

Whitepaper

Building an at-scale specialty chemicals business in Asia

February 2021



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Preface

Specialty chemicals has been a consistent value creator with significant tailwinds providing growth momentum. As the specialty chemicals market is moving to Asia, it is becoming an imperative for players to consider bold moves. This white paper lays out a perspective for Asian players and new entrants to this attractive space. It offers a granular view of the 40 segments that constitute the sectors and emphasizes the investible themes for Asia. We hope this serves as a starting point for interested companies as they embark on a journey to build or scale up their specialty chemicals business in Asia and make strategic choices on where and how to play.

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Executive summary

Specialty chemicals both globally and in Asia, has been a consistent value creator, outperforming commodity and diversified peers on Total Returns to Shareholders (TRS) over the last decade

TRS for specialty sector in Asia is growing at the back of improvement in margins and market expectations. Asian specialty companies have also generated higher economic profit than diversified/commodity peers. A combination of scale increase and Return on Invested Capital (ROIC) improvement has driven this value creation.

Asia is expected to drive ~70% of the incremental specialty chemicals demand¹ till FY25 primarily fueled by dis-proportionate growth in China, India², thereby, laying an imperative for players to make bold moves

Market in specialty chemicals is moving to Asia with strong tailwinds providing growth momentum across the 40 segments that make up the market. While granular assessment reveals that each of the 40 segments have attractive value pools and pockets of growth, combining the historical performance, impact of trends and potential to create value, 12 segments emerge as relatively more attractive for Asia.

Creating a winning position requires building unique set of skills critical to specialty chemicals

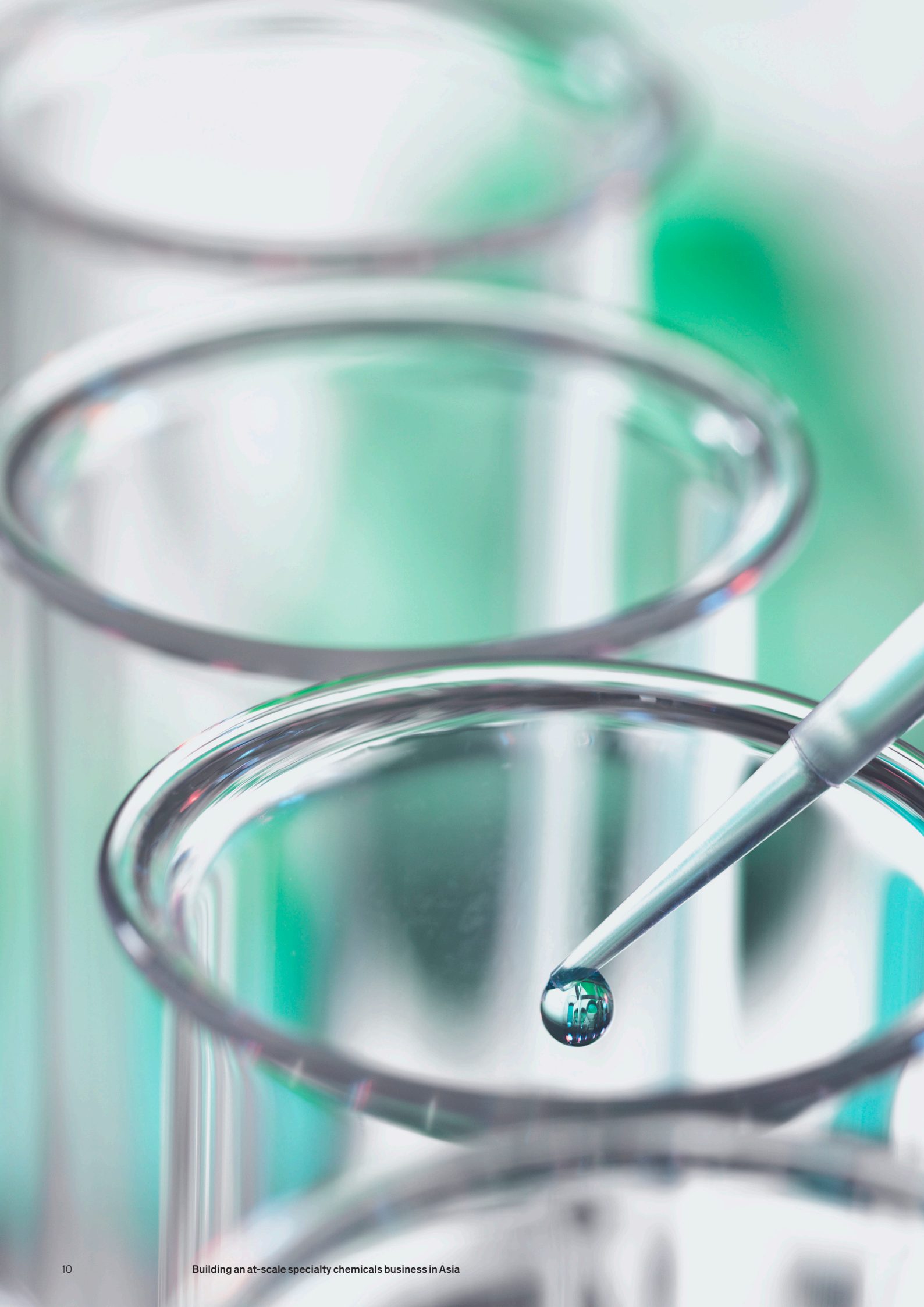
Choosing the most attractive segment(s) is critical to getting started as companies think about entering this space. For each of these attractive segments, profitability and returns on investment vary widely across players. Thus, companies also benefit from focusing on shaping a winning play. This calls for close attention to three questions:

- **On which platform should the business be built?** The choice between product, technology or market platform could define the company's value proposition and guide its long-term strategy
- **What is the route of entry – Organic vs inorganic?** Companies could choose the route of entry depending on their endowments and starting position. The inorganic route, through strategic mergers & acquisitions, could be a critical accelerator in the business building journey. If there is a starting point (e.g., access to customer, existing adjacent technology, and for sectors with high Asian market share, organic scale-up may be considered (e.g., electronic chemicals, textile chemicals etc.). However for segments with large non-Asian markets and players (e.g., cosmetic chemicals, nutraceuticals etc.) inorganic route will be important to build global brand presence and achieve accelerated growth
- **How do you build scale?** In general, Asian companies excel at lean operations and cost competitiveness, giving them a strong starting point. But building scale in specialties requires mastering a unique set of skills specific to the sector – spanning across the functional building blocks of a business. This includes mastering capabilities in go-to-market, organization design & culture, operating model and new product development

Specialty chemicals industry in Asia provides attractive opportunities that can be capitalized by Asian players. Companies interested in entering or scaling up in this space could strategically think about where to play and how to win.

¹ Incremental specialty chemicals demand generated between 2018–25

² 5%+ CAGR



1. Specialty chemicals in Asia: A consistent value creator

The chemical industry, globally and in Asia, has outperformed the market over the long term in its total returns to shareholders. Between the years 2000 and 2019, both specialty and base chemicals delivered similar shareholder returns at a CAGR of 12 percent. However, in the short term, between 2010 and 2019, the specialty chemicals sector has consistently outdone peer companies in diversified and commodity chemicals.³ This compelling capital market performance, deriving from total return to shareholders (TRS) and economic profit, positions specialty chemicals as an attractive segment in which companies could build or scale up.

Constant growth on shareholder returns³

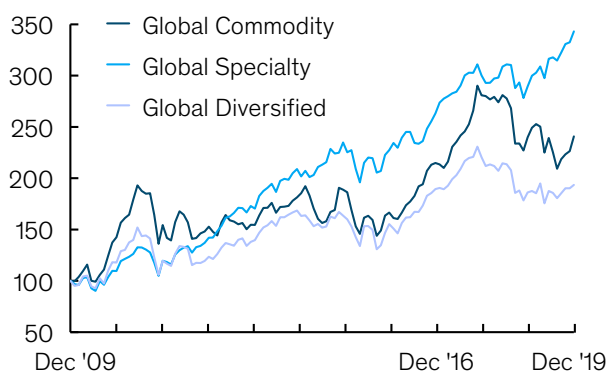
The specialty chemicals sector in Asia follows the global trend (Exhibit 1) – between December 2009 and December 2019, TRS for specialty chemical companies had a CAGR of around 10 percent, compared

Exhibit 1

Specialty chemicals outperformed peers in the last decade

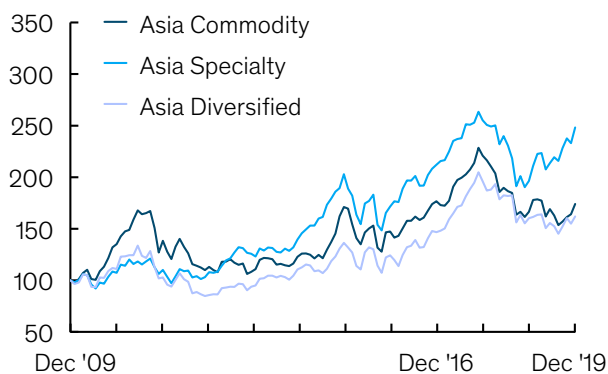
Total returns to shareholders (TRS)

Indexed, 100 = Dec 31, 2009, USD



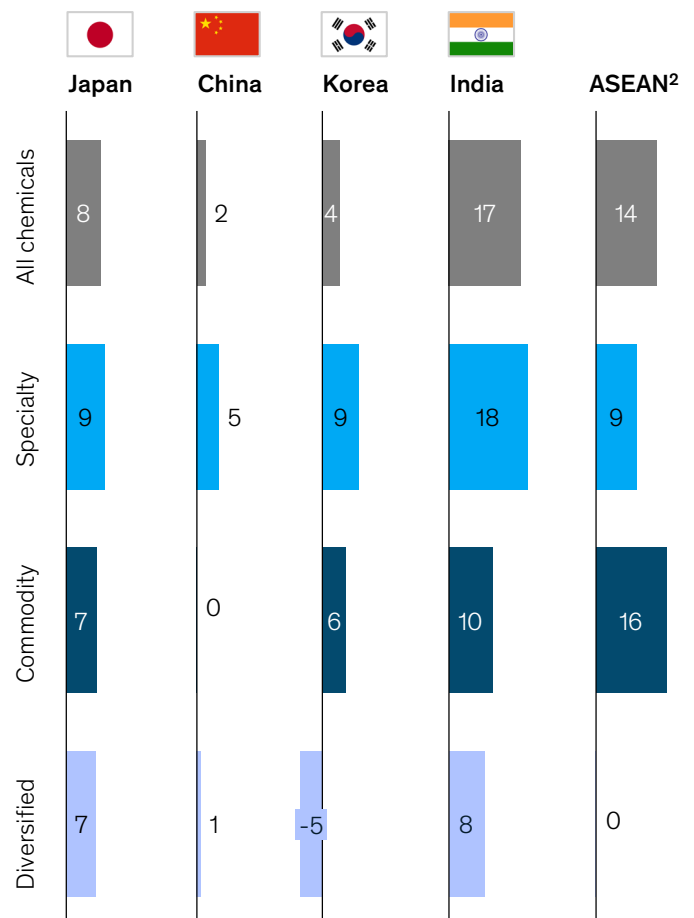
Total returns to shareholders (TRS)

Indexed, 100 = Dec 31, 2009, USD; N = 483



TRS CAGR

Dec'09–Dec'19



¹ Except Asean companies

² Thailand, Malaysia, Indonesia, Singapore, Vietnam considered

Source: Datastream, Corporate Performance Analytics by McKinsey

³ All TRS-related calculations in this section have been calculated based on figures sourced from Datastream

to 6 percent for commodity chemicals and 5 percent for diversified chemicals. This outperformance of specialty segments from a shareholder perspective is a consistent theme across major Asian countries such as China, India, Japan and Korea.

An 8.8 percent EBITA CAGR for specialty chemicals in Asia helped improve the TRS for the sector over the past decade. Powering this growth were the increased earnings for specialty chemical companies in Japan (EBITA CAGR of 4.7 percent) and China (EBITA CAGR of 20.8 percent). Markets like India and Korea reported comparable revenue and earnings growth, further strengthening the TRS performance of the sector in the region.

Recording higher economic profits⁴ than peers⁵

Between 2015 and 2018, specialty chemical companies in Asia recorded higher economic profits (EP) of around USD 17.4 mn, compared to commodity chemical (USD 5.4 mn) or diversified chemical companies (USD 12.6 mn). Japanese specialty chemical companies lead this performance, with the highest positive economic profit of USD 45.3 mn in 2018. In the medium to low range of economic profit are countries such as China (USD 21.3 mn) and India (USD 6.5 mn). Korean specialty chemical companies, on the other hand, reported a negative economic profit of USD (–)1.5 mn.

Scale and ROIC are underlying drivers of a strong EP performance, and cause variations in the scale of value created by region or country. An eight-year view of the specialty chemicals sector between 2011 and 2018 (Exhibit 2) indicates that it nearly quadrupled EP in Japan (from USD 12.4 mn to USD 45.3 mn) on the back of growth in effective ROIC percentage. The sector also has greater scale in Japan, with a high average invested capital of around USD 1 bn. This applies to China as well, where a 1.6x increase in scale led the sector to more than triple its EP from USD 6.4 mn to USD 21.3 mn in the same eight-year period. The Indian specialty chemical sector grew its EP from USD 3.9 mn to USD 6.5 mn in the last eight years due to both growing scale (1.3x) and increased effective ROIC percentage. Korean specialty chemical companies saw an around 20 percent rise in scale and improved ROIC percentage, also improving EP, albeit from a negative USD (–)2.3 mn to USD (–)1.5 mn.

- Specialty players in **Japan, with large scale and high ROIC** are advantaged due to the presence of large local end-industry applications (e.g., electronics)
- **Chinese players**, both private and state-owned enterprises, have invested heavily to build scale over the last decade with private players showing higher profits and high ROICs
- In comparison, **Indian specialties, although smaller, are profitable**, driven by techno-commercial founders and low labour costs
- The **Korean** specialty local market is smaller with a few subscale companies operating at **lower than industry average profitability**

⁴ Economic profit indicates whether a company is able to **earn excess returns** (spread) **above its cost of capital, and scale those returns** even when it employs more capital; Economic Profit = (ROIC-WACC)*Total Invested Capital

⁵ All economic profit–related figures in this section have been calculated based on data sourced from Capital IQ

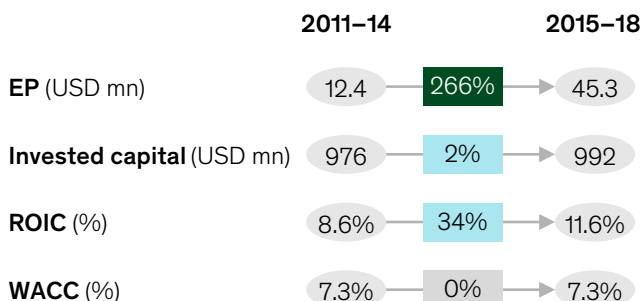
Exhibit 2

Scale increase and ROIC improvement is a common theme for value creation across specialties in top Asian countries

xx% 2011-14 values
increase by xx%

Specialty – Japan

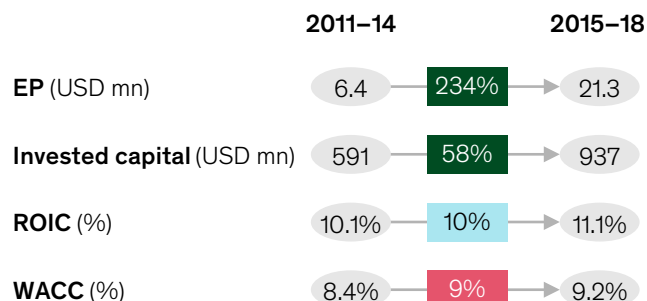
N = 51



Japanese companies tend to have high invested capital; increased ROIC percent for specialty companies has powered a 2.6x rise in average EP

Specialty – China

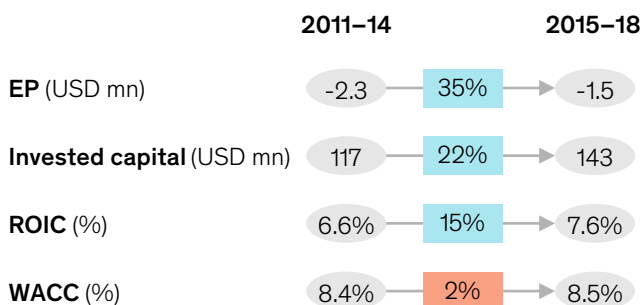
N = 36



Chinese companies generally have high invested capital; and the value of investments has increased 1.6x in the last 5 years – boosting EP

Specialty – Korea

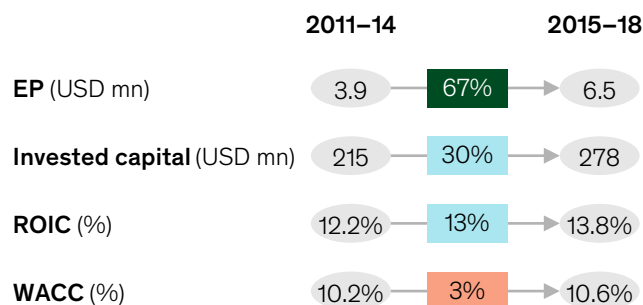
N = 44



Korean specialties have low scale & effective ROIC percent levels; they have seen a ~20% rise in scale and improved ROIC percent

Specialty – India

N = 51



Indian specialty companies have high ROIC percent, and have seen improved scale and effective ROIC percent increase

¹ India, South Korea, China & Japan have been considered for analysis

² Retention of status in mid zone or above have been considered

³ Effective ROIC = ROIC percent - WACC percent

483 chemical companies considered for analysis across Asia, consisting of 192 specialty companies

Source: Corporate Performance Analytics by McKinsey

While specialty chemicals is an attractive sector from a capital market perspective, it is also very diverse. It is important to evaluate which of the many segments within the sector are the most lucrative and investible.



2. Asia – the largest driver of specialty chemicals demand

In 2018, specialty chemicals was an approximately USD 710 bn market worldwide. Between 2012 and 2018, a revenue pool of around USD 60 bn to 70 bn in the specialty chemicals sector moved to Asia. This shift stemmed from a marked increase in discretionary and fundamental consumption among the burgeoning populations of Asian countries. Today, owing to the Covid-19 crisis, the specialty chemicals market is expected to shrink by 5–8% against FY19. However, given strong fundamentals the market is expected to recover between 2021-22. Overall there could be a delay of 1–2 years, with market expected to grow by USD 110-130 bn between FY18–25. Nearly 65 percent of this incremental revenue pool is likely to come from Asia, powered primarily by disproportionate GDP growth in China and India (over 5 percent CAGR). Asia's share in the total demand for specialty chemicals could grow from around 47 percent in 2018 to 50 percent by 2025 (Exhibit 3).⁶

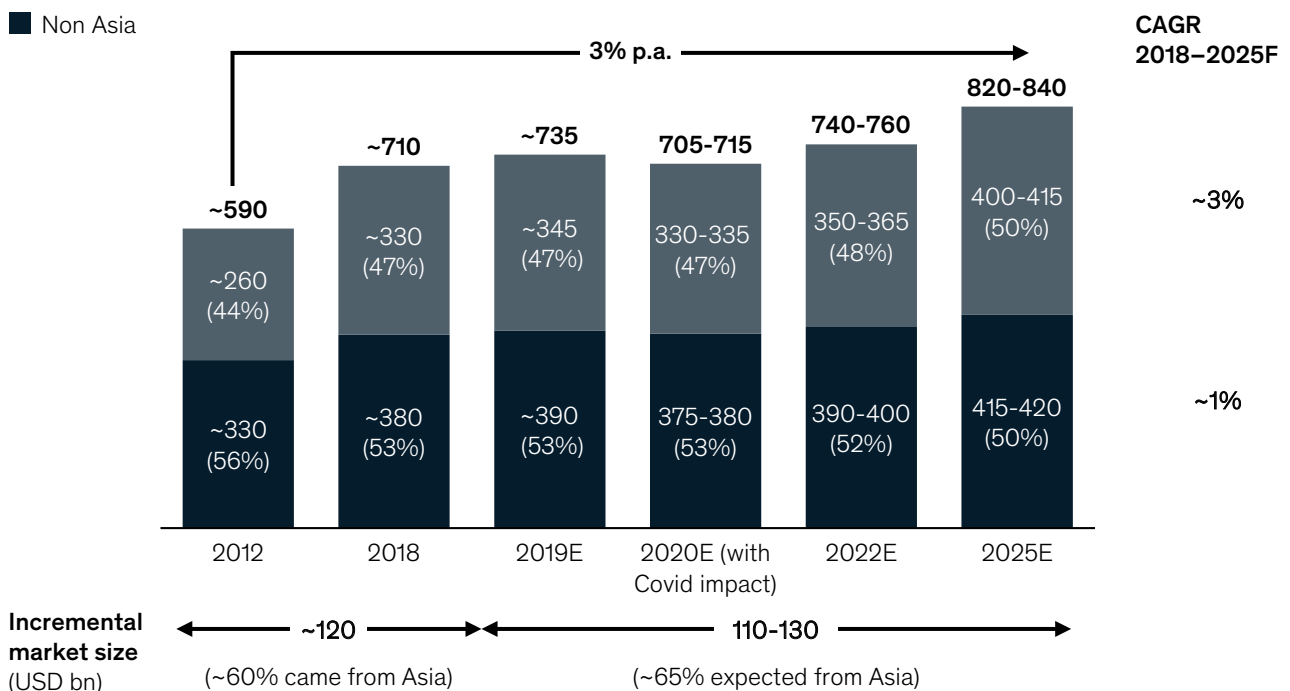
Exhibit 3

Global specialty market is expected to grow by USD ~110-130 bn by FY25; Asia could contribute ~65% of this growth

Global specialty market (USD bn)

■ Asia

■ Non Asia



Source: IHS Reports, expert interviews, Industry reports, IHS 2013-18 CAGR prorated till FY25, McKinsey Research

Where do you play in this immensely promising but richly diverse sector? It is an amalgamation of around 40 segments – ranging from agrochemicals and water-soluble polymers to cosmetic chemicals and nutraceutical ingredients, each with a different degree of attractiveness.

⁶ Market size, projections and the historical mobility figures cited in this chapter have been calculated based on data sourced from IHS Markit Insights, McKinsey Research, expert interviews

Picking out the investible themes requires a granular assessment of the market, and we attempted to evaluate and shortlist these segments using three filters:

- **Historical performance and the mobility of these segments to Asia:** Assessment of the changing market share and demand growth in Asia over the last six years led us to narrow down from 40 specialty chemical segments to nine that could prove lucrative for Asian players. On the strength of their positive mobility in Asia, coupled with revenue pool of greater to USD 10 bn and strong growth prospects with over 3 percent CAGR potential, nine segments classify as “attractive” for Asian entrants⁷ – Electronic Chemicals, Specialty polymers, Plastic additives, Water-soluble polymers, Flavours and fragrances, Cosmetic chemicals, Cleaners I&I, Agrochemicals and Emission control.
- **The impact of macro trends:** While demand in emerging Asian countries is shaped heavily by fundamental consumption patterns, in developed Asia premiumization and customization are the more compelling factors for consumers. Many of the nine segments shortlisted basis historical mobility are likely to grow due to consumption-driving trends such as increase in GDP per capita, the need for food, hygiene, health and nutrition.

Sustainability, bio-based products, innovative product and material technologies through miniaturization, smart materials, 3D printing etc. are also ideas gaining traction. These could serve as tailwinds for four more segments – Nutraceuticals, Enzymes, Adhesives and Construction chemicals – increasing their appeal for companies looking to enter or expand in the sector.
- **Potential to create value:** Each of the 40 segments was assessed across multiple factors to define the sector’s value-creation potential as high, medium or low (Exhibit 4). These factors include the ability to differentiate (through customer access and application support, product innovation), average segment profitability, regulatory barriers to entry, and the ability to win market share based on competitive intensity.

Example insights from the exercise are as follows:⁸

Cosmetic chemicals: This is a fragmented industry, where the top 10 players have around 40 percent of the market, indicating potential opportunities for new entrants. The average margin profile of industry leaders ranges from 15 to 25 percent and players could have considerable scope to differentiate through active ingredient and formulations.

Flavours and Fragrances: The Flavours and Fragrances segment is partially consolidated – the top 10 players control around 60 percent of the market, allowing for entry opportunities for new entrants. The market is characterized by high profit margins, e.g., around 20 percent for integrated formulators. It is a segment with high innovation driven by co-development of formulations with end customers – which provides several opportunities for differentiation.

Electronic chemicals: While this segment is highly fragmented (due to multiple end-use applications), each end segment is highly consolidated – the top one or two players possess 60 to 80 percent of the market. The market is characterized by high profit margins of 15 to 25 percent, especially in formulated products. The rapid evolution of the electronics industry mandates a high degree of innovation in the electronic chemicals segment thus providing opportunities for differentiation.

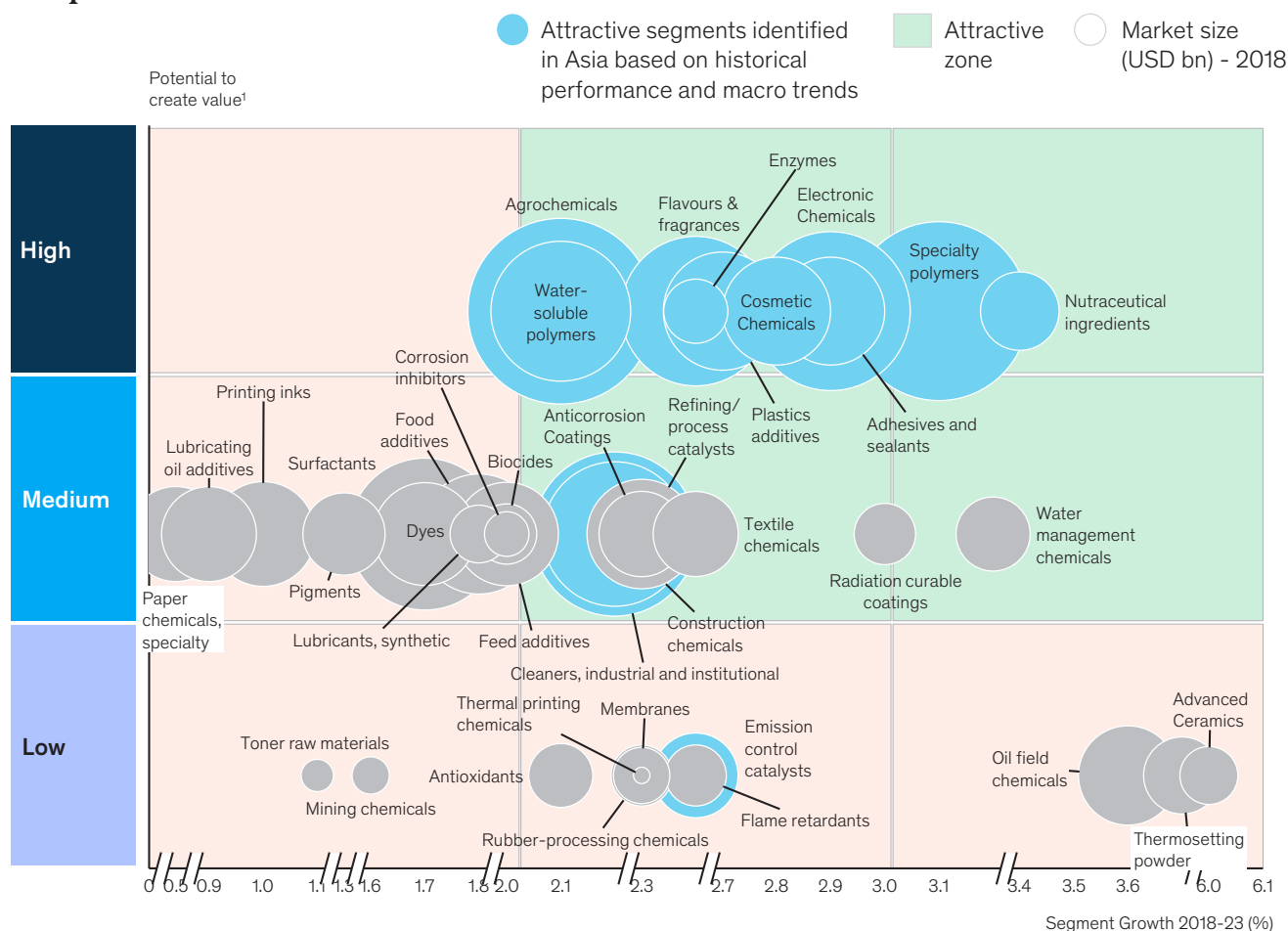
⁷ IHS Reports, expert interviews, Industry reports, IHS 2013-18 CAGR prorated till FY25, McKinsey Research

⁸ IHS report, expert interviews, McKinsey research

While granular assessment reveals that each of the 40 segments have attractive value pools and pockets of growth, combining the historical performance, impact of trends and potential to create value, 12 segments emerge as relatively more attractive for Asia: Electronic chemicals, Specialty polymers, Plastic additives, Water-soluble polymers, Flavours and fragrances, Cosmetic chemicals, Cleaners I&I, Agrochemicals, Nutraceuticals, Enzymes, Construction chemicals, Adhesives and Sealants.

Exhibit 4

12 segments emerge as attractive for Asia, based on historical performance, impact of trends and potential to create value



¹ Potential to create value index consists of ability to differentiate (through product or service), regulatory factors, market fragmentation & average segment profitability (>14% – high, 11%–14% – mid, <11% – low)

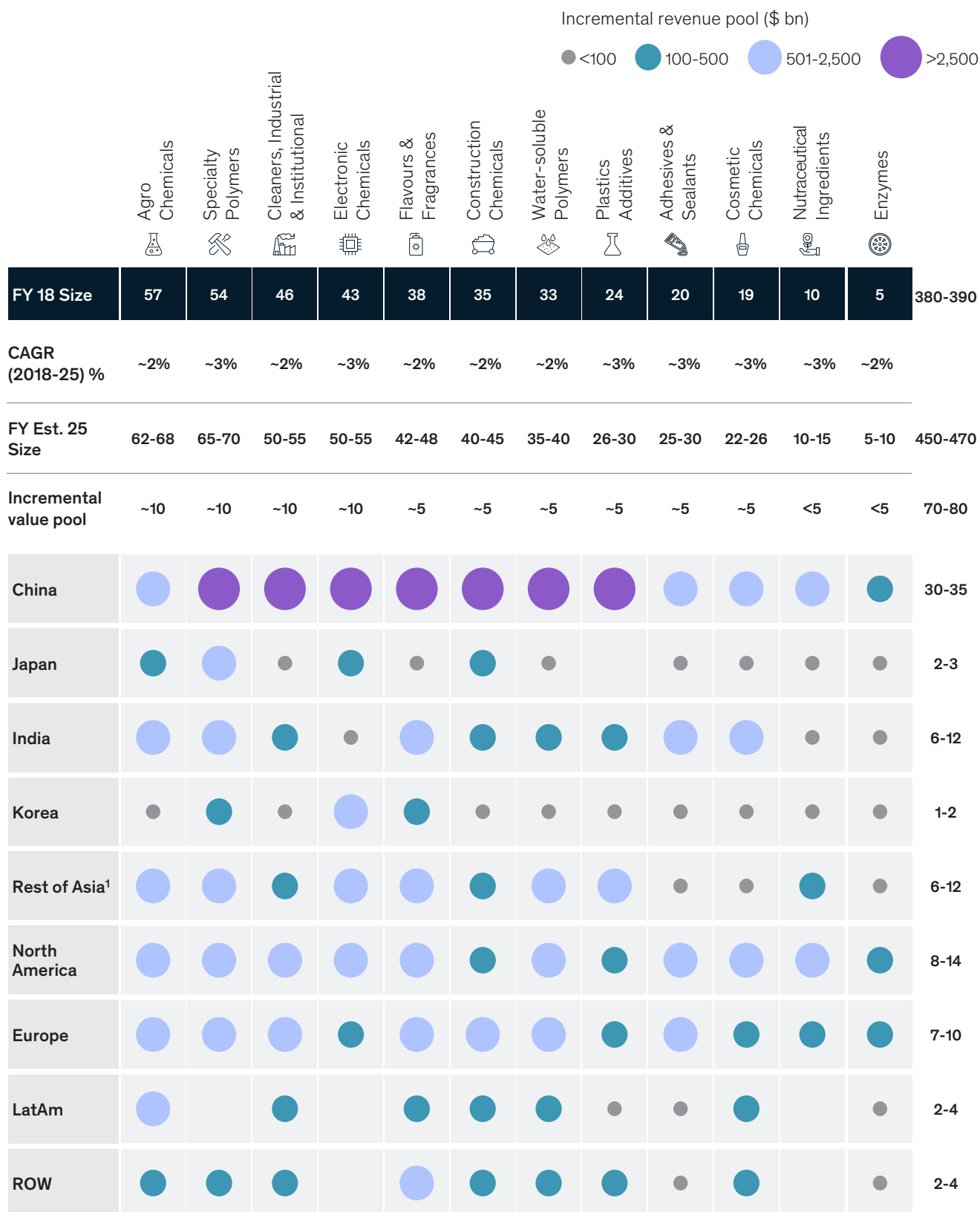
Source: IHS Markit Insights, press search

Together, they offer an incremental revenue pool of USD 70–80 bn between FY 2018 and 2025 out of the total incremental revenue growth in specialties of USD 110–130 bn (Exhibit 5).⁹

9 Analysis based on data sourced from individual IHS Markit specialty chemical segment reports

Exhibit 5

12 attractive segments offer a global incremental revenue pool of USD 70-80 bn in FY25



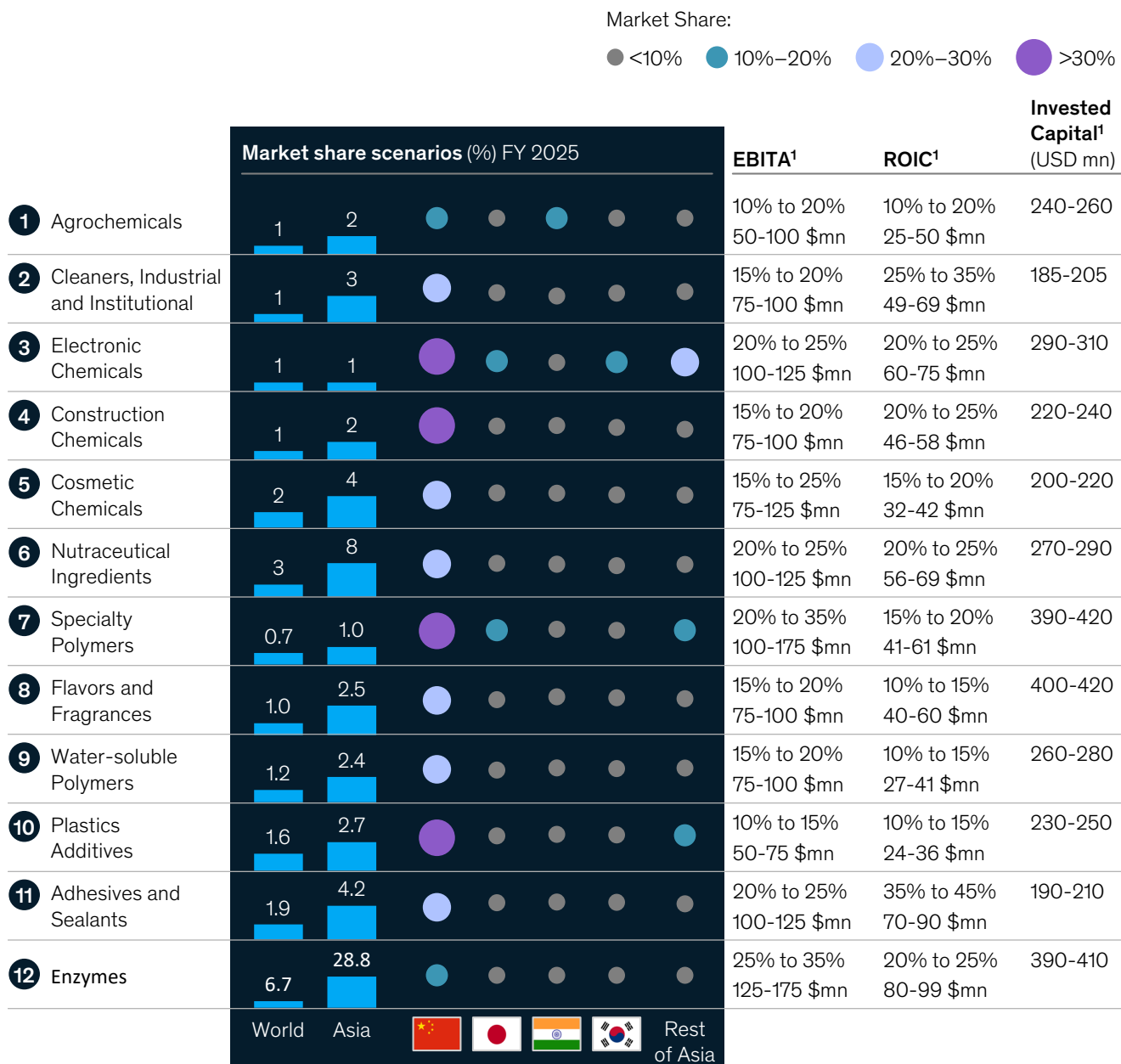
¹Includes rest of Asia (other than China, Japan, South Korea, India) and Oceania

Source: IHS Reports

Within the 12 focus segments, investment, returns, margin and ROIC levels vary significantly (Exhibit 6).¹⁰

Exhibit 6

What does it mean to have a USD 500 mn topline for the investible themes?



¹ Considered for top performing companies

Source: Capital IQ

A combination of growth and profitability are needed to shape a “winning” position within the chosen segment(s). Decisive and big moves around business models, mergers and acquisitions, resource allocation, capabilities, productivity improvements could make all the difference and enable a company to beat the odds.

¹⁰ Analysis of data sourced from Capital IQ

While Asia promises to be an attractive market for specialty chemicals globally, India presents a growing opportunity for local players. India is the fastest growing major specialty chemicals market in the world, expected to grow from USD 28 bn in 2018 to USD 40bn by 2025. The nature of this growth will be driven by end-market growth and increase in the intensity of per unit consumption. There additionally exists a significantly higher upside to this market size based on consumption standards and industry regulations.

Within the specialty chemical segments in India, agrochemicals, surfactants, specialty polymers and textile chemicals and dyes are among the top segments expected to maintain their relative leadership & further grow in line with market demand. Cosmetic chemicals, adhesives & sealants, flavors & fragrances, printing inks, food additives and water management chemicals are a few emerging segments expected to grow fast and improve their relative positions amidst the 40 specialty chemical segments in India.

Indian companies need to ramp up readiness to realize maximum advantage from the specialty chemical sector's growth potential.



3. Winning play to build an at-scale specialty chemicals business in Asia

Choosing the most attractive segment(s) is critical to getting started as companies think about entering or expanding in the specialty chemicals space. Since profitability and returns on investment vary widely, companies could also benefit from focusing on shaping a winning play. This calls for close attention to three questions for consideration:

- **On which platform should the business be built?** The choice between product, technology or market platform could define the company's value proposition and guide its long-term strategy.
- **What is the best route for entry – organic or inorganic?** Companies could choose the route of entry depending on their endowments and starting position. The inorganic route, through strategic mergers or acquisitions, could be a critical accelerator in the business building journey.
- **How do you build scale?** In general, Asian companies excel at lean operations and cost competitiveness, giving them a strong starting point. But building scale in specialties requires mastering a unique set of skills specific to the sector – spanning across the functional building blocks of a business.

On which platform should the business be built?

As companies try to build or grow in the specialty chemicals space, they could define and shape their winning position based on one of three platforms – product, market or technology (Exhibit 7).

Market platform players provide multiple products and solutions for the market in which they operate, strategically responding to customer pain-points and needs through their offerings.

Technology platform players offer specific “processing” capabilities across multiple raw materials and markets coupled with insights into multiple applications and/or services (including testing, data/advanced analytics). **Product platform** players have businesses based on a specific product or value chain, where they build economies of scale and establish cost leadership by constantly improving processes to expand margins.

Companies could opt for the most promising platform based on the synergies and possibilities across the segments in which they operate. For example, a specialty chemical company that manufactures nutraceuticals could expand or diversify into adjacent areas such as food additives, flavours and enzymes to develop a more end-to-end offering for the food and functional ingredients market.

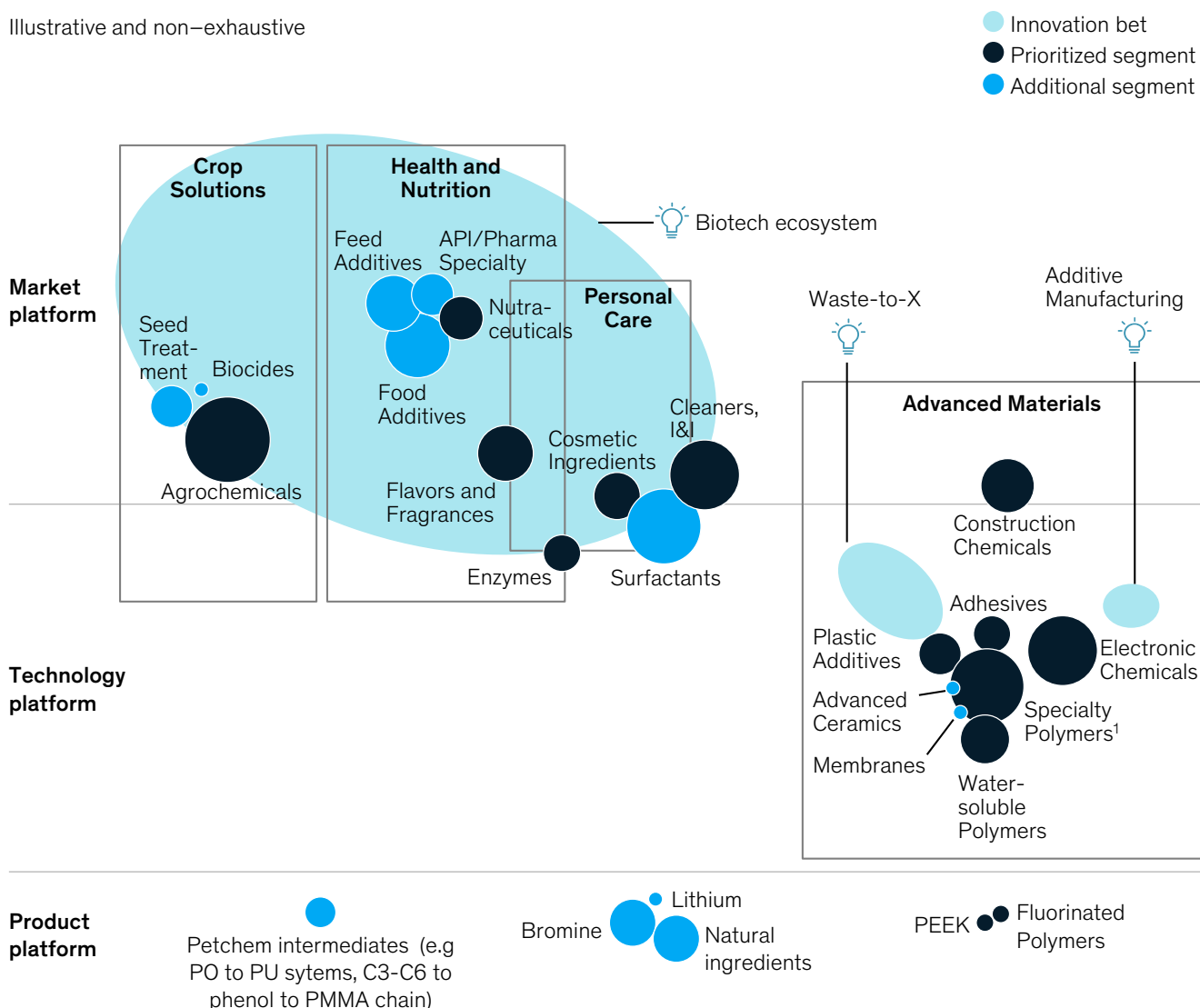
They also need to think about the geographical boundaries for their operations. The general perception seems to be that the fast-changing specialty chemicals industry demands a global presence. However, companies may well opt for a purely local play, where they win their home market through the organic strengths of a local presence, speed to market and a better understanding of local nuances.

On the other hand, companies that set their sights on being global could prepare to overcome the resulting complexities – setting up a decentralized organization with local and experienced talent to best serve each market and sidestep linguistic and cultural barriers. A global play goes hand in hand with highly complex stock-keeping units and dynamic demand patterns – companies could invest in a flexible manufacturing setup with a global footprint.

Exhibit 7

Potential winning platforms for specialty chemical players

Illustrative and non-exhaustive



¹ Specialty polymers also includes specialty films

What is the route of entry – organic vs inorganic?

New entrants have to also make a choice on the mode or route of entry – organic or inorganic. There are enough examples to support either approach. Players could decide what works for them based on their endowments and starting position. For sectors with high Asian market share, organic entry routes could be considered (e.g., electronic chemicals, textile chemicals etc.). However for segments with large non-Asian markets and players (e.g., cosmetic chemicals, nutraceuticals etc.) inorganic route could be considered for accelerated growth and building global brand presence.

- Players can opt for a **pure organic** entry on the back of existing technology, market platform or feedstock advantage. Capability, talent and customer access are built organically. With less than one deal in three years, this approach could translate to an increased time to market for the products. Therefore, an organic play would be more suitable for those with existing presence in specialty chemicals looking to build scale or add new segments to their portfolio.
- Another possible route is to take a **buy and build** approach. To expand the portfolio or enter new markets and applications, players engage in frequent M&A activity of at least one deal per year. This approach is most suitable for players who want accelerated growth, shorter time to market

and have negligible starting presence in specialty chemicals segments. However, based on higher valuation expectations of specialty chemical companies, this could be a costlier approach.

- A middle ground between these two approaches is the route of **organic growth with bolt-on acquisitions**. Suitable for mid sized or risk averse large companies, players may engage in 1–2 smaller strategic acquisitions every two-three years for strategic product portfolio additions or to enter into new geographies to build brand position.

How do you build scale?

The unique challenges and nuances of the specialty chemicals sector mirror the many permutations and combinations possible with the chemicals themselves. In our experience, we find that companies which develop a winning play in specialty chemicals usually have five distinct attributes. New entrants could consider these as guiding principles across key functions:

- **Exceptional customer services and solutions** delivered through customized formulations and dedicated technical support throughout the lifecycle
- **Distinctive innovation** in synthesis, product and application development to cater to the fast-changing consumer market and regulatory needs
- **Real-life testing competencies** through integration of end industry, application, and chemicals know-how, often requiring significant investments and thus, scale
- **Creation of value from complexity** arising from large stock-keeping unit (SKU) portfolio and dynamic demand patterns
- **Economies of scope created** through flexible configuration of assets, synergistic product portfolios and customer access

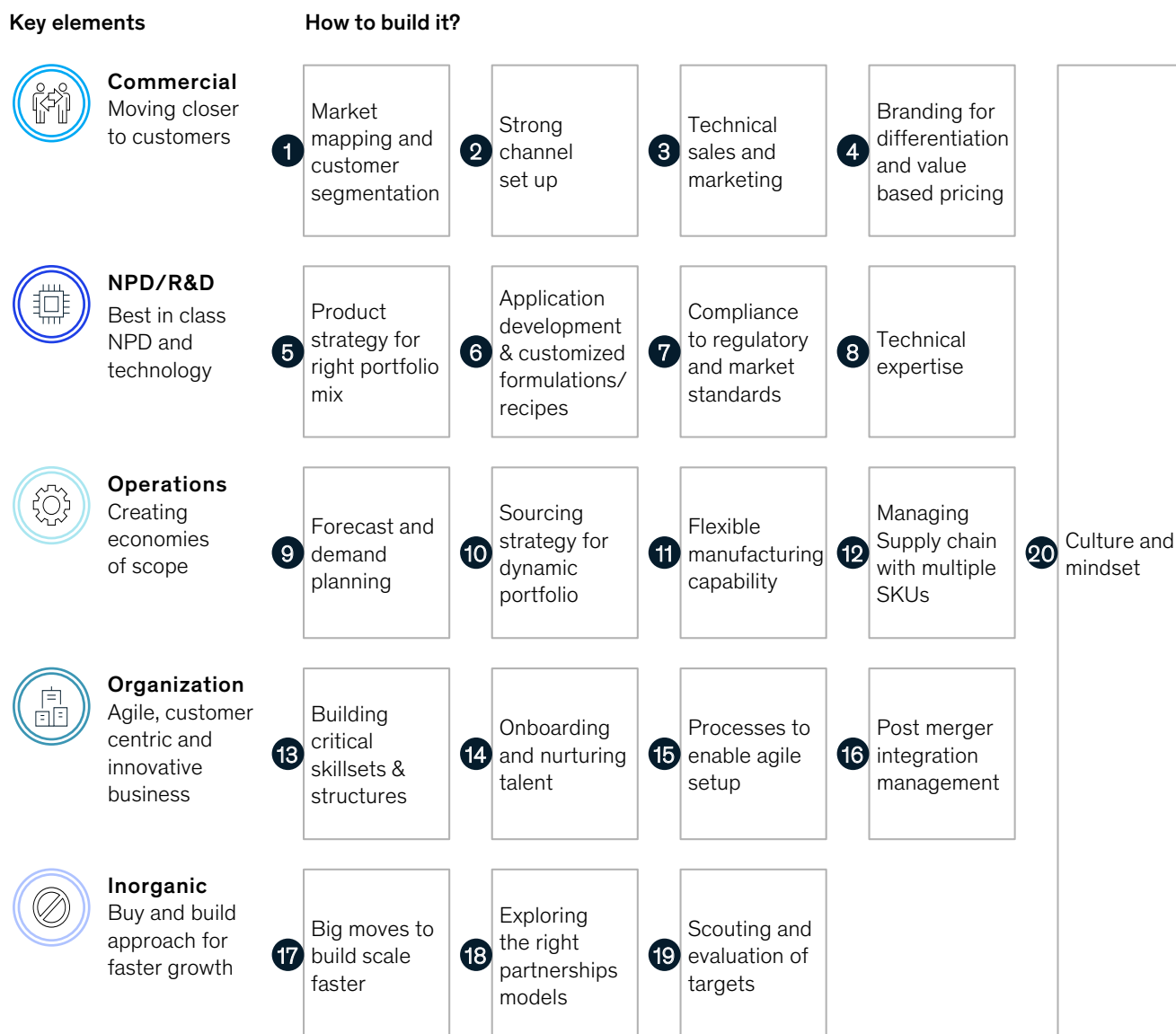
Based on our experience of building specialty chemicals businesses, we believe that specialty chemical companies could integrate these in 20 building blocks¹¹ across five key business functions (Exhibit 8):

- **Go-to-market:** Market coverage, customer segmentation, distribution channel choice and setup, technical marketing, branding for differentiation and pricing are critical themes for a specialty chemicals company to move closer to its customers. While Asian entrants have typically faced challenges outside of their home base, the development of large demand centres within the continent presents the opportunity to leverage geographic proximity and develop a “close to home” export-oriented growth strategy.
- **New product development and R&D:** Best-in-class technology is crucial for a new specialty chemicals business to flourish. From deciding on the right combination of blockbuster and bulk products to establishing a customer-centric application development process or acquiring the right technical skillset, companies could benefit from developing a state-of-the-art R&D and product development function. Competing against global incumbents with legacy innovation arms, a new Asian entrant may want to develop a multi-pronged approach to leapfrog instead of just playing catch up. This multi-pronged approach could include open innovation programs, innovative talent acquisition and retention strategies and global R&D centres.
- **Operations:** Developing a flexible and responsive supply chain could contribute to a robust operations backbone. Such companies can benefit from economies of scope and create value even in the face of operational complexity. While Asian entrants have traditionally mastered cost efficiency, creating flexibility remains a challenge. Developing a flexible and complex operational setup will require special focus, with implications on the underlying organization culture shift from industrial mindset to customer solution backed perspective.

¹¹ McKinsey's 20-module playbook for key functional elements unique to a specialty chemicals business

Elements of a winning strategy could be incorporated within the key building blocks of a specialty chemicals business

20 module playbook available across key functional elements of the business



¹ McKinsey Analysis

- **Organization:** An agile, customer-centric and innovative business requires strong organizational resources – from the right talent to the right structure. Talent, in particular, could be one of the most important building blocks for new entrants to specialty chemicals in Asia, given that hiring and nurturing the necessary talent is difficult in the region.
- **Inorganic plays:** For players looking at inorganic entry routes, through either buy and build approach or organic growth with bolt on acquisitions, multiple models of partnerships exist. To enable technology access, in-licensing options can help achieve assured quality based on partner's technical assistance, without direct investment in R&D. Similarly, market access can be enabled by establishing front end partnerships through branding or distribution agreements with existing players. Joint ventures and other types of investment partnerships could help facilitate collaborative growth by establishing long term relationships with varying degrees of risk based on the type of agreement

A robust capital market performance, shift of value pools to Asia and a diverse set of segments underscore the attractiveness of the specialty chemicals sector in Asia. While sectoral performance in FY2021 will be impacted by COVID-19, industry fundamentals remain intact and Asian demand may continue to be a driver of growth. Companies interested in entering or scaling up in this space could strategically think about where and how they operate. Adapting their key organizational functions to the nuances of specialty chemicals could be the key to a winning play in an immensely promising sector.

