

PwC Deals

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Global Chemicals Deals Insights

Year-end 2018


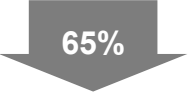
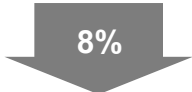


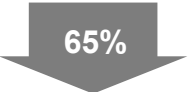
Executive summary

Two thousand and eighteen was a solid year for Global Chemicals M&A, with close to \$100 billion in deal value, surpassing the previous year's value of \$64 billion. While global trade disputes may have hampered deal activity in the latter part of the year; lower corporate tax rates and access to capital led to fairly steady volumes and robust valuations. Investments in and valuations of the Specialty Chemicals category continued to be significant amid decreasing supply while diversified and commodity chemical valuations remained flat to declining given balanced demand and availability.



"Despite a number of continued macro economic factors such as trade tariffs, oil prices, and Brexit, we expect 2019 Chemicals M&A activity to remain upbeat. Similar to other sectors, we anticipate a decoupling of M&A from the broader economy given the record access to capital for both private equity and corporate buyers along with the continued focus on portfolio coherence."

— Craig Kocak, US Deals Chemicals Leader

2018	2018 Versus 2017	Q4 2018 versus Q3 2018
Total deal value \$99.6 billion	 56%	 65%
Total deal volume 855	 8%	 11%
Average deal size \$212.9 million	 59%	 65%

Trends and highlights

- Deal value in 2018 grew by 56% over the previous year to \$99.6 billion. However, Q4 2018 deal value was \$10.7 billion, a decline from Q3 2018 (\$30.0 billion) which had four deals over \$3 billion during the quarter.
- In volume terms, the year witnessed a slight decline of 8% over 2017 to 855 deals. Likewise, the Q4 2018 volume also declined by 11% to 200 deals vis-à-vis the previous quarter.
- Average deal size in 2018 was \$212.9 million, 59% more than the prior year. However, the average deal size for Q4 2018 significantly declined to \$92.1 million.

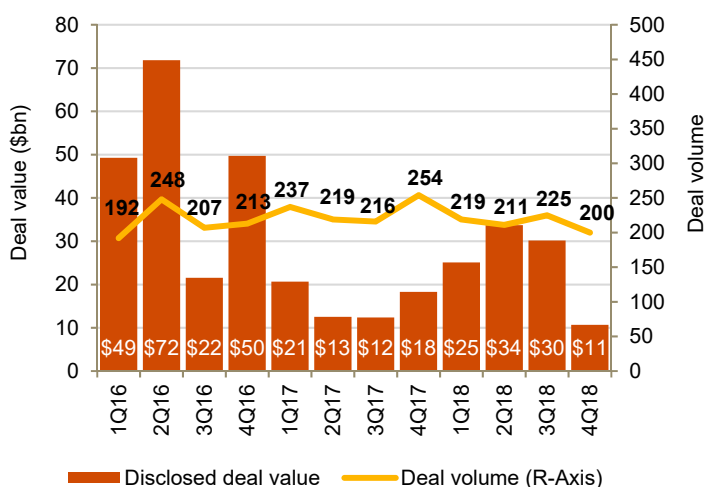
Note: Deal value and average deal size is based on deals with disclosed value. Deal volume includes all deals with and without disclosed value.

Highlights of 2018 deal activity

Deal value and volume overview

Deal value recorded in 2018 was \$99.6 billion, increasing by 56% from previous year. Four megadeals during the year drove the growth. However, the deal value in Q4 2018 witnessed a significant decline of 65% vis-à-vis previous quarter. Deal volume for the year declined slightly by 8% vis-à-vis previous year to 855 deals. The trend continued in Q4 2018 as well, where the volume declined by 11% to 200 deals compared to previous quarter. Geopolitical tensions impacted the deal activity during the year although they are expected to ease in 2019, which will revive the growth momentum.

Total deal value (in \$ billion) and volume



Largest transaction

The year's largest deal was AkzoNobel's divestment of its Specialty Chemicals division to The Carlyle Group for \$12.6 billion. The deal repositions AkzoNobel as a global, pure-play leader in Paints and Coatings and is anticipated to accelerate consolidation in the global industry.

Megadeals (\$5 billion and over)

The year witnessed four megadeals, which contributed \$35 billion accounting for 35% of total deal value. In addition to the AkzoNobel divestiture, the other notable megadeals were the acquisition by Wanhua Chemical Group Co., Ltd. of its controlling shareholder Yantai Wanhua Chemical Industry Co. Ltd. for \$10.2 billion. This deal creates the world's largest urethanes raw materials company.

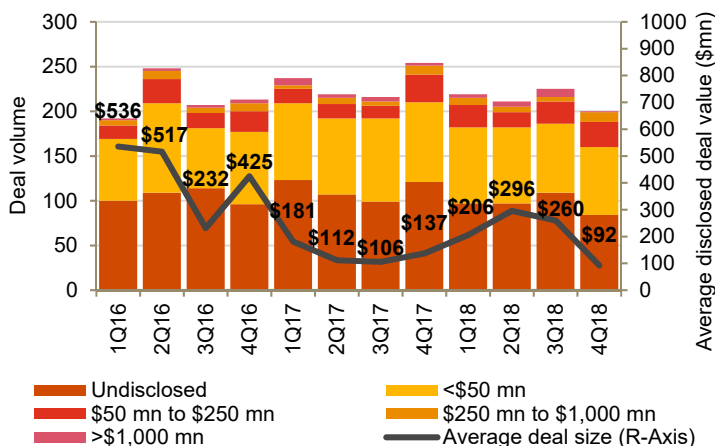
\$12.6 billion



4 mega-deals



Deals by disclosed value



Deals by disclosed value and average deal size

Average deal size of \$212.9 million witnessed an increase of 59%, compared to 2017. The year also witnessed a significant number of large sized deals (over \$1 billion), which pushed the momentum.

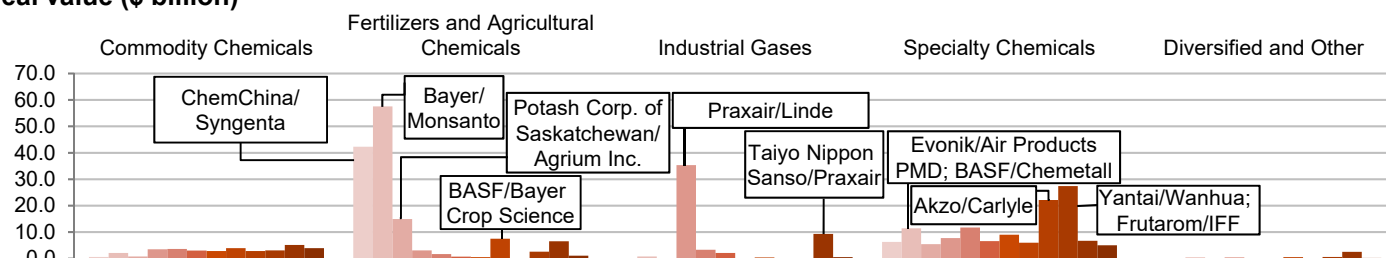
Source: Thomson Reuters and other publicly available sources; *Megadeals defined as deals with disclosed value equal to or greater than \$5 billion.

Highlights of 2018 deal activity, continued

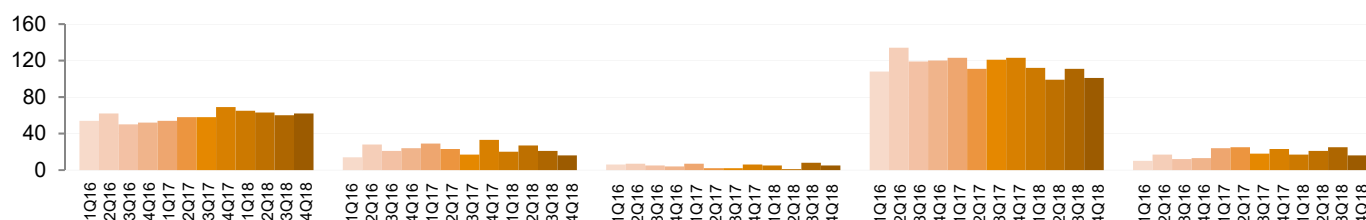
Sub-sector analysis

Specialty Chemicals maintained its dominance with 61% contribution to deal value in 2018. The category contributed 49% of volume for the year. Commodity Chemicals contributed 29% in deal volume, along with 15% in deal value. In Q4 2018, Specialty Chemicals was the most significant category with 47% share in deal value.

Deal value (\$ billion)



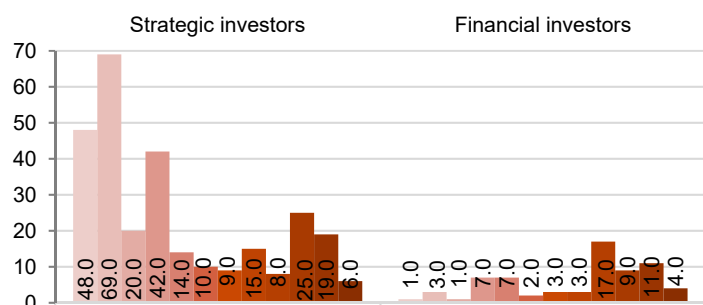
Deal volume



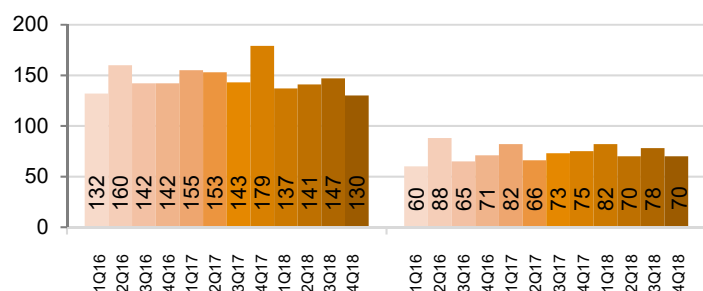
Financial vs. strategic investors

Strategic investors accounted for 59% and 65% of deal value and volume, respectively, in 2018. However, financial buyers were more active in 2018 and we expect this trend to continue in 2019 given their significant level of dry powder and the expectation of non-core assets continuing to come to market.

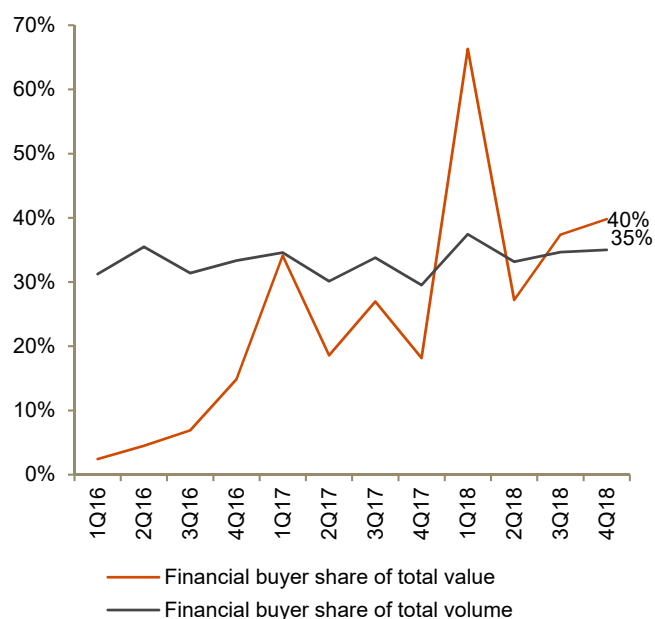
Deal value (\$ billion)



Deal volume



Financial investor share of M&A activity

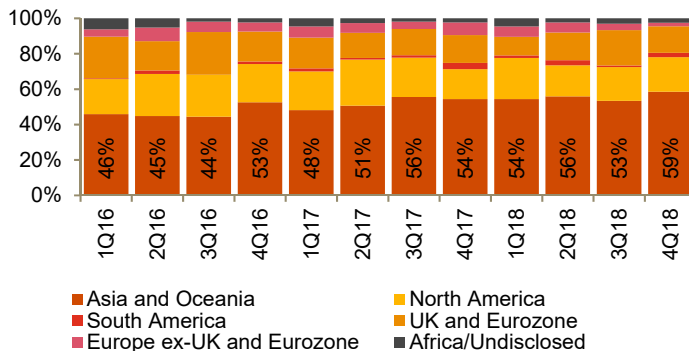


Regional deal trends in 2018

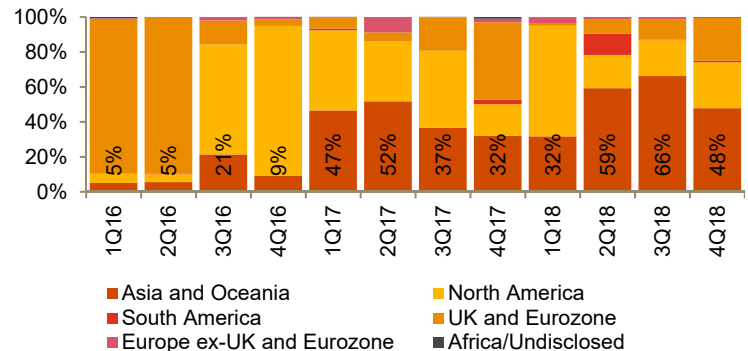
Regional analysis

Asia and Oceania continues to lead the deal activity with 55% of the deal volume and 53% of the deal value this quarter, as acquirer. The Asia and Oceania region followed, and accounted for 31% of acquirers in deal value, with 20% of deal volume this year. Asia and Oceania remained the most active target region also with 41% of the deal value, followed by the UK and Eurozone with 31%. In Q4 2018, the Asia and Oceania region maintained its dominance with 48% of deal value, as an acquirer, and 59% of contribution in deal volume.

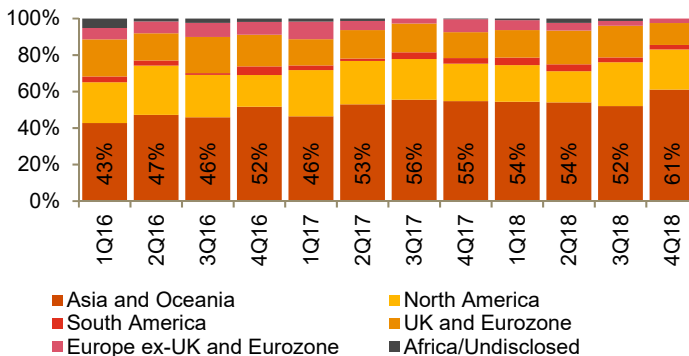
Share of deal volume by acquirer region



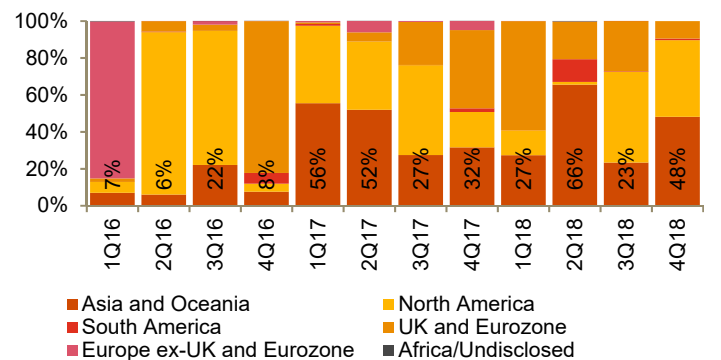
Share of deal value by acquirer region



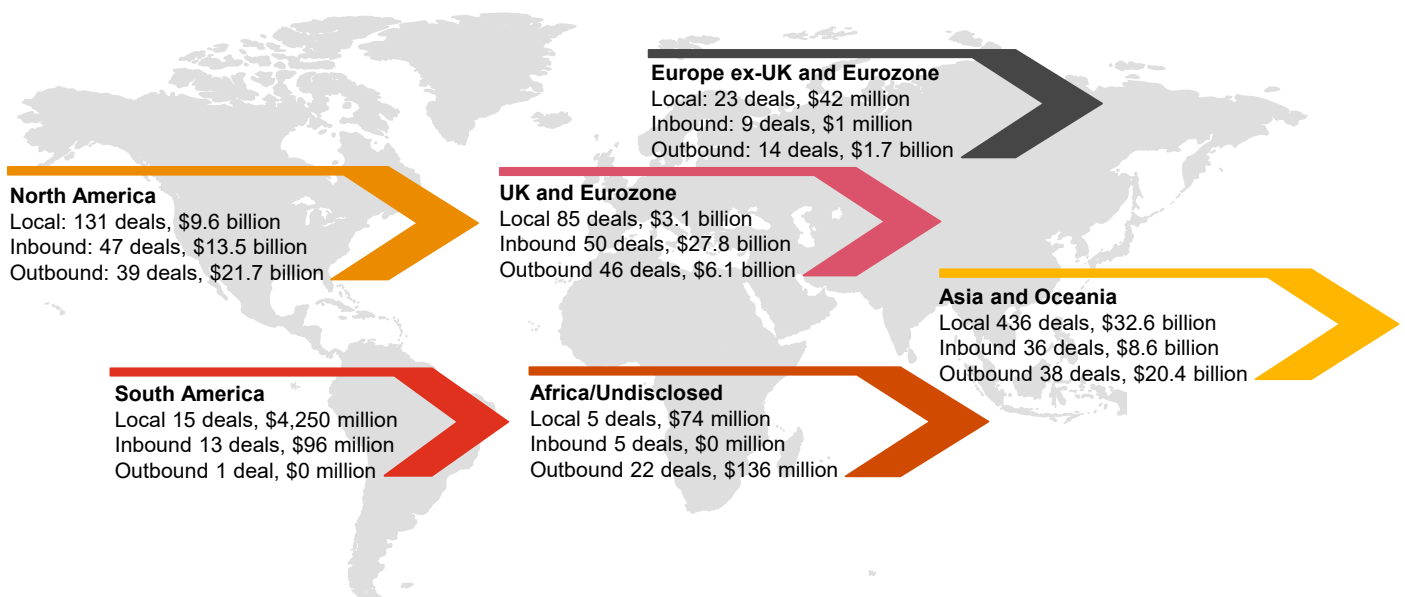
Share of deal volume by target region



Share of deal value by target region



Chemicals deals by region



Chemicals top deals 2018 and outlook

Key announced transactions (2018)

Announced	Target name	Target nation	Acquirer name	Acquirer nation	Status	Deal value*	Category
03/27/18	Akzo Nobel NV-Specialty Chemicals Business	Netherlands	Carlyle Group	United States	Pending	12,566	Specialty Chemicals
05/10/18	Yantai Wanhua Chemical Industry Co. Ltd.	China	Wanhua Chemical Group Co. Ltd.	China	Pending	10,239	Specialty Chemicals
05/07/18	Frutarom Industries Ltd.	Israel	International Flavors & Fragrances Inc.	United States	Pending	6,355	Specialty Chemicals
07/05/18	Praxair Inc.-European Industrial Gas Business	Spain	Taiyo Nippon Sanso Corp.	Japan	Pending	5,827	Industrial Gases
07/20/18	Arysta LifeScience Ltd.	United States	UPL Corp. Ltd.	India	Pending	4,200	Fertilizers and Agricultural Chemicals
05/17/18	Sociedad Quimica Y Minera de Chile SA	Chile	Inversiones TLC SpA	Chile	Pending	4,066	Specialty Chemicals
04/16/18	Bayer AG	Germany	Temasek Holdings (Pvt) Ltd.	Singapore	Pending	3,699	Specialty Chemicals
07/16/18	Linde AG - NA and SA Gas Business	United States	Messer Group & CVC	Germany	Pending	3,300	Industrial Gases
09/13/18	Momentive Performance Chemicals	United States	SJL Partners, KCC Corp. and Wonik Qnc Corp.	South Korea	Pending	3,100	Specialty Chemicals
02/15/18	A. Schulman Inc.	United States	LyondellBasell Industries NV	United States	Completed	2,250	Specialty Chemicals

Source: Thomson Reuters and other publicly available sources;

*In Million USD

Chemicals sector outlook

Deal activity in the global Chemicals industry remains robust with rising deal values offsetting declining deal volume. Private equity buyers are increasingly active, including firms that are new to investing in the Chemicals industry. Consolidation in the Specialty chemicals industry has reduced the overall pool of larger, high-quality targets. As a result, trading multiples for Specialty chemicals companies continue to increase with decreasing supply. Private, family-owned Specialty Chemicals companies are increasingly entering into the M&A target pool with the increase in trading multiples. Sectors are likely to see increasing activity include health and nutrition additives, plastics compounding, coatings, adhesives, specialties distribution and specialty materials.

Consolidation of agrochemicals/seeds and Industrial Gases is anticipated to drive reduced deals volume given recent transactions in the US and Europe. Regional deals in diversified and commodity chemicals are anticipated to draw increased interest as Asian chemical companies seek to build scale in their region and expand into Europe. Diversified and commodity chemicals trading multiples are anticipated to be flat to declining given balanced demand and availability.

Further portfolio restructuring of global diversified chemical companies, and M&A involving larger pure-play Specialty Chemicals companies are potential drivers of deals activity in 2019. Major US and European diversified chemical companies continue to actively explore streamlining their portfolios through divestment, and evaluation acquisitions to build the scale and scope of their growth platforms. In addition, restructuring at several larger publicly traded Specialty Chemicals companies has increased portfolio coherence, but also place these firms in the crosshairs of global leaders.

Amidst these factors, we believe deal activity will remain upbeat in 2019, particularly in Specialty Chemicals, as strategic and financial investors focus on growing existing platforms, and accessing higher-growth markets to maximize this business cycle and position them for the next business cycle.

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Smart deal makers are perceptive enough to see value others have missed, flexible enough to adjust for the unexpected, aggressive enough to win favorable terms in a competitive environment, and circumspect enough to envision the challenges they will face from the moment the contract is signed. But in a business environment where information can quickly overwhelm, the smartest deal makers look to experienced advisors to help them fashion a deal that works.

PwC's Deals group can advise chemicals companies and chemicals-focused private equity firms on key M&A decisions, from identifying acquisition or divestiture candidates and performing detailed buy-side diligence, to developing strategies for capturing post-deal profits and exiting a deal through a sale, carve-out, or IPO. With more than 20,000 deals practitioners worldwide, we can deploy seasoned teams that combine deep chemicals industry skills with local market knowledge virtually anywhere your company operates or executes transactions.

Although every deal is unique, most will benefit from the broad experience we bring to delivering strategic M&A advice, due diligence, transaction structuring, M&A tax, merger integration, valuation, and post-deal services.

In short, we offer integrated solutions, tailored to your particular deal situation and designed to help you extract peak value within your risk profile. Whether your focus is deploying capital through an acquisition or joint venture, raising capital through an IPO or private placement, or harvesting an investment through the divestiture process, we can help.

For more information about M&A and related services in the global chemicals industry, please visit www.pwc.com/us/deals or www.pwc.com/us

About the data

The information presented in this report is an analysis of deals in the global chemicals industry. Deal information was sourced from Thomson Reuters and includes deals for which targets have an SIC code that falls into chemicals mid-industry group. Certain adjustments have been made to the information to exclude transactions which are not specific to chemicals or incorporate relevant transactions that were omitted from the SIC industry codes.

This analysis includes all individual mergers, acquisitions, and divestitures for disclosed or undisclosed values, leveraged buyouts, privatizations, minority stake purchases, and acquisitions of remaining interest announced between October 1, 2015 and December 31, 2018, with a deal status of completed, partially completed, pending, pending regulatory and pending completion, and excludes all rumors and seeking buyers. Additionally, transactions that are spin-offs through distribution to existing shareholders are included.

Percentages and values are rounded to the nearest whole number which may result in minor differences when summing totals.