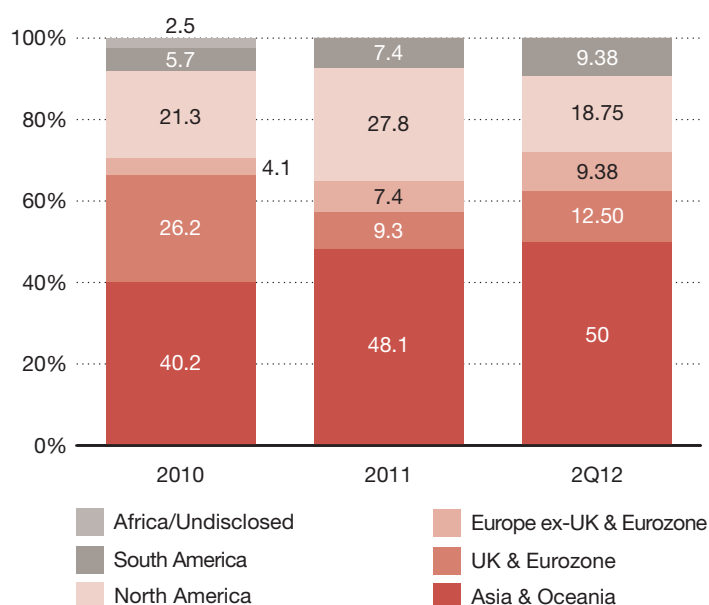


## Asia & Oceania region drives deal value and volume in second quarter

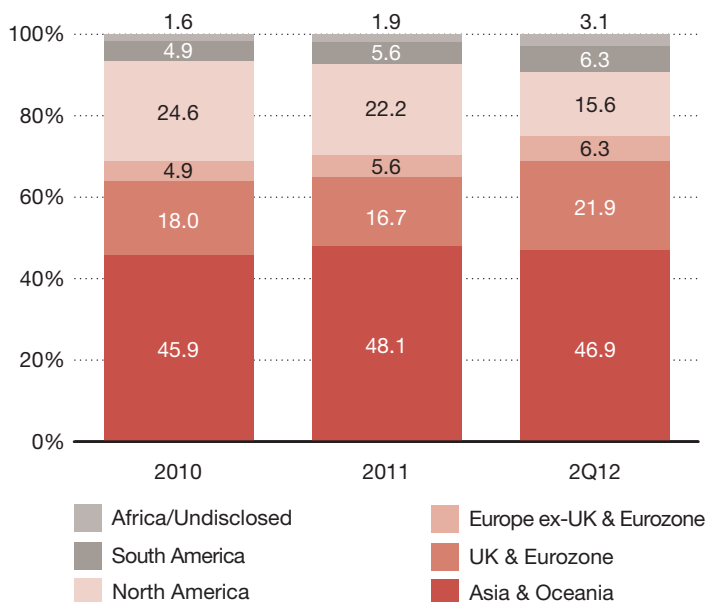
During the second quarter, targets in the Asia & Oceania region drove deal volume and value, with the UK and Eurozone responsible for a significant portion of the balance. The two regions combined were responsible for almost two-thirds of deal value. This strong showing was aided by the two mega-deals, a local market Chinese transaction valued at \$2.8 billion and the acquisition of Netherlands-based Norit for \$1.1 billion. For acquirers, deal volume was also driven by Asia & Oceania. Activity in North America was also strong, driven by Cabot's \$1.1 billion acquisition.

Half of the acquisitions were from emerging economies this quarter, the same as in the first quarter, which is up from 2011. Chinese targets played a major part in activity for emerging economies. The majority of this activity involved local market deals, particularly in China, where Chinese companies sought controlling interests in local operations. However, China's GDP slowed to a three-year low of 7.6% last quarter, raising concerns that the economy may continue to decelerate. India is also showing signs of a slowdown, with Asia's third-biggest economy expected to grow only 6.5% this year, compared with a previous estimate of 7%, according to the Asian Development Bank. While the Asia & Oceania region could continue to be a driver of overall deal activity, it may be at a slower pace, as the economies of China and other countries cool.

Regional distribution of deals by target region



Regional distribution of deals by acquirer region



## North America drives local deal value

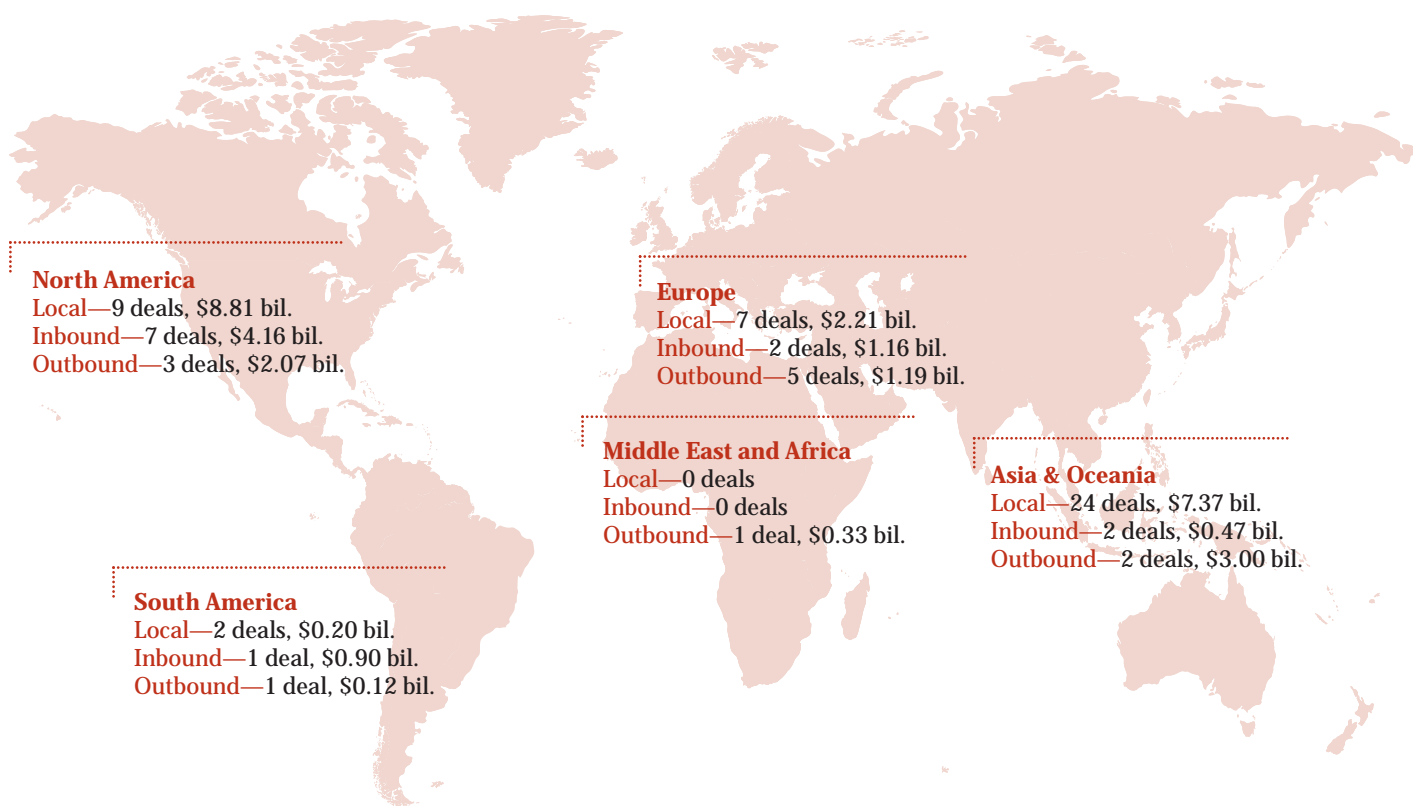
North America drove local deal value in the first half of 2012, as chemical companies continued to seek growth and other synergies through consolidation. However, Asia & Oceania drove local deal volume; potentially due to the smaller, more fragmented market in this region. A significant portion of the deals was by fertilizer and agricultural acquirers; however, commodity chemicals and construction-related industries (e.g., cement and explosives) were also represented. The majority of these deals were smaller in nature (i.e., deals valued at less than \$250 million). Similarly, North America also drove inbound deals, assisted by the first quarter's Japan-based Asahi Kasei's acquisition of Canada-based ZOLL.

Of the eight mega-deals so far this year, five were for North American targets, four of the deals were local market, and two were inbounds.

Outbound deal value was driven by the Asia-Pacific region, with two deals during the first half of 2012 valued at \$3.0 billion. Outbound deal volume is increasing (12 deals), and Europe had the most activity, with five deals. There were also two outbound deals involving North America, including the second-quarter acquisition of Netherland-based Norit by Cabot Co. for \$1.1 billion.

## Global chemicals M&A activity

Measured by number and value of deals worth \$50 million or more (1H12)



Note: In the regional chart local-market means within region, not within country

## ***PwC's chemicals experience***

### ***Deep chemicals experience***

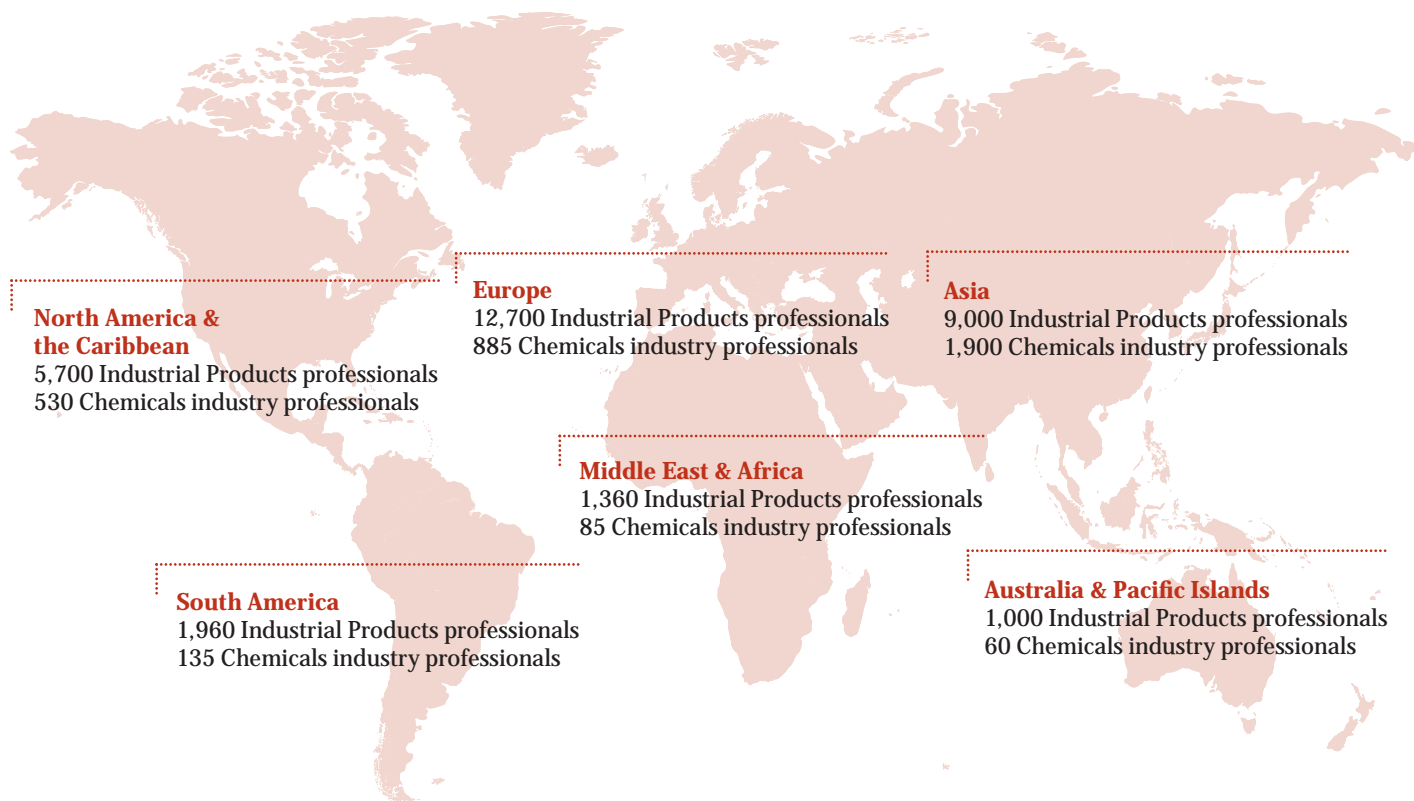
Our Chemicals Industry practice is comprised of a global network of more than 3,500 partners and client service professionals. Our chemicals team encourages dialogue on emerging trends and issues by holding conferences for industry executives. PwC is also a sponsor of leading industry conferences and frequently authors articles for, or is quoted in, leading industry publications. Our involvement with these organizations represents PwC's commitment to furthering industry dialogue with chemicals industry leaders. Our professionals are concentrated in areas where the chemicals industry operates today and in the emerging markets where the industry will likely operate in the future.

### ***Quality deal professionals***

PwC's Transaction Services practice, with more than 6,500 dedicated deal professionals worldwide, has the right industry and functional experience to advise you on all factors that could affect the transaction, including market, financial accounting, tax, human resources, operating, IT, and supply chain considerations. Teamed with our Chemicals Industry practice, our professionals can bring a unique perspective to your deal, addressing it from a technical aspect as well as from a chemicals industry point of view.

### ***Global connection***

PwC's Chemicals Industry practice is part of an Industrial Products group that consists of more than 31,500 professionals, including more than 18,600 providing Assurance services, 7,700 providing Tax services, and 5,200 providing Advisory services.



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## Methodology

*Chemical compounds* is an analysis of deals in the global chemicals industry. Deal and financial information was sourced from Thomson Reuters using the Thomson-defined industry sector of Chemicals and Allied Products for target, and other selected industries acquired by companies that are part of the Thomson-defined Chemicals and Allied Products designation. This analysis includes all mergers and acquisitions for disclosed or undisclosed values, leveraged buyouts, privatizations, minority stake purchases and acquisitions of remaining interest announced between January 1, 2008, and March 31, 2012, with a deal status of completed, intended, partially completed, pending, pending regulatory approval, seeking buyer, seeking buyer

withdrawn, unconditional (i.e., initial conditions set forth by the acquirer have been met but deal has not been completed) or withdrawn. Geographic categories generally correspond to continents with exceptions for Australia (included in the Asia Pacific category), Europe (divided into Western and Eastern categories based upon UN definitions) and the Middle East (defined as a separate category based upon US CIA World Factbook). Where China is referenced in this analysis, it includes both the Peoples Republic of China and Hong Kong, unless otherwise indicated. Where the number of deals is referenced in this analysis it means the number of all deals with disclosed or undisclosed values, unless otherwise noted.



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