

“ The deal frenzy in Life Sciences continues into the second half with the announcement of further mega mergers. ”

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HIGHLIGHTS

- The year-to-date aggregated completed deal value broke the \$300 billion mark, a level unseen since 2008.
- While the number of deals remained flat in Q3 2015, the total deal value decreased by 30% compared to Q2 2015. Only five of the top 10 completed pharmaceutical deals during Q3 2015 were valued over \$1 billion (versus 10 out of 10 in Q2 2015).
- Generics consolidation continues, accounting for four of the top 10 announced deals during Q1-Q3 2015 and three of the top 10 completed deals in Q3 2015.
- While the specialty chemicals segment remained attractive, consolidation in the agrochemical sector was another key deal driver, accounting for three of the top 10 announced deals during Q1-Q3 2015.
- US continues to be the most active country in both sectors. China has slowed somewhat whilst other countries such as India are starting to invest abroad in the pharmaceutical sector.

FIGURE 1: NUMBER OF COMPLETED DEALS BY SECTOR 2013-Q3 2015

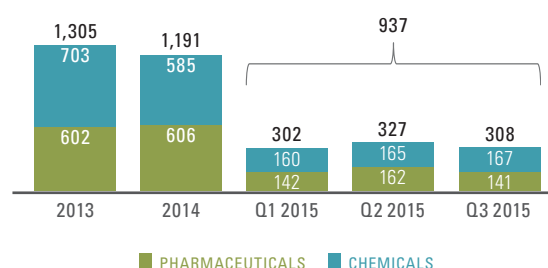
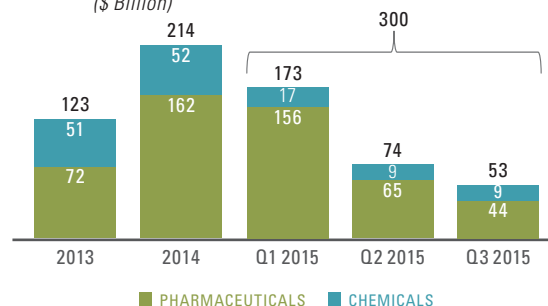
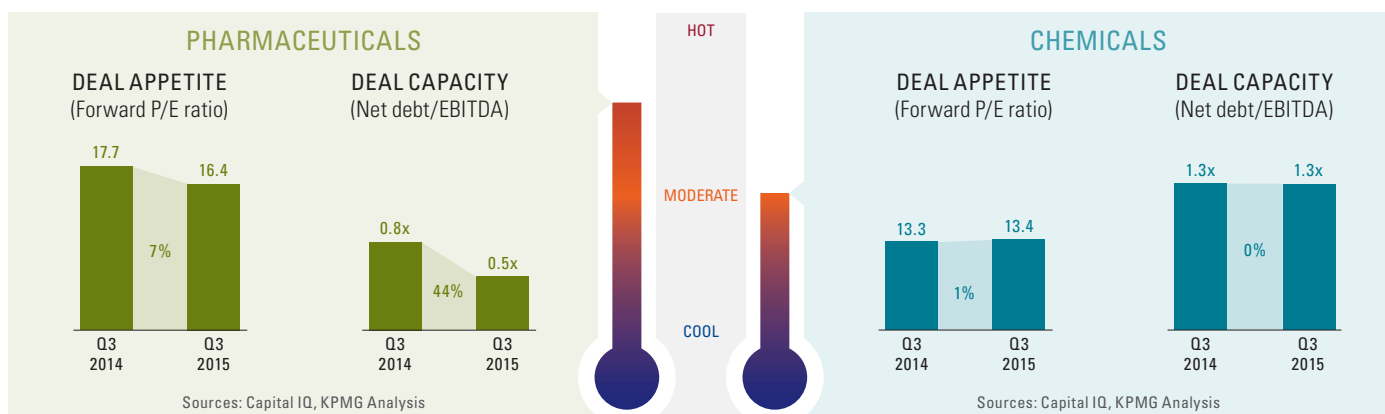


FIGURE 2: VALUE OF COMPLETED DEALS BY SECTOR 2013-Q3 2015 (\$ Billion)



DEAL THERMOMETER Q3 2015

KPMG's Deal Thermometer signals the environment for M&A deals in chemicals and pharmaceuticals. It combines the appetite for deals (changes in forward P/E ratios) with the capacity to fund deals (changes in Net Debt/ EBITDA multiples). 'Hot' signifies an environment conducive to deal-making.



PHARMACEUTICALS

Acquirers are struggling to find available assets for sale and are thus encroaching on assets not yet on the selling block. Deal activity in the sector was spread across therapy areas, while consolidation in generics continues. Orphan drugs and immunotherapy are also witnessing significant investments. US remains the most active country with more than half of the top 10 deals involving US targets.

DEAL FOCUS AREAS

Unsolicited bids are dominating the landscape

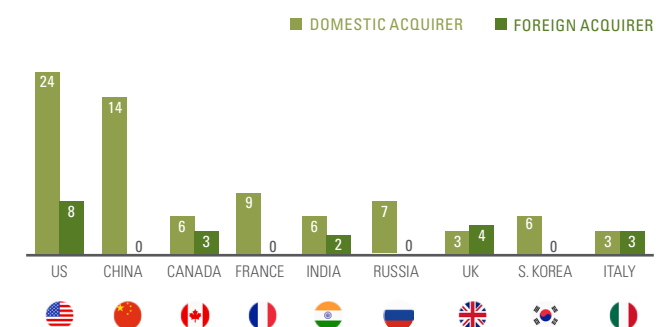
In September, Mylan N.V. launched a \$34.1 billion formal offer to the shareholders of Irish over-the-counter (OTC) and generics drug maker, Perrigo Company PLC. The offer was rejected by the board primarily on grounds of under-valuation.

Horizon Pharma PLC's \$2.1 billion unsolicited bid for US-based Depomed Inc. was rejected, despite a \$300 million increase in the offer. Depomed expects significant growth from its recent acquisition of Janssen Pharmaceuticals Inc.'s Nucynta. It adopted a poison pill strategy to thwart the takeover, which would be triggered if an attempt is made to acquire a stake of 10% or more in Depomed.

Consolidation in generics continues

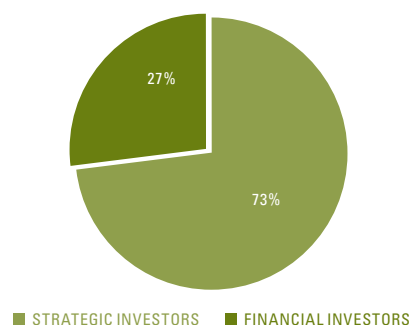
Following the withdrawal of its \$43 billion bid for Mylan N.V., Teva Pharmaceuticals Industries Ltd. announced the acquisition of the generics business of Allergan PLC for \$40.5 billion. The combined business would account for 20% of the global generics market.

FIGURE 3: SELECTED COUNTRIES IN PHARMACEUTICAL M&A Q3 2015



Sources: Thomson One, KPMG Analysis

FIGURE 4: NUMBER OF PHARMACEUTICAL DEALS BY INVESTOR Q3 2015



Sources: Thomson One, KPMG Analysis

In Q3 2015, Pfizer Inc., which already has a large generics business, completed the \$17 billion acquisition of Hospira Inc.. Hospira is the global leading provider of injectable drugs and infusion technologies and is a leading player in biosimilars. The deal combines complementary product portfolios and pipelines. The global market value for generic sterile injectables and biosimilars is estimated to be worth \$70 billion and \$20 billion respectively by 2020.

Endo International PLC acquired Par Pharmaceutical Holdings for \$8.1 billion and Cardinal Health Inc. bought Harvard Drug Group LLC for \$1.1 billion, which focuses on generics and OTC.

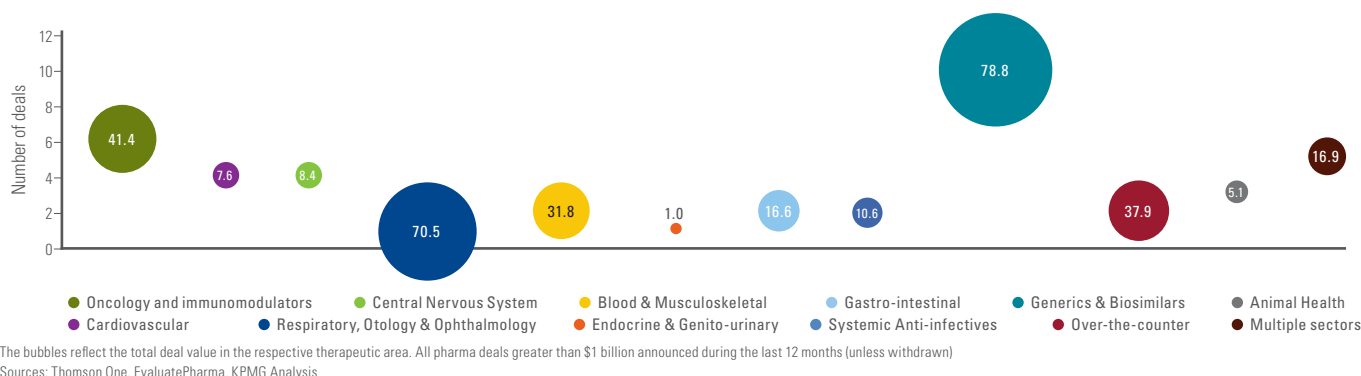
UK-based Hikma Pharmaceuticals PLC won the bidding war to acquire the specialty generics business, Roxane Laboratories Inc., for \$2.8 billion from C.H. Boehringer Sohn AG & Co. KG. This will boost Hikma's non-injectable generics business in the US. Others bidders included Mallinckrodt PLC and Perrigo Company PLC.

Immunotherapy attracts significant investments

Celgene Corp. is actively acquiring assets to diversify within immunotherapy and to build upon its growing expertise in inflammatory bowel disease (IBD). In Q3 2015, it acquired immune disorders specialist, Receptos Inc., for \$7.2 billion, in particular their receptor modulator, Ozanimod. Ozanimod is able to treat ulcerative colitis and relapsing multiple sclerosis more effectively than previous oral therapies and could become the first receptor modulator which is suitable for an effective treatment of IBD. Celgene further acquired a 10.1% share in Juno Therapeutics Inc., which specializes in re-engaging the body's immune system to treat cancer.

AstraZeneca PLC has gained rights to experimental immunoncology treatments through \$500 million and \$727 million agreements with Heptares Therapeutics Ltd. and Inovio Pharmaceuticals Inc., respectively.

FIGURE 5: DEAL ACTIVITY BY TARGET'S MAIN THERAPEUTIC AREA FOR THE 12 MONTHS TO 30. SEPTEMBER 2015



Focus on orphan drugs increases

Shire PLC announced a \$30 billion conditional, unsolicited takeover of orphan drug maker Baxalta Inc., a recent spin-off from Baxter International Inc.. Shire has been building its rare disease business through acquisitions, as it diversifies beyond its best-selling ADHD drug, Vyvanse. It had already acquired NPS Pharmaceuticals Inc. in Q1 2015. Beyond the rare disease portfolio specialized in blood and immune system, Shire would also get access to Baxalta's biosimilar drugs.

Bristol-Myers Squibb Co. (BMS) has been active in pursuing investments in the rare disease area of fibrosis, expanding its early-stage portfolio. It acquired the exclusive right to purchase Promedior Inc. for \$1.3 billion. BMS gains access to Promedior's lead asset currently in Phase 2 clinical trial testing for the treatment of two orphan fibrotic diseases, idiopathic pulmonary fibrosis and myelofibrosis, PRM-151. Since Q4 2014, BMS also holds an exclusive option agreement to acquire Galecto Biotech AB and its novel inhaled inhibitor in Phase 1 clinical testing for idiopathic pulmonary fibrosis.

CAPITAL INDEX

All pharma indices declined noticeably in the last month of Q3 2015. The stagnating growth in China, the US-political uncertainty as well as the recent unfavorable press in the US regarding drug pricing are contributing factors.

FIGURE 6: DEVELOPMENT OF PHARMA SHARE PRICES Q1-Q3 2015

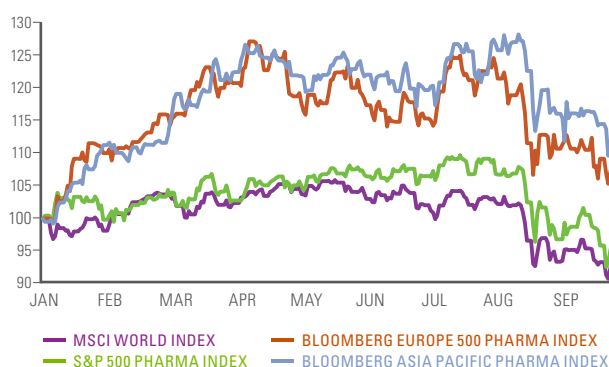
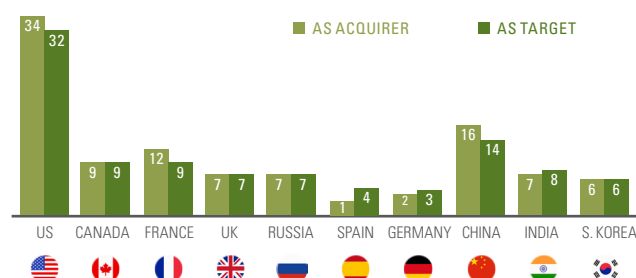


FIGURE 7: TOP COUNTRIES IN PHARMACEUTICAL M&A Q3 2015



INDIA

Due to quality issues at certain Indian plants, the FDA halted Indian shipments to the US for a variety of drugs. As a counter measure, Indian firms are acquiring US targets to gain US based production facilities. In Q3 2015, Lupin Ltd. announced the \$880 million acquisition of generics player, GAVIS Pharmaceuticals LLC. GAVIS's New Jersey-based manufacturing facility will become Lupin's first production site in the US.

Another Indian player, Cipla Ltd., announced its acquisition for \$550 million of two US-based companies, InvaGen Pharmaceuticals Inc. and Exelan Pharmaceuticals Inc. – both with US manufacturing facilities. This acquisition will give Cipla local production scale while expanding access to government and institutional markets.

CHINA





















In Q3 2015, domestic deals dominated M&A activity in China. The largest completed domestic deal was Zibo Wanchang Science & Technology Co. Ltd.'s \$2.4 billion acquisition of 99% of the shares of Xiamen Bioway Biotech Co., Ltd.. Xiamen is a biopharmaceutical company that focuses on the development of nerve growth factor products, cell factory medicine, antibody medicine, and polypeptide medicine.

PHARMACEUTICALS

The deal value of the global top 10
completed deals in Q3 2015 was

\$38.9 billion





















TABLE 1: GLOBAL TOP DEALS COMPLETED IN Q3 2015

BIDDER	TARGET	THERAPY AREA	VALUE ¹	CONTINGENT PAYMENTS ¹	TOTAL VALUE ¹
 Pfizer Inc.	 Hospira Inc.	Generics, injectable drugs (e.g. acute care and oncology), infusion technologies, and biosimilars			17.0
 Endo International PLC	 Par Pharmaceutical Companies Inc.	Generics (wide range of therapeutic areas)			8.1
 Celgene Corp.	 Receptos Inc.	Immune and metabolic diseases			7.2
 Zibo Wanchang Science & Technology Co., Ltd.	 Xiamen Bioway Biotech Co., Ltd.	Central and peripheral nervous system			2.4
 Cardinal Health Inc.	 Harvard Drug Group LLC	Generics and OTC (wide range of therapeutic areas)			1.1
 Baxter International Inc.	 Sigma-Tau S.p.A. – ONCASPAR Portfolio	Oncology			0.9
 Amicus Therapeutics Inc.	 Scioderm Inc.	Chronic, rare genetic connective tissue disorder	0.2	0.6	0.8
 Allergan PLC	 Naurex Inc.	Central nervous system	0.5	0.1	0.6
 <i>Unison Capital Inc.</i>	 Santen Pharmaceutical Co., Ltd. – Anti-rheumatic drug business	Rheumatism			0.4
 <i>Investor group including Suzhou Renhe Huizhi Investment Center LP</i>	 Harbin Shengtai Biological Pharmaceutical Co., Ltd.	Arteriosclerosis			0.4

The deal value of the global top 10
announced deals in Q1-Q3 2015 was

\$176.2 billion

TABLE 2: GLOBAL TOP DEALS ANNOUNCED IN Q1-Q3 2015, YET TO CLOSE

BIDDER	TARGET	THERAPY AREA	DEAL STATUS	TOTAL VALUE ¹
 Teva Pharmaceutical Industries Ltd.	 Mylan N.V.	Generics and specialty, central nervous system and respiratory diseases	Withdrawn	43.0
 Teva Pharmaceutical Industries Ltd.	 Allergan PLC – Generic drug business	Generics (wide range of therapeutic areas)	Pending antitrust approval	40.5
 Mylan N.V.	 Perrigo Company PLC	OTC and generics (wide range of therapeutic areas)	Pending shareholder and antitrust approval	34.1
 Shire PLC	 Baxalta Inc.	Hematology, Immunology, Oncology	Pending shareholder and antitrust approval	30.0
 Endo International PLC	 Salix Pharmaceuticals Inc.	Gastrointestinal disease	Withdrawn	14.6
 Concordia Healthcare Corp.	 Amdipharm Mercury Company Limited	Generics in areas such as endocrinology, ophthalmology, and urology	Pending antitrust approval	3.5
 <i>Investor Group including Ge Li and Ally Bridge Group Capital Partners</i>	 WuXi PharmaTech Inc.	R&D services for pharmaceuticals and biotech	Pending shareholder and antitrust approval	3.2
 Hikma Pharmaceuticals PLC	 Roxane Laboratories Inc. (a part of C.H. Boehringer Sohn AG & Co. KG)	Specialty generics (e.g. oral solids and liquids, topical solutions and nasal sprays)	Pending shareholder and antitrust approval	2.8
 Horizon Pharma PLC	 Depomed Inc.	Pain, central nervous system	Pending shareholder and antitrust approval	2.4
 Allergan Inc.	 KYTHERA Biopharmaceuticals Inc.	Biopharmaceuticals for aesthetics	Completed on 01 October 2015	2.1

¹ All numbers are in US\$ billion Financial investors are italicized Figures in blue are estimated values

Sources: Thomson One, KPMG Analysis

CHEMICALS

The deal value of the global top 10
completed deals in Q3 2015 was

\$7.2 billion





















TABLE 3: GLOBAL TOP DEALS COMPLETED IN Q3 2015

BIDDER	TARGET	BUSINESS AREA	TOTAL VALUE ¹
 Asahi Kasei Corp.	 Polypore International Inc.	Lithium and lead-acid battery separators , OEM membranes, etc.	2.2
 3M Co.	 Polypore International Inc. – Separations Media business	Microporous membranes and modules for filtration	1.0
 Boulevard Acquisition Corp.	 AgroFresh Inc.	Methylcyclopropene technology	0.8
 Brookfield Asset Management Inc.	 GrafTech International Ltd.	Graphite	0.7
 Sinochem Corp.	 Qinghai Salt Lake Industry Co., Ltd. (15%)	Potassium chloride	0.6
 CF Industries Holdings Inc.	 GrowHow UK Ltd. (50%)	Phosphatic fertilizers and related chemicals	0.6
 CVC Capital Partners Sicav – Fis S.A.	 Koninklijke DSM N.V. – Resins and polymer business (Joint Venture)	Resins and polymers	0.5
 Mitsui Chemicals Inc.	 SKC Co., Ltd. – Polyurethane business (Joint Venture)	Polyurethane materials	0.3
 Pacific Ethanol Inc.	 Aventine Renewable Holdings Inc.	Ethanol	0.3
 Ferro Corp.	 Nubiola Pigmentos SL	Inorganic pigments	0.2

The deal value of the global top 10
announced deals in Q1-Q3 2015 was

\$85.7 billion

TABLE 4: GLOBAL TOP DEALS ANNOUNCED IN Q1-Q3 2015, YET TO CLOSE

BIDDER	TARGET	BUSINESS AREA	DEAL STATUS	TOTAL VALUE ¹
 Monsanto Co.	 Syngenta AG	Agriculture and animal biotechnology	Withdrawn	46.0
 Potash Corp. Of Saskatchewan Inc.	 K+S AG	Phosphatic fertilizers	Withdrawn	8.7
 CF Industries Holdings Inc.	 OCI N.V. – North American, European assets, global distribution business	Nitrogen fertilizers	Pending	8.0
 Solvay SA	 Cytec Industries Inc.	Polymers and additives	Pending shareholder and antitrust approval	5.5
 Olin Corp.	 The Dow Chemical Co. – Chlor-Alkali business	Chlor-alkali and derivatives	Completed on 05 October 2015	5.0
 Aramco Overseas Company B.V. (a part of Saudi Aramco)	 Lanxess AG – Synthetic rubber business (Joint Venture)	Synthetic rubber	Pending antitrust approval	3.1
 CHS Inc.	 CF Industries Nitrogen LLC (11%)	Nitrogen fertilizers	Pending shareholder and antitrust approval	2.8
 Dalian Rubber & Plastics Machinery Co., Ltd.	 Jiangsu Hengli Chemical Fibre Co., Ltd.	Chemical fibres	Pending	2.4
 Platform Specialty Products Company	 Alent PLC	Advanced surface treatment plating chemicals	Pending antitrust approval	2.3
 Weihai Huadong Automation Co.	 Jiutai Energy Inner Mongolia Co., Ltd.	Methanol, dimethyl ether, and sulfur	Pending	1.9

¹ All numbers are in US\$ billion Financial investors are italicized Figures in blue are estimated values

Sources: Thomson One, KPMG Analysis

CHEMICALS

In Q3 2015, M&A activity remained at the same level compared to Q2. The US continues to dominate the global top 10 completed deals, followed by China. Consolidation in a weak market environment is the key driver of deal activity with agrochemicals an area of focus this quarter. Hostile attempts fail to succeed.

DEAL FOCUS AREAS

Growth focus drives specialty chemicals deals

The high value specialty segment continues to attract investors for the differentiated and specialized know-how.

A \$5.5 billion deal between Belgium-based Solvay SA and US-based Cytec Industries Inc. strengthens Solvay's presence in the high growth automotive and aerospace composite materials segment. The announced transaction is part of Solvay's portfolio transformation initiative and is preceded by three other acquisitions since 2011.

Germany's Lanxess AG will contribute its synthetic rubber business, the largest worldwide, to a \$3.1 billion joint venture together with Saudi Aramco's Dutch subsidiary Aramco Overseas Company. The deal allows Saudi Aramco to pursue its downstream expansion strategy by investing in world-class high performance and versatile products. Although Saudi Aramco maintains its global leadership in the oil market, the company is suffering from the decline in oil prices. Lanxess, in turn, gains cost-competitive access to raw materials and improves financial stability, thus allowing expansion into sectors less dependent on the automotive sector.

MacDermid Performance Acquisitions Ltd., a unit of Platform Specialty Products Corp., announced the acquisition of UK-based specialty chemicals producer Alent PLC, for \$2.3 billion. The transaction combines complementary product portfolios and geographic footprints and improves Platform's positioning in surface coatings. Annual pre-tax cost synergies of \$50 million over a three-year period are expected.

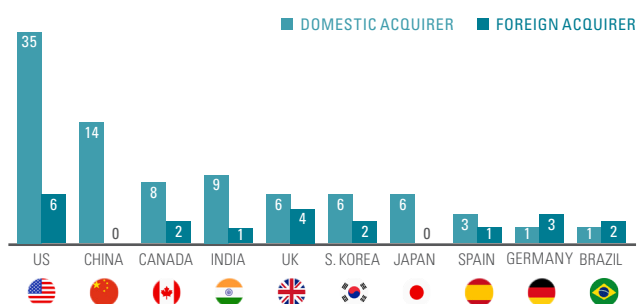
Consolidation in agrochemicals increases

Q3 2015 M&A activity in the agrochemicals sub-sector was strong, led by the nitrogen fertilizer market, the largest nutrient segment. Market consolidation is being driven by the need to increase market share amidst falling nitrogen prices and a fragmented nitrogen fertilizer market (with the largest 20 firms accounting for about one-third of the supply).

CF Industries announced a \$8 billion deal with Netherlands-based nitrogen fertilizer and natural gas chemicals producer, OCI N.V.. Following a \$580 million acquisition of a remaining 50% stake in GrowHow UK Ltd. from Norwegian Yara International ASA, the deal comes less than a year after the failed acquisition of Yara International. The transaction is expected to create the largest publicly traded nitrogen company globally, with a 65% increase in production capacity over the next two years.

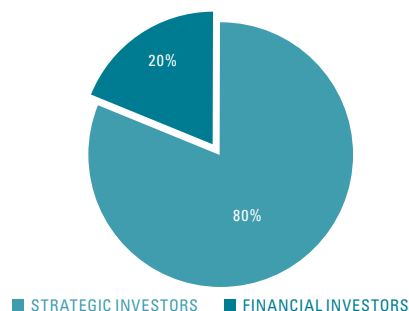
Energy, grains and food company CHS Inc. cancelled its plans for construction of a plant in North Dakota for \$3 billion, to opt for an equity purchase of 11.4% in CF Industries Nitrogen LLC for \$2.8 billion. The venture would provide CHS with access to the fertilizer manufacturing market whilst improving supply chain efficiency. The deal would also support CF Industries by securing sales of 1.7 million tons annually.

FIGURE 8: SELECTED COUNTRIES IN CHEMICAL DEALS IN Q3 2015



Sources: Thomson One, KPMG Analysis

FIGURE 9: NUMBER OF CHEMICAL DEALS BY INVESTOR Q3 2015



Sources: Thomson One, KPMG Analysis

In Q3 2015, The Dow Chemical Co. completed the divestment of its post-harvest specialty chemical business, AgroFresh, for \$1 billion to Boulevard Acquisition Corp.. Dow remains focused on enhancing shareholder returns and reducing debt, while targeting growth opportunities in high-margin businesses. As a result of the transaction, AgroFresh common stock and warrants will be traded on NASDAQ with Dow retaining a non-consolidated minority ownership.

CVR Partners LP will acquire domestic nitrogen fertilizer producer Rentech Nitrogen Partners LP for \$533 million. Upon deal completion, CVR Partners will be the fifth-largest nitrogen producer in North America.

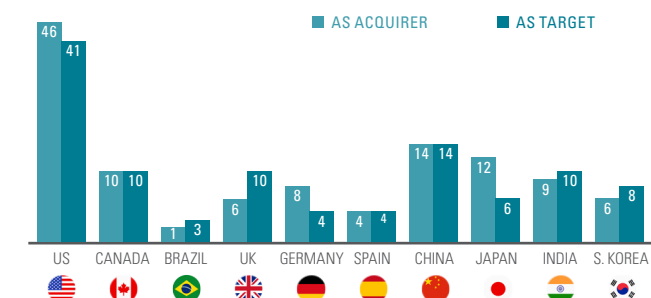
Unsuccessful hostile attempts

North American players seeking to strengthen their market position are aggressively pursuing European assets.

To integrate its seeds business with crop chemicals, Monsanto Co. repeatedly made offers to acquire Swiss crops chemicals specialist, Syngenta AG, with the last offer valued at \$46 billion. Following continual rejections by Syngenta, Monsanto withdrew its bid in Q3 2015. Syngenta now plans to sell its vegetable seeds business. It also plans to buy back shares worth \$2 billion in an effort to lift its share price which declined after Monsanto's bid withdrawal.

K+S AG, a German salt and fertilizer manufacturer, unconvinced of the synergies, rejected twice an \$8.7 billion offer from Canada-based Potash Corp. Saskatchewan. Potash emphasized that they will not close mines or scale back production despite market speculations to the contrary. Potash insisted that the combination of two best-in-class firms with complementary assets would bring diversification for both sides. However, at the time of writing, Potash has withdrawn its offer to negotiate a deal with K+S.

FIGURE 10: TOP COUNTRIES IN CHEMICAL M&A Q3 2015

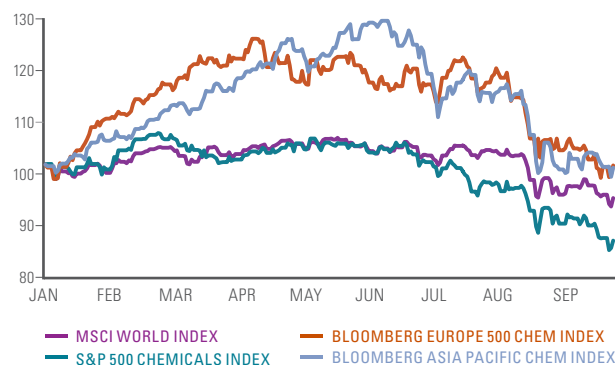


Sources: Thomson One, KPMG Analysis

CAPITAL INDEX

The S&P 500 Chemicals Index underperformed the market in Q3 2015. The Bloomberg Europe 500 Chemicals Index and the Bloomberg Asia Pacific Chemicals Index also declined in Q3 2015.

FIGURE 11: DEVELOPMENT OF CHEMICAL SHARE PRICES Q1-Q3 2015



Sources: Bloomberg, KPMG Analysis

CHINA

M&A activity was locally focused with no active foreign involvement. The largest completed deal in China was Sinochem Corporation acquiring an additional 15% stake in Qinghai Salt Lake Industry Co., Ltd.. The transaction makes Sinochem the second-largest shareholder, maximizing the value and use of the distribution network for Sinochem.

The current market turbulence in China is also driving multiple back-door listings, using mergers and acquisitions as a shortcut for going public. For example, Dalian Rubber Plastics Machinery Co., Ltd. is aiming to complete its strategic business transformation to chemical fibres by acquiring Jiangsu Hengli Chemical Fibre Co., Ltd.. The deal also helps Dalian Rubber Plastics Machinery gain better access to the capital market.

The acquisition of Jiutai Energy Inner Mongolia Co., Ltd. through Weihai Huadong Automation Co., Ltd. enables Weihai Huadong to access equity financing, in addition to the production and sale of chemicals.

BASIS OF DATA PREPARATION

Values and volumes used throughout the report are based on completion date as provided by Thomson Reuters' database Thomson One as of 1 October 2015, and supplemented by additional independent research. This report includes disclosed and undisclosed values for M&A transactions including minority stake purchases, acquisitions of remaining interest, and recapitalizations and it explicitly excludes self-tenders and spinoffs. The published numbers of deals and deal values are based on the analysis of target companies which operate in the following subsectors:

Pharmaceuticals

- Medicinal chemicals & botanical products
- Pharmaceutical preparations
- In vivo and in vivo diagnostic substances
- Biotechnology – biological products, except diagnostic substances
- Pharmaceutical wholesale (added starting in Q2 2014)

Chemicals

- Clay, kaolin, ceramic & refractory minerals
- Chemical and non-metallic mineral mining, except fuels
- Fertilizers and agricultural chemicals
- Industrial gases
- Specialty chemicals
- Chemical wholesale
- Plastics and rubber components

KPMG's Deal Thermometer is based on financial data as provided by S&P Capital IQ of public companies in the same sector as noted above with a market capitalization at quarter end of at least a \$1 billion. For the pharmaceutical sector, this comprises 182 public companies. For the chemical sector, this comprises 174 public companies.

All figures in this report are shown in US Dollars (\$).

Sources

Online databases:

- Thomson One (Thomson Reuters)
- Mergermarket
- S&P Capital IQ
- Bloomberg
- EvaluatePharma

Publications

- Various companies' press releases

www.kpmg.de

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