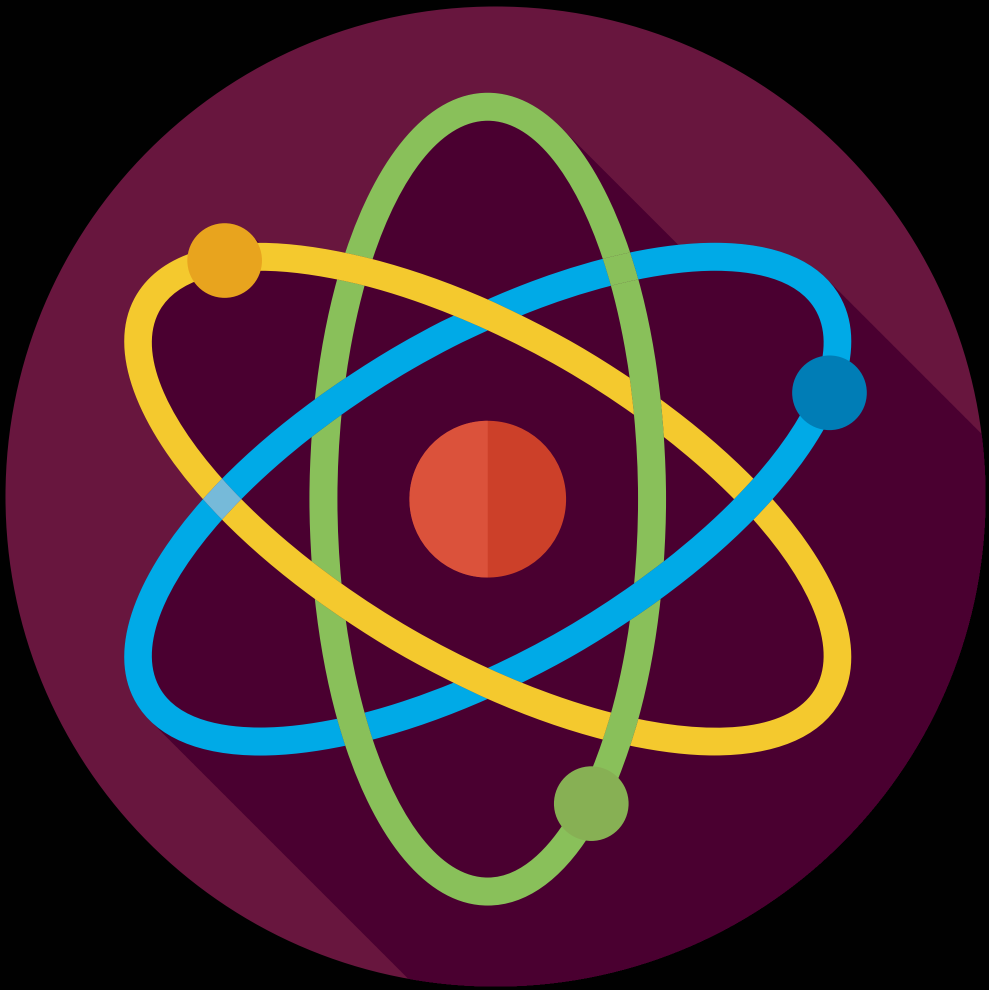


2017 Global chemical industry mergers and acquisitions outlook

Driving forward through global uncertainty

Contents

Global activity

Last year, the Deloitte Touche Tohmatsu (Deloitte Global) *2016 Global chemical industry mergers and acquisitions outlook* predicted that the chemical mergers and acquisitions (M&A) market would likely enjoy another bullish year, in line with the high-levels of M&A activity seen in 2015. These predictions ultimately proved correct and were largely attributed to continued portfolio realignment in the industry, as well as significant M&A activity in the fertilizer and agricultural segment. Transactions such as Bayer Corporation's US$66 billion deal for Monsanto, China National Chemical Co.'s (ChemChina) US$43 billion acquisition of Syngenta AG, and Potash Corporation's US$22 billion merger of equals with Agrium were among last year's agricultural chemical deal highlights. [1]

M&A activity in 2016 supported the Deloitte Development LLC hypothesis that companies would continue to pursue growth with a focus on their core businesses. Deals such as the Sherwin-Williams/Valspar transaction and the trio of agricultural chemicals deals noted above highlighted this trend. [2] This theme was further highlighted in December 2016 when Brazilian conglomerate Vale SA announced the sale of most of its fertilizer assets to Mosaic Company. The US$2.5 billion deal will likely enable Vale to refocus on its core mining operations, while enhancing Mosaic's core strength in phosphate mining and manufacturing. [3]

The Deloitte Global report also asked whether the slowing economies in Brazil and China would impact deal activity in 2016. Uncertainties surrounding Brexit and the US election [4] were also possible sources of a decline in M&A activity.

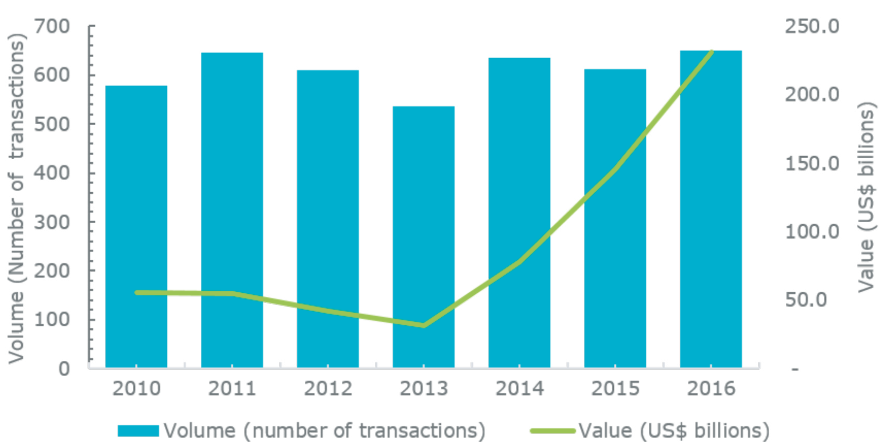
However, deals continued at a robust pace, driven by the need to enhance revenue growth, and supported by liquid, low-cost debt markets.

Chemical M&A activity was strong across segments in 2016. This performance replicated—and often exceeded—the strength of recent years with some large transactions helping set a new record for deal value. Also, private equity re-established its presence in the industry in the form of two large fourth quarter deals: The Carlyle Group's US$3.2 billion acquisition of Atotech and Blackstone's acquisition of Solvay's acetate filter tow business. [5]

What will 2017 hold for chemical M&A markets? Will global activity remain as buoyant as it has been for several years (see Figure 1)? Have mega-deals served to satisfy the need for global consolidation? Have shareholder activists left the industry? Will capital outflow concerns lead to reduced participation by China in global M&A?

These and other questions will be explored in the *2017 Global chemical industry mergers and acquisitions outlook*.

Figure 1: Global chemical merger and acquisition activity (2010 to 2016)



Source: Deloitte Development LLC analysis of data from S&P Capital IQ, January 2017. Data is from January 1, 2010 to December 31, 2016.

Total activity (2010 to 2016)

	2010	2011	2012	2013	2014	2015	2016
Volume (number of transactions)	579	646	609	537	635	612	650
Value (US$ billions)	55.6	55.1	41.8	31.8	77.8	145.8	231.1

Activity over US$1 billion (2010 to 2016)

	2010	2011	2012	2013	2014	2015	2016
Volume (number of transactions)	10	11	11	8	13	16	12
Value (US$ billions)	39.2	36.7	23.8	13.6	52.6	126.3	205.7

Corporate cash—will it continue to build?

Several past Deloitte Global outlooks have focused on the cash amassed on corporate balance sheets. This cash was often viewed as available "dry powder" (cash reserved for future projects) that could support strong M&A activity. This year's outlook focuses not only on cash, but also on capital spending, as a percentage of annual earnings before interest, taxes, and depreciation (EBITDA) and on net debt as a multiple of EBITDA. Figure 2 shows the evolution of the industry's cash, net debt, and capital expenditures (capex). Leverage has been gradually increasing since the last recession in 2009, while corporate cash levels and capital investment activity remained relatively flat. Declining reinvestment needs in a mature chemical industry, coupled with overcapacity, have generated low returns on invested cash and reduced incentive to invest in new capacity.

The incentive for chemical companies to accelerate capital spending for future benefit is likely weak, despite the high availability and affordability of credit over the last several years. However, net debt over EBITDA demonstrates a gradual increase in leverage (perhaps due to acquisitions and stock buybacks), as well as stranded cash at international operations. Looking forward, several factors may impact corporate cash levels, ranging from availability and affordability of credit, to potential changes, such as US cash repatriation policy that may be introduced by the new administration.

In the short-term and through the end of 2017, core strength in the underlying earnings, as well as the accessible equity and debt capital markets, will likely continue to keep corporate cash levels high. The difficulty of predicting the stock market in 2017 means that it may also be difficult to predict if corporate share buybacks will continue. However, acquisitions will likely remain one of the solutions chosen by chemical companies to deploy cash given their return on investment.

Seeking innovation

Many companies are increasingly focusing on innovation as players such as BASF, The Dow Chemical Company (Dow), E.I. DuPont de Nemours (DuPont), Evonik Industries AG (Evonik), and Syngenta are leveraging their corporate venture capital (CVC). The goals for all of these CVCs are likely similar:

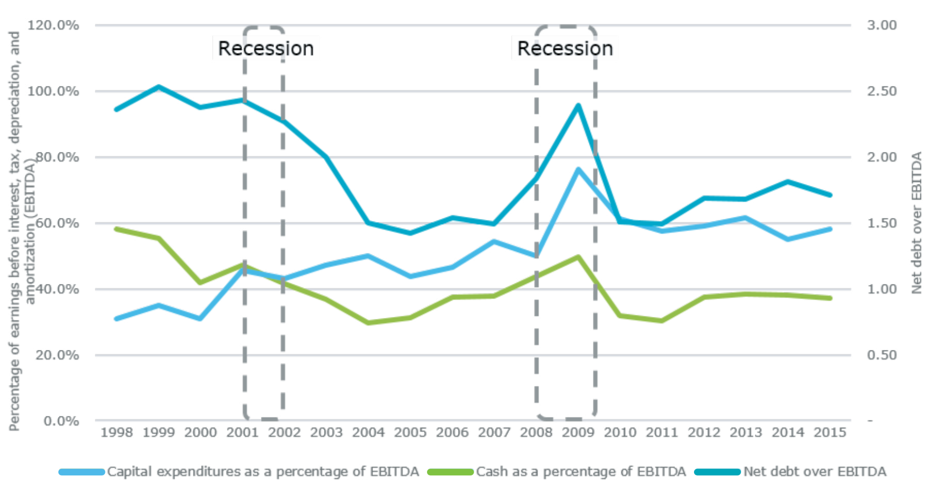
- Invest in innovation areas of current or future focus
- Pursue additional technologies that create new, complementary solutions to innovate for growth
- Solve unmet needs driven by global megatrends, such as sustainability, food, and water shortage, as well as access to new opportunities in the developing countries

Many of the CVCs are small and tend to range from the development stage to mature venture arms of established firms. Commonly they are pursuing future disruptive technologies for mature, highly focused entities with core competencies that may be transferrable across a greater set of needs. While the value and number of these transactions is not often significant, CVC is an investment strategy pursued across many industries, as companies seek to accelerate innovation and spur growth.

Similarly, greater use of digitization may also lead to growth and additional deal flow, as the industry turns to technology to help drive innovation and enhance operational effectiveness. Companies such as Dow and BASF, among others, have leveraged digitization to enhance operations in areas such as forecasting demand, maintenance needs, and automating procedures to gain real-time customer information and improve customer interactions. [6] Monsanto's acquisition of Climate Corporation will give the company technology to provide innovative incremental products to drive growth in complementary businesses. [7]

It is anticipated that 2017 will see continued deal flow around digitalization and innovation, in order to drive additional growth and differentiate acquirers in the marketplace. [8]

Figure 2: Evolution of global cash; net debt; and cash, net debt, and capital expenditures (capex) over time



Source: Deloitte Development LLC analysis of data from S&P Capital IQ, January 2017. Data is from January 1, 1998 to December 31, 2016.

Regulatory intervention—does it hinder or help M&A?

Several deals highlighted in the *2017 Global chemical industry mergers and acquisitions outlook* have yet to be completed, in some cases due to regulatory reasons. Some, such as the Dow/DuPont, ChemChina/Syngenta, and Praxair/Linde Groupe, are awaiting regulatory approval. [9]

The US$11.3 billion Sherwin-Williams/Valspar deal announced in March 2016 has contractual provisions to address antitrust risk. [10] The deal consists of an all cash offer for the equity at US$113 per Valspar share (or US$9.3 billion) and US$2 billion in debt. [11] The merger agreement includes a provision that lowers the transaction price from US$113 per share to US$105 per share (US$8.6 billion), in the event that divestitures are required of businesses totaling more than US$650 million of Valspar's 2015 revenues.[12] However, neither company expects this to occur. On the earnings call on January 26, 2017, Sherwin-Williams confirmed that the business to be divested will be well below US$650 million revenue threshold. [13] Sherwin-Williams would also have the right to terminate the transaction, in the event that required divestitures exceed US$1.5 billion. [14] Sherwin-Williams believes these provisions provide both companies with greater closing certainty. [15]

However, as chemical companies continue to consolidate, there will likely be regulatory dispositions to address geographical or product line overlap, resulting from larger transactions. This may perhaps increase private equity participation in the industry, to manage competition.

Playing to win

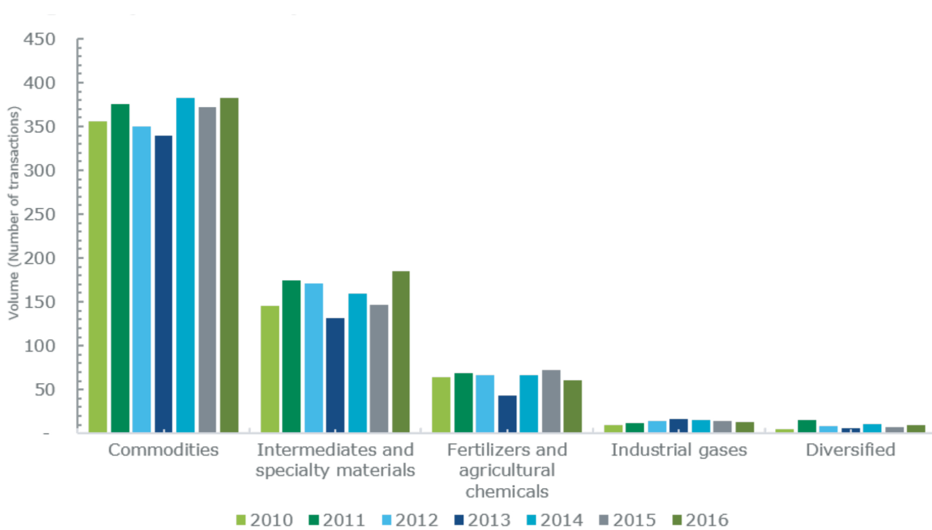
Management of some large chemical M&A players have observed that their deal and integration teams have been exceeding internally forecasted synergies by up to 150 to 200 percent. This is potentially due to an artificially low perspective of the total potential synergies. In this competitive M&A market, this can lead companies to unintentionally bid too low, resulting in elimination from competitive auction processes, missing value-creating opportunities for their shareholders.

More experienced deal leaders are using past experience to close the gap between conservative and realistic synergy estimates. Internal benchmarks from past deals are used to challenge synergy estimates, as well as addressing corporate culture that may contribute to conservative synergy estimates. Some of the drivers weighing towards conservative estimates include rewarding synergy capture that exceeds expectations, while scrutinizing those unable to deliver on targets. Capturing accurate synergies can be a critical and important step to achieving success in a competitive M&A environment.

Mergers and acquisitions activity by chemical segment

In 2016, M&A activity remained strong, as deal volume exceeded the previous year's activity for the largest of the chemical segments (commodities and intermediates/specialty chemicals). At the same time, industrial gases, diversified, and fertilizers and agricultural chemicals segments experienced a slight decline in deal volume (see Figure 3). This section explores the M&A activity in each chemical segment and highlights recent transactions.

Figure 3: Global chemical merger and acquisitions—by target segment (2010 to 2016)



Source: Deloitte Development LLC analysis of data from S&P Capital IQ, January 2017. Data is from January 1, 2010 to December 31, 2016.

Total activity—by target segment (2010 to 2016)

	2010	2011	2012	2013	2014	2015	2016
Commodities	356	376	350	340	383	372	382
Intermediates and specialty materials	145	174	171	132	159	147	185
Fertilizers and agricultural chemicals	64	69	66	43	67	72	61
Industrial gases	9	12	14	16	15	14	13
Diversified	5	15	8	6	11	7	9
Total	**579**	**646**	**609**	**537**	**635**	**612**	**650**

Source: Deloitte Development LLC analysis of data from S&P Capital IQ, January 2017. Data is from January 1, 2010 to December 31, 2016.

Commodity chemicals: Challenging commodity chemical growth can drive mergers and acquisitions activity

From a volume perspective, deal activity among commodities producers remained buoyant in 2016, in line with the elevated levels of the past two years. One deal was Westlake Chemical's acquisition of Axiall Corporation, an all-cash transaction with an enterprise value of US$3.8 billion. [16] This transaction is expected to expand Westlake's raw materials business (with products like ethylene and chlorine) along with finished products. Westlake Chemical seeks to create a larger, more integrated and diverse company, a theme consistent with predictions in the Deloitte Global *2016 Global chemical industry mergers and acquisitions outlook*. [17] That outlook highlighted the importance of scale and efficiency in a depressed pricing environment for commodities. [18]

In 2017, higher levels of cash on corporate balance sheets, low-levels of innovation, and a low-growth macroeconomic outlook will likely boost commodity M&A activity. Portfolio re-balancing will likely drive top line growth above and beyond today's nominal growth rates, while cost synergies should improve margins. Companies such as BASF and DuPont have recently changed their attention from upstream businesses, in order to focus on downstream specialty chemicals and solutions. [19] Others in the industry may follow suit.

Intermediates and specialty materials: Synergies to help drive deals

In the *2016 Global chemical industry mergers and acquisitions outlook*, it was predicted that further core strengthening would continue in the sector, as buyers focused on their core competences to enhance their competitive position and provide more innovative solutions to meet their customers' needs. [20]

The Sherwin-Williams deal discussed above fits this theme. The same can be said for Evonik and its acquisition of the specialty and coating additives business (performance materials division) of Air Products and Chemicals for US$3.8 billion.[21] The two businesses target the same end customers, but with different and complementary products. For instance, Evonik specializes in polyurethane foam stabilizers while the specialty and coating additives business of Air Products focuses on polyurethane foam catalysts. [22]

However, fewer available high-quality assets in the market have likely affected valuations in specialty chemicals, which have continued to rise. As a result, more emphasis could be placed in 2017 not only on the strategic rationale of each transaction, but also its ability to generate a significant cost synergies, a factor typically only seen in larger deals.

Fertilizers and agriculture chemicals: Smaller companies commonly pursue scale

The fertilizer and agricultural chemicals segment has continued to be challenged, as farmers continue to operate in an environment with low agricultural commodity prices and record harvests.[23] As predicted, last year the segment saw significant consolidations and M&A activity (see Figure 3). These deals, which were the largest in the industry last year, [24] focused on cost and R&D synergies. They were also in response to the segment's changing agricultural chemicals landscape created through the Dow/DuPont deal. The Bayer, ChemChina, and Potash acquisitions discussed earlier in this paper combined for nearly US$130 billion in deal value in 2016. [25]

One of the key fertilizer and agricultural chemical deals announced in 2016 was the aforementioned US$66 billion merger between Bayer and Monsanto. [26] A likely driver behind the deal is the pursuit of combined innovation capabilities that could help create long-term value through technology-based agricultural chemicals products. Expected synergy contributions to EBITDA in the deal are approximately US$1.5 billion and possibly more from integrated solutions in future years. [27] Looking forward to 2017, companies in the fertilizer and agricultural segment will likely continue to focus on M&A including acquisitions of the likely regulatory dispositions stemming from the aforementioned mega-deals. This will likely help them quickly broaden their product portfolios they can offer to farmers, while also potentially acquiring R&D capabilities and technology to create long-term revenue growth.

Industrial gases: Mega-deals drive future regulatory divestiture mergers and acquisitions

The Air Liquide/Airgas transaction was in the headlines in late 2015. [28] This transaction combined the competitors' geographic footprint, expanded Air Liquide´s business position downstream and also drove the 2016 M&A activity through regulatory divestiture requirements including the sale of certain assets to gas supplier Matheson.[29] The end of 2016 saw another mega-deal, when Praxair and Linde Groupe announced their US$65 billion merger. [30] Regulatory divestitures have been raised as a potential requirement to approve the deal.

Expansion of geographic footprints to improve growth and margins likely drove other transactions in 2016. One example is Tech Air's acquisition of Liquid Tech. [31] An expanded geographic footprint in the industrial gas segment could allow a company to increase margins by saving on distribution costs while also generating top-line growth in a tepid market. In 2017, the trend of consolidation will likely continue and is expected to see more deals arise from the divestiture requirements related to mega-mergers.

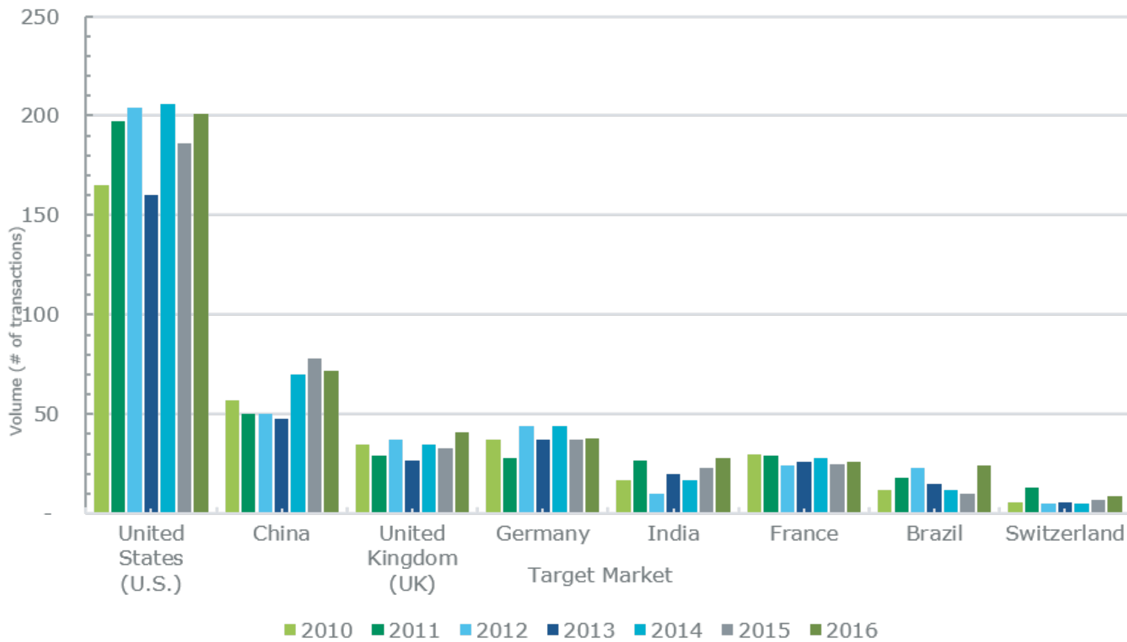
The specialty gas segment also factored into 2016 transactions. SK Materials purchase of Airgas SKC provided more opportunities for growth in both industrial and medical gas.[32] Praxair has also announced acquisitions involving medical gas players. [33] In 2017, the priority for specialty gas companies will likely be to pursue end markets, such as healthcare, that are less affected by changing energy prices.

Diversified: Focus on expanding technological capabilities via mergers and acquisitions

The deal volume for diversified chemicals in 2016 did not fluctuate much from past years. In the 2*016 Global chemical industry mergers and acquisitions outlook*, it was predicted that 2016 would not see another mega deal in the segment, which proved to be correct. [34] Several transactions in this space were motivated by gaining access to technological capabilities including Diana Food's acquisition of Nutra Canada, and Brenntag's acquisition of ACU Pharma und Chemie GmBH. [35] In each transaction, the buyers gained access to either specific technological processes or other intellectual property. The trend to pursue companies for their different technologies is expected to continue in 2017.

Chemical mergers and acquisitions activity in key geographies

Figure 4: Global chemical merger and acquisitions activity—by target market (2010 to 2016)



Total activity—by target market (2010 to 2016)

	2010	2011	2012	2013	2014	2015	2016
United States (U.S.)	165	197	204	160	206	186	201
China	57	50	50	48	70	78	72
United Kingdom (UK)	35	29	37	27	35	33	41
Germany	37	28	44	37	44	37	38
India	17	27	10	20	17	23	28
France	30	29	24	26	28	25	26
Brazil	12	18	23	15	12	10	24
Switzerland	6	13	5	6	5	7	9
Other	220	255	212	198	218	213	211
Total	**579**	**646**	**609**	**537**	**635**	**612**	**650**

Source: Deloitte Development LLC analysis of data from S&P Capital IQ, January 2017.
Data is from January 1, 2010 to December 31, 2016.

United States: Potential weak organic growth may drive mergers and acquisitions activity

As seen in Figure 4, the volume of M&A activity in the US increased nearly 8 percent in 2016, yet the value declined 14 percent. This is a situation driven by fewer blockbuster deals, than in 2015.
Moving into 2017, many deal-makers remain optimistic about the level of transactions in the US. With a shift in the competitive environment resulting from mega deals (particularly in the fertilizer and agricultural chemicals segment), many chemicals companies are refocusing, merging, or spinning off assets to achieve cost savings, realize economies of scale, and pursue new growth opportunities. Compounding this competitive dynamic are often tepid organic growth rates and slowing productivity gains, making acquisitions an attractive means to supplement growth and enhance competitive positioning. The flip-side of this picture is increased competition scrutiny, which can jeopardize the timing and final execution of large transactions as required divestitures must be addressed.

Cross-border activity in the US remained strong in 2016 and helped to drive robust valuation multiples across numerous sectors, despite a consistently strong US dollar. [36] Further appreciation of the US dollar could deter some foreign buyers headed into 2017. Nevertheless, buoyant activity in the 2017 US M&A market is anticipated.

China: Inbound mergers and acquisitions likely to increase in 2017

As forecasted last year, fertilizer and agricultural chemicals were a key target sector for deals. [37] ChemChina's acquisition of Swiss-based Syngenta, still subject to approval in various jurisdictions, has had strong coverage in the media. [38]
The Chinese M&A market is still largely dominated by domestic buyers as only a minor portion of M&A activity is attributable to foreign buyers.

The M&A outlook in China for 2017 is likely impacted by several recent regulatory developments and strategic sector trends. Chinese corporate buyers will likely continue their strategic acquisitions overseas in 2017, though with less intensity than in 2016. This is likely due to the recent announcements by the Chinese government to place special scrutiny on Chinese buyers making overseas acquisitions. The regulation is intended to curb the significant levels of capital outflow from China. That said, the impact on corporate acquirers likely will not be significant, as long as their deals serve the overall goals of the Chinese National Reform and Development Commission (NDRC).
Still, China's goal of increased productivity in the fertilizer and agricultural chemicals segment (while increasing food safety) remains a driving force for outbound deals. Furthermore, many Chinese companies are moving up the value chain of specialty chemicals in order to be less dependent on foreign suppliers. This is helping drive Chinese purchases of foreign assets who have the unique technology needed to develop global products.

Despite an increasingly challenging regulatory environment for foreign buyers, China inbound M&A will likely increase in 2017. Several trends are likely to drive inbound deals, including the tax cost of imported chemicals and strong demand from end-market customers of chemical products (e.g. automotive, pharmaceuticals, and construction). As a result, buyers may be more aggressive. As the country continues to be a strategic growth market for foreign players, the abilities to produce goods in China and access its markets are likely to spur M&A activity for international buyers.

As a likely result of capacity expansion during China's economic boom, corporate debt levels have been on the rise. These companies are now challenged by low utilization, as China's economy matures, growth rates slow, and margins decline. [39]
Using the local initial public offering market to either exit or access growth capital, may no longer be the promising option it was in the past. Thus, selling to a foreign corporation may now be a more attractive option. It is expected mostly corporate acquirers, rather than private equity will be big players in China's chemical M&A picture.

United Kingdom: Sterling weakness to attract foreign buyers

Even with the Brexit vote and the associated uncertainty, chemical M&A activity in the UK has remained high. The post-vote decline in the British pound sterling may have provided an added incentive for foreign buyers looking at potential UK targets.

Deal flow has been characterized by a number of trends including small-to-medium-sized UK chemical companies being bought by foreign acquirers looking to purchase niche technologies (the US/UK corridor being a particularly active channel). Another key M&A theme in 2016 has been private company buy-outs backed by a variety of specialized investors. Some participants are using M&A to develop their portfolio offerings (e.g. Johnson Matthey buying MIOX and Finex, Synthomer acquiring Hexion's Performance Adhesives and Coatings division), reflecting another growing trend. [40] Lastly, a number of UK chemical companies have been disposing non-core businesses, highlighting another key trend in 2016 chemical M&A activity.

Looking forward, the UK will likely continue to be an attractive market for both strategic and financial buyers, with the small- to mid-cap markets expected to see the most activity.

Germany: Mergers and acquisitions activity likely to continue at a high level

Many German chemical companies continue to focus on small to medium-sized acquisitions to extend their value chains or complement technologies. This approach has been employed to strengthen the core of their businesses or to expand into adjacent areas. Examples of this approach include the acquisition of Chemetall by BASF Coatings, the Specialty & Coating Additives business of Air Products by Evonik, and the acquisition of Chemtura by LANXESS. [41]

The Bayer/Monsanto and Linde Groupe/Praxair deals of 2016 were the first mega-mergers with direct German involvement.[42] The Bayer/Monsanto deal is another example of the current reshaping of the global agricultural chemicals segment. [43] It remains to be seen how other companies will react and realign their M&A strategies, although it seems likely that M&A will continue in this segment. [44] Also, after a few years of announced discussions, Linde Groupe and Praxair finally were able to come to terms, settling on a deal that will create the global industrial gas segment's largest player. [45]

In addition to more strategically driven activity, many smaller divestitures, due to portfolio optimizations, are continuing. Often, these divestitures have been the target of private equity investors. Looking forward, M&A activity will likely continue at current high levels, with German companies mostly expected to be buyers rather than net sellers.

India: Vibrant chemical mergers and acquisitions activity expected in second half of 2017, due in part to strong economic growth

A number of multinational corporations are focusing on India as a manufacturing hub. Lower cost of labor, availability of key raw materials, large consumer markets, and adaptability to technology are some of the main attractions for having a strong manufacturing base in India.

Many recent inbound M&A trends in India have focused on increasing market share, brand acquisition, and leveraging distribution. Outbound M&A activity has often been motivated by brand/product access in foreign markets, marketing connections, and access to technology. With a strong monsoon season in 2016, fertilizer and agricultural chemicals companies may perform well in 2017, benefiting from technology investments made to drive long-term growth. Many specialty chemicals companies are enjoying higher demand, based on increased consumption and the evolving consumer preferences.

India is likely expected to experience an upswing in economic activity, based on a number of reforms introduced by the government over the last several years. India is the fastest growing emerging market and developing economy in the world with gross domestic product (GDP) growth forecast of 7.7 percent in both 2017 and 2018. [46] The chemical industry in India is the third largest producer in Asia and sixth largest in the world. [47] It is likely that India will double its share of the global chemical industry by 2021, while anticipating growth of 8 to 9 percent in the next decade. [48]

Government initiatives including recent demonetization intended to lower interest costs and other major reforms, such as goods and services tax, will likely help the Indian economy's growth in 2017. These trends may drive an already active M&A market in the Indian chemical industry in 2017.

Brazil: Stabilizing macroeconomic environment to help drive future mergers and acquisitions activity

While Brazil's economy is slowly recovering, the political environment remains uncertain. Currency devaluation has helped create a favorable scenario for foreign investment, helping to increase M&A activity as asset prices have declined.

Brazil's currency has weakened over the past few years, though current projections show the currency stabilizing at levels to support inbound M&A activity. [49] In addition, both real interest and inflation rates steadily increased from 2010 to 2016. [50] In this economic scenario, foreign investments experienced strong growth including 25 percent annual growth in direct investment inflows during the period from 2009 to 2014. [51]

There are still several uncertainties hovering over the Brazilian economy. First, the political picture remains very uncertain. Also, the Brazilian Central Bank has reduced an already weak GDP annual growth forecast from 0.98 percent for 2017 to 0.80 percent. [52] M&A activity in the Brazilian chemical market is still depressed, although recovering steadily after a steep decline from 2011 to 2015 (see Figure 4). [53] In 2016, the 24 deals more than doubled the deal volume of the previous year. [54]

As the Brazilian economy continues to recover and stabilize in 2017, it is anticipated that more foreign companies will likely invest in the country. This may help support stronger chemical M&A deal activity focused on fine chemicals, advanced polymers, and adhesive and sealants, as these sectors still have room for market consolidation and portfolio expansion.

Switzerland: Mergers and acquisition activity likely to remain strong

M&A activity in the Swiss chemicals industry was strong in 2016. The total deal value was primarily driven by ChemChina's announced deal with Syngenta, as well as other deals primarily focused on small to mid-sized transactions. [55]

Swiss chemical businesses can be attractive targets for international and domestic buyers who want to grow market share, fill technology gaps, or diversify portfolios. ChemChina's bid for Syngenta is indicative not only of this trend but also the trend of consolidation in the fertilizer and agricultural chemicals segment. [56] Domestic transactions focused on the plastics, paints, and coatings segments including SFS Group's acquisition of Stamm AG, and AFG Arbonia-Forster's announced merger with Looser Holding AG. [57] Clariant also advanced its bolt-on acquisition strategy with the addition of Kel-Tech and X-Chem to its oilfield production chemicals business, adding approximately US$200 million of sales, as well as technology and expertise to its North American operations. [58]

Despite some degree of political and economic uncertainties, which have somewhat slowed investment activities in the second half of 2016, it is anticipated that 2017 inbound and outbound M&A activity will likely remain strong in Switzerland. This activity will likely be driven by global consolidation trends and the attractiveness of Swiss chemical companies.

France: Portfolio realignment to help drive mergers and acquisitions activity

In 2016, M&A activity in France remained robust with volume levels echoing those achieved in 2015. Transactions were primarily driven by corporate acquirers and, to a lesser extent, private equity firms. The vast majority of the transactions were acquisitions of small and midcap targets.

In 2017, the French chemical industry M&A should remain active as the industry is expected to gain momentum and as private equity firms continue to optimize their portfolios. Along with corporate acquirers, private equity firms may continue to show interest in this sector, as it has been historically known for its cash generating ability. Lastly, there were several announcements by chemical companies in late 2016 hinting at portfolio realignment including asset reviews, portfolio reshaping, and bolt-on acquisitions. A few large carve-out transactions, which private equity firms may show a keen interest in, are likely to launch in early 2017.

Africa: Fertilizer and agricultural chemicals segment and access to market to likely impact merger and acquisition activity

In 2017, M&A activity in the African chemical sector will likely remain influenced by both global and local factors including market consolidation, investment into fertilizer and agricultural chemicals and access to market.

Mimicking global consolidation trends, this same strategy is likely to occur in Africa, as competitors look to combine supply chains, extract operational synergies, and purchase market share for enhanced scale. The current challenges in Africa including a growing population, political instability, sluggish economies, and drought conditions, help to validate the importance of driving fertilizer and agriculture chemicals as a high impact segment.

Many African governments have increased national budget allocations towards fertilizer and agricultural chemicals subsidization. Additionally, many governments are partnering with foreign investors to help build local blending or manufacturing capacity specifically for ammonia, urea, and ammonium nitrate (the inputs into fertilizer products). Companies providing specialty chemicals for fertilizers and agriculture are likely to be attractive investments in the year to come, as the requirements to procure, locally manufacture, and distribute chemicals for primary agriculture are increasing. This growth is expected to drive the demand for agriculture processing and food value chain chemicals, which are targets for M&A activity in Africa.

With the aim of increasing production and trade, the Continental Free Trade Area (CFTA) has an expected launch date in 2017.[59] This program supports the creation of a single continental market for goods and services with free movement of business persons and investments. It is anticipated that manufacturers and distributors would likely seek benefit, by establishing operations in several African countries, should duties be lowered and incentives introduced. This could lead to significant development in the chemical industry.

The opportunities and future growth potential in Africa are evident and those with the necessary investment risk profile will likely have the first mover advantage. Government, private, and developmental funding will likely continue to invest according to mandate specifications. These investments will likely be allocated across greenfields, brownfields, and established businesses and will likely drive M&A activity for the near future.

Summary outlook for 2017 mergers and acquisitions activity

The global chemical industry has experienced several years of strong M&A activity, as companies pursued growth, realigned their portfolios, and focused on core competencies. Mega deals have become the norm with 41 deals valued over US$1 billion over the past three years, as compared to 30 deals between 2011 and 2013. Though valuations have soared, many companies continue to pursue M&A as a strategy to achieve growth and spur innovation. These companies are relying on new sales through innovation and strong synergy capture to help mitigate the higher cost of deals.

Significant availability of affordable credit has helped support the current market's lofty valuations. Private equity, still a marginal player in the industry, continues to have increased capital to deploy and could play a greater role going forward as global economic conditions strengthen. Among major geopolitical factors, protectionism has emerged as a challenge to robust M&A activity in 2017. As China's regulations increase over capital outflows and the US faces concerns about heightened insularity, these two large markets may disrupt historical deal activity.

Questions abound: Have consolidation and portfolio realignment achieved their goals for the industry? Are there enough strong companies available to supply the M&A market? Will increasing interest rates begin to impact deal activity? Have valuations driven acquirers out of the market? These questions and others like them will be answered in due course in the global chemicals industry.

Contacts

Global

Dan Schweller
Global M&A Leader
Chemicals & Specialty Materials Sector
Deloitte & Touche LLP
Email: dschweller@deloitte.com
Tel: +1 312 486 2783

Dr. Wolfgang Falter
Global Chemicals & Specialty Materials Sector Leader
Deloitte Touche Tohmatsu Limited
Email: wfalter@deloitte.de
Tel: +49 (0)211 8772 4912

USA

Duane Dickson
Vice Chairman, US Chemicals & Specialty Materials Sector Leader
Deloitte Consulting LLP
Email: rdickson@deloitte.com
Tel: +1 203 905 2633

Philip Hueber
Partner
Deloitte & Touche LLP
Email: phueber@deloitte.com
Tel: +1 312 486 5791

Will Frame
Principal
Deloitte Corporate Finance LLC
Email: wframe@deloitte.com
Tel: +1 312 486 4458

Brazil

Marcio Braga Andrade
Director
Deloitte Brazil
Email: marcioandrade@deloitte.com
Tel: +55 11 5186 1828

China

Mike Braun
Partner
Deloitte China
Email: mibraun@deloitte.com.cn
Tel: +86 21 61411605

Germany

Joerg Niemeyer
Partner
Deloitte Germany
Email: jniemeyer@deloitte.de
Tel: +4921187723668

Thomas Neubauer
Senior Manager
Deloitte Germany
Email: tneubauer@deloitte.de
Tel: +4940320804871

India

Savan Godiawala
Senior Director, Corporate Finance
Deloitte India
Email: sgodiawala@deloitte.com
Tel: +91 79 6607 3200

Switzerland

Konstantin von Radowitz
Partner
Deloitte Switzerland
Email: kvonradowitz@deloitte.ch
Tel: +41 58 279 6457

UK

Mark J. Adams
Partner, Corporate Finance
Deloitte United Kingdom
Email: mjadams@deloitte.co.uk
Tel: +44 207 007 3624

Ross James
Partner, Corporate Finance
Deloitte United Kingdom
Email: rossjames@deloitte.co.uk
Tel: +44 207 007 8192

Endnotes

1 Bayer Corporation, "Monsanto Shareowners Approve Merger with Bayer," December 13, 2016, http://www.press.bayer.com/baynews/baynews.nsf/id/Monsanto-Shareowners-Approve-Merger-with-Bayer; BBN, "Bayer hikes Monsanto bid to US$65 billion as talks enter final stretch," September 6, 2016, http://www.bnn.ca/bayer-hikes-monsanto-bid-says-it-s-prepared-to-offer-more-than-us-65-billion-1.561577; Reuters, "Exclusive: ChemChina's Syngenta acquisition close to clearing U.S. review – sources," August 22, 2016, http://www.reuters.com/article/us-syngenta-m-a-chemchina-exclusive-idUSKCN10X038; and Potash Corp, "Agrium and PotashCorp to Combine in Merger of Equals to Create a World-Class Integrated Global Supplier of Crop Inputs," September 12, 2016, http://www.potashcorp.com/news/2192/.

2 Sherwin-Williams, website dedicated to the merger, accessed on March 1, 2017, http://www.sherwin-williamsvalspar.com/. Refer to the other agriculture deals included in footnote one including Bayer/Monsanto, ChemChina/Syngenta, and Potash Corporation/Agrium.

3 Mosaic Company, "The Mosaic Company To Acquire Vale Fertilizantes For $2.5 Billion," December 19, 2016, http://investors.mosaicco.com/file.aspx?IID=4097833&FID=37177171.

4 The New York Times, "Britain Votes to Leave E.U.; Cameron Plans to Step Down," June 23, 2016, https://www.nytimes.com/2016/06/25/world/europe/britain-brexit-european-union-referendum.html?_r=0; The Washington Post, "Donald Trump wins the presidency in stunning upset over Clinton," November 9, 2016, https://www.washingtonpost.com/politics/election-day-an-acrimonious-race-reaches-its-end-point/2016/11/08/32b96c72-a557-11e6-ba59-a7d93165c6d4_story.html?utm_term=.a61a254bd6d6.

5 The Carlyle Group, "Total Announces the Sale of its Specialty Chemicals' Affiliate Atotech to The Carlyle Group for $3.2 billion," October 7, 2016, https://www.carlyle.com/media-room/news-release-archive/total-announces-sale-its-specialty-chemicals%E2%80%99-affiliate-atotech; and Blackstone, "Blackstone to buy Acetow," December 7, 2016, https://www.blackstone.com/media/press-releases/blackstone-to-buy-acetow.

6 Deloitte Touche Tohmatsu Limited Global Consumer & Industrial Products Industry group, *Digital Transformation: Are chemical enterprises ready?*, February 2, 2017, www.deloitte.com/digitalchemistry.

7 Monsanto, "Monsanto to Acquire The Climate Corporation, Combination to Provide Farmers with Broad Suite of Tools Offering Greater On-Farm Insights," October 2, 2013, http://news.monsanto.com/press-release/corporate/monsanto-acquire-climate-corporation-combination-provide-farmers-broad-suite.

8 Deloitte Touche Tohmatsu Limited Global Consumer & Industrial Products Industry group, *Digital Transformation: Are chemical enterprises ready?*, February 2, 2017, www.deloitte.com/digitalchemistry.

9 The Dow Chemical Company, "DuPont and Dow to Combine in Merger of Equals," accessed on March 1, 2017, http://www.dow.com/en-us/news/press-releases/dupont-and-dow-to-combine-in-merger-of-equals; and Reuters, "Exclusive: ChemChina's Syngenta acquisition close to clearing U.S. review – sources," August 22, 2016, http://www.reuters.com/article/us-syngenta-m-a-chemchina-exclusive-idUSKCN10X038.

10 Sherwin-Williams, website dedicated to the merger, accessed on March 1, 2017, http://www.sherwin-williamsvalspar.com/.

11 Sherwin-Williams, "The Sherwin-Williams Company to acquire Valspar for $113.00 per share in case or $11.3 billion," March 20, 2016, http://investors.sherwin-williams.com/press/2016/0320_PR/index.jsp.

12 Ibid.

13 Sherwin-Williams, "Q4 2016 Sherwin-Williams Co Earnings Call," accessed in March 2017.

14 Ibid.

15 Ibid.

16 Axiall, "Westlake Chemical Completes Acquisition of Axiall Corporation," August 31, 2016, http://www.axiall.com/News/.

17 Deloitte Touche Tohmatsu Limited Global Consumer & Industrial Products Industry group, *2016 Global chemical industry mergers and acquisitions outlook*, 28 January 2016, https://www2.deloitte.com/us/en/pages/manufacturing/articles/global-chemical-industry-m-and-a-outlook.html.

18 Ibid.

19 News release, "BASF to acquire global surface treatment provider Chemetall, June 17, 2016," https://www.basf.com/documents/corp/en/investor-relations/basf-at-a-glance/strategy/portfolio-optimization/press-releases/P_16-253_BASF_to_acquire_Chemetall.pdf.

20 Deloitte Touche Tohmatsu Limited Global Consumer & Industrial Products Industry group, *2016 Global chemical industry mergers and acquisitions outlook*, 28 January 2016, https://www2.deloitte.com/us/en/pages/manufacturing/articles/global-chemical-industry-m-and-a-outlook.html.

21 Evonik, "Evonik acquires Specialty & Coating Additives business of Air Products," May 6, 2016, http://corporate.evonik.com/en/media/press_releases/pages/news-details.aspx?newsid=59237.

22 http://corporate.evonik.com/en/media/press_releases/pages/news-details.aspx?newsid=59237
23 Wallowa County, "Farmers look ahead to a year of unknowns," January 2, 2017, http://www.wallowa.com/local_news/20170102/farmers-look-ahead-to-a-year-of-unknowns.
24 The Dow Chemical Company, "DuPont and Dow to Combine in Merger of Equals," accessed on March 1, 2017, http://www.dow.com/en-us/news/press-releases/dupont-and-dow-to-combine-in-merger-of-equals.
25 Bayer Corporation, "Monsanto Shareowners Approve Merger with Bayer," December 13, 2016, http://www.press.bayer.com/baynews/baynews.nsf/id/Monsanto-Shareowners-Approve-Merger-with-Bayer; BBN, "Bayer hikes Monsanto bid to US$65 billion as talks enter final stretch," September 6, 2016, http://www.bnn.ca/bayer-hikes-monsanto-bid-says-it-s-prepared-to-offer-more-than-us-65-billion-1.561577; Reuters, "Exclusive: ChemChina's Syngenta acquisition close to clearing U.S. review – sources," August 22, 2016, http://www.reuters.com/article/us-syngenta-m-a-chemchina-exclusive-idUSKCN10X038; and Potash Corp, "Agrium and PotashCorp to Combine in Merger of Equals to Create a World-Class Integrated Global Supplier of Crop Inputs," September 12, 2016, http://www.potashcorp.com/news/2192/.
26 Bayer Corporation, "Monsanto Shareowners Approve Merger with Bayer," December 13, 2016, http://www.press.bayer.com/baynews/baynews.nsf/id/Monsanto-Shareowners-Approve-Merger-with-Bayer.
27 Bayer Corporation, "Bayer and Monsanto to Create a Global Leader in Agriculture," September 14, 2016, http://www.press.bayer.com/baynews/baynews.nsf/id/ADSF8F-Bayer-and-Monsanto-to-Create-a-Global-Leader-in-Agriculture.
28 Airgas. "Air Liquide announces agreement to acquire Airgas," November 17, 2015 https://www.airgas.com/medias/2015-11-17-Press-Release-Air-Liquide-Announces-Agreement-to-Acquire-Airgas.
29 Air Liquide, "Air Liquide announces divestiture of U.S. assets to Matheson Tri-Gas in connection with Airgas acquisition," June 24, 2016, https://www.airliquide.com/media/air-liquide-announces-divestiture-us-assets-matheson-tri-gas-connection-airgas-acquisition.
30 Praxair, "Linde and Praxair Announce Intention to Merge," December 20, 2016, http://www.praxair.com/news/2016/linde-and-praxair-announce-intention-to-merge.
31 Tech Air, "Tech Air Announces Acquisition of Gases & Arc Supply, Inc., January 31, 2017, http://www.techair.com/About_Tech_Air/News.html.
32 Reuters, "SK Materials to acquire 80 pct of SKC Airgas," March 31, 2016, http://www.reuters.com/finance/stocks/036490.KQ/key-developments/article/3351510.
33 Praxair, "Linde and Praxair Announce Intention to Merge," December 20, 2016, http://www.praxair.com/news/2016/linde-and-praxair-announce-intention-to-merge.
34 Deloitte Touche Tohmatsu Limited, *2015 Global chemical industry mergers and acquisitions outlook*, January 29, 2015, https://www2.deloitte.com/be/en/pages/manufacturing/articles/global-chemical-industry-m-and-a-outlook.html.
35 Food Ingredients First, "Diana Food Acquires Nutra Canada, Strengthens Position in Fruit & Vegetable Extracts," May 20, 2016, http://www.foodingredientsfirst.com/news/Diana-Food-Acquires-Nutra-Canada-Strengthens-Position-in-Fruit-Vegetable-Extracts.html; and Brenntag, "Brenntag expands its value-added service offering by acquiring ACU PHARMA und CHEMIE group," March 4, 2016, http://www.brenntag.com/corporate/en/about-brenntag/media/news/brenntag-expands-its-value-added-service-offering-by-acquiring-acu-pharma-und-chemie-group.jsp.
36 Deloitte Development LLC analysis of data from S&P Capital IQ, January 2017. Data is from January 1, 2010 to December 31, 2016.
37 Deloitte Touche Tohmatsu Limited Global Consumer & Industrial Products Industry group, *2016 Global chemical industry mergers and acquisitions outlook*, January 28, 2016, https://www2.deloitte.com/us/en/pages/manufacturing/articles/global-chemical-industry-m-and-a-outlook.html.
38 Reuters, "Exclusive: ChemChina's Syngenta acquisition close to clearing U.S. review – sources," August 22, 2016, http://www.reuters.com/article/us-syngenta-m-a-chemchina-exclusive-idUSKCN10X038.
39 Deloitte Development LLP observation of local companies in China, March 2, 2017.
40 Chemical Processing, "Miox Acquisition Rounds Out Johnson Matthey Water Purification Business," June 16, 2016, http://www.chemicalprocessing.com/industrynews/2016/miox-acquisition-rounds-out-johnson-matthey-water-purification-business/; Global Water Intel, "The back-to-back purchases of MIOX and Finex have reinforced Johnson Matthey's ambitions of building a water chemistry platform. Is it late to the game?," July 2016, https://www.globalwaterintel.com/global-water-intelligence-magazine/17/7/general/johnson-matthey-s-nascent-water-division-seeks-to-build-scale-through-acquisition; and Syntomer, "Acquisition of Hexion's Performance Adhesives and Coatings," accessed on March 2, 2017, http://www.synthomer.com/fileadmin/content_investor/2016/Acquisition_of_Hexion_PAC_presentation.pdf.

41 BASF, "BASF to acquire global surface treatment provider Chemetall," June 17, 2016, https://www.basf.com/en/company/news-and-media/news-releases/2016/06/p-16-253.html; Evonik, "Evonik acquires Specialty & Coating Additives business of Air Products," May 6, 2016, http://corporate.evonik.com/en/media/press_releases/pages/news-details.aspx?newsid=59237; and LANXESS, "LANXESS Announces Plan to Acquire Chemtura," September 26, 2016, http://lanxess.com/en/corporate/media/press-kits/lanxess-announces-plan-to-acquire-chemtura/.
42 Bayer Corporation, "Monsanto Shareowners Approve Merger with Bayer," December 13, 2016, http://www.press.bayer.com/baynews/baynews.nsf/id/Monsanto-Shareowners-Approve-Merger-with-Bayer; BBN, "Bayer hikes Monsanto bid to US$65 billion as talks enter final stretch," September 6, 2016, http://www.bnn.ca/bayer-hikes-monsanto-bid-says-it-s-prepared-to-offer-more-than-us-65-billion-1.561577; and Praxair, "Linde and Praxair Announce Intention to Merge," December 20, 2016, http://www.praxair.com/news/2016/linde-and-praxair-announce-intention-to-merge.
43 Ibid.
44 Ibid.
45 Ibid.
46 The World Bank, *Global Economic Prospects: Weak Investment in Uncertain Times*, January 2017, http://www.worldbank.org/en/publication/global-economic-prospects.
47 India Brand Equity Foundation, "Indian Chemicals and Electronics Industry Analysis," February 2017, http://www.ibef.org/industry/chemicals-presentation.
48 IndiaChem, "9th Biennial International Conference and Exhibition Conference," September 1 to 3, 2016," conference brochure, accessed in March 2017, http://www.mzv.cz/file/1989359/indiachem2016brochure.pdf.
49 Deloitte Development LLC analysis of data from S&P Capital IQ, January 2017. Data is from January 1, 2010 to December 31, 2016.
50 Itau BBA, "Brazil Scenario Review," January 20, 2017, https://www.itau.com.br/itaubba-en/economic-analysis/publications/brazil-scenario-review/falling-inflation-brings-forward-the-cycle-of-interest-rate-cuts.
51 World Bank, "Foreign direct investment, net inflows (% of GDP)," accessed in March 2017, http://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS?locations=BR.
52 Brazilian Central Bank, "Boletim Focus," Accessed on December 6, 2016.
53 Deloitte Development LLC analysis of data from S&P Capital IQ, January 2017. Data is from January 1, 2010 to December 31, 2016.
54 Ibid.
55 Reuters, "Exclusive: ChemChina's Syngenta acquisition close to clearing U.S. review – sources," August 22, 2016, http://www.reuters.com/article/us-syngenta-m-a-chemchina-exclusive-idUSKCN10X038
56 Ibid.
57 Switzerland Global Enterprise, "SFS acquires Stamm AG," February 16, 2016, http://www.s-ge.com/global/invest/en/blog/sfs-acquires-stamm-ag; and 4-Traders, "Looser: AFG and Looser aim to combine operations to become a leading European building supplier," September 15, 2016, http://www.4-traders.com/LOOSER-HOLDING-AG-191325/news/Looser-AFG-and-Looser-aim-to-combine-operations-to-become-a-leading-European-building-supplier-23056898/.
58 Clariant, "Clariant strengthens its North American oilfield production chemicals business with two acquisitions," accessed in March 2017, https://www.clariant.com/en/Corporate/News/2016/09/Clariant-strengthens-its-North-American-oilfield-production-chemicals-business-with-two-acquisitions.
59 United Nations, "African Continental Free Trade Area: Advancing Pan-African Integration. Some Considerations," March 2017, http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=1658.

Acknowledgments

The following are recognized for their strong contributions to this outlook including Dejan Avramovic with Deloitte & Touche LLP; Jim Guill and John Forster, both with Deloitte Services LP; Jia Ming Lee, Deloitte China; Rebone Mofulatsi and Adheesh Ori, both with Deloitte South Africa; Thomas Frankum, Deloitte UK; and Christoph Sohn, Deloitte Germany. Also, special thanks to Jennifer McHugh, Deloitte Services LP.

Deloitte.