

# 标普信评

## S&P Global

### China Ratings

# Credit Analysis of Issuers in the Chemical Industry

October 22, 2020

## Key Takeaways

- Among a sample of chemical producers, we view ChemChina, Bluestar, Sinochem International and Wanhua Chemical as being in a leading position in terms of their indicative issuer credit quality, due to their outstanding competitive positions or potential government support.
- In our opinion, Hengli Group and Rongsheng have stronger competitive positions than other privately-owned enterprises (POEs), due to their large-scale refining projects and integration in upstream and downstream sectors. However, they have higher financial leverage.
- We typically view chemicals as a relatively high risk industry, because of its highly competitive and cyclical nature. Most players in the sector are small in scale.

## Overview

By applying our corporate ratings methodology to public information, we have carried out a desktop analysis of 25 companies in the chemical sector, arriving at an initial overview of the relative ranking of each company's credit quality, or their "indicative issuer credit quality". The scope of the 25 companies in the sample covers most of the current sub-sectors within the industry. Please refer to the appendix for the full and abbreviated names of firms in the sample.

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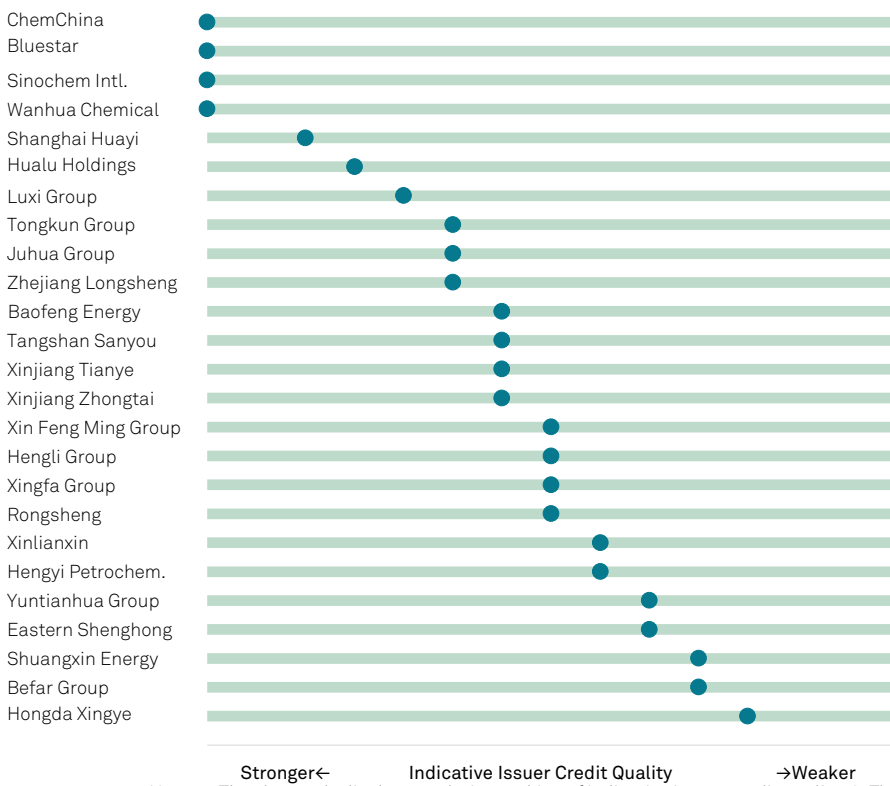
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Chart 1

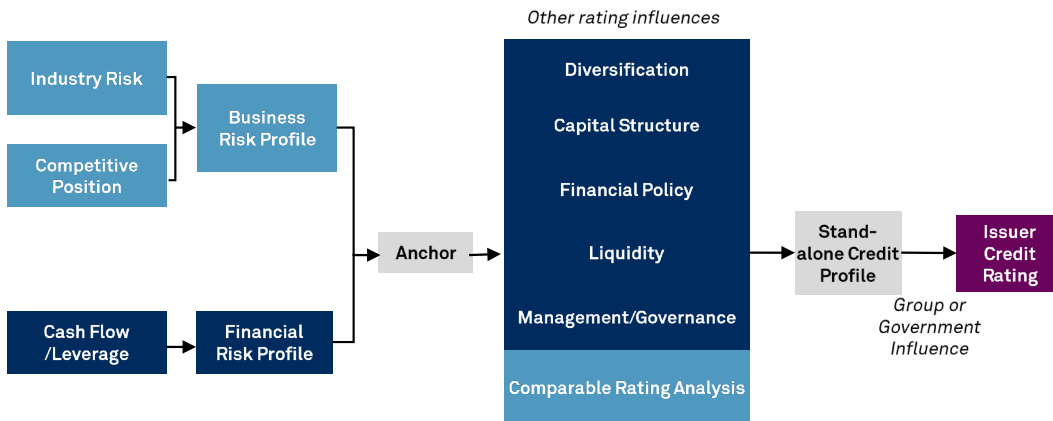
### Ranking of Sampled Companies' Indicative Issuer Credit Quality



Stronger← Indicative Issuer Credit Quality →Weaker  
 Note: 1. The chart only displays a relative ranking of indicative issuer credit quality. 2. The indicative ICR of Chemchina is a pre-merger result, it may change after the merger.  
 Source: S&P Global (China) Ratings.  
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This report on companies' indicative issuer credit quality uses S&P Global (China) Ratings' corporate methodology. When we analyze the credit quality of non-financials, we usually begin with analysis of the entity's business risk profile, before looking at its financial risk profile and other factors to arrive at its Stand-alone Credit Profile (SACP). We then analyze the external support that companies may obtain, including group or government support, to arrive at the Issuer Credit Rating (ICR).

Chart 2



Source: S&P Global (China) Ratings.

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## About This Article

S&P Ratings (China) Co., Ltd. (S&P China) has conducted a desktop analysis of a selection of entities, which we have chosen based on their asset sizes, representativeness of most regions and availability of public information. The analysis contained herein has been performed using S&P China Methodologies. S&P China Methodologies and analytical approaches are intended specifically for use in China only, and are distinct from those used by S&P Global Ratings. An S&P China opinion must not be equated with or represented as an opinion by S&P Global Ratings, or relied upon as an S&P Global Ratings opinion.

This desktop analysis has been conducted using publicly available information only, and is based on S&P China's methodologies for corporates. The analysis involves a desktop application of our methodologies to public information to arrive at a potential view of credit quality across sectors. It is important to note that the opinions expressed in this report are based on public information and are not based on any interactive rating exercise with any particular entity. The opinions expressed herein are not and should not be represented as a credit rating, and should not be taken as an indication of a final credit rating on any particular entity, but are initial insights of potential credit quality based on the analysis conducted. This desktop analysis does not involve any surveillance. The opinions expressed herein are not and should not be viewed as recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security.

We have conducted this desktop analysis on individual corporates and present the results contained herein at an aggregate group level. The different sections of this research show the statistics and performance of different groups of entities and the market more broadly against the metrics we generally consider most relevant under our methodologies.

Given the desktop nature of this analysis, and that we have not conducted an interactive review with any particular entity, we may have made certain assumptions in lieu of confirmed information and where relevant we may also have attempted to consider any possibility of parent, group, government or other forms of potential support, to inform our view of potential credit quality. S&P China is not responsible for any losses caused by reliance on the content of this desktop analysis.

## Business Risk Profile

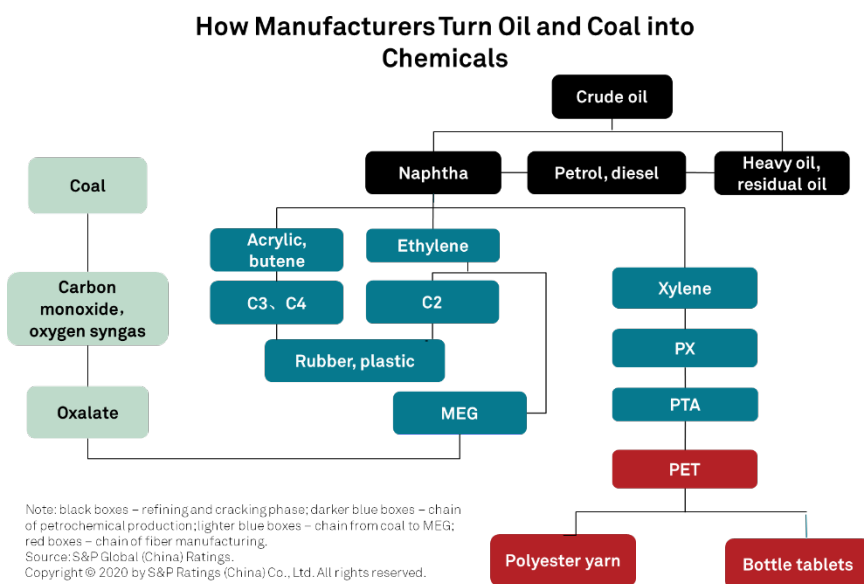
We usually assess a company's business risk profile by combining our analysis of its industry risk and competitive position.

### Industry Risk Ranking

We regard the industry risk of the commodity chemicals industry as relatively high (4), putting it at a moderately high level in our six-tier ranking. In addition to the strong cyclical nature of the industry, we view the products in the domestic commodity chemicals industry as lacking in differentiation, with low added value and intense competition in the sector. However, due to its high entry barriers, the specialty chemicals industry can be characterized by its higher technical requirements, various **specific end markets** and **heterogeneous** products. The specialty chemical sector's industry risk is (2), a lower level than that of commodity chemicals.

**Competition is more intense among commodity chemical companies. Oil is the main raw material followed by coal, and there are many sub-sectors.** The commodity chemicals industry has homogenous products, and most chemical firms are price takers both in China and overseas. There are many commodity chemical producers, with small business scale, resulting in a very fragmented market. In the petrochemical industry, several chemical-based refinery projects have been set up on China's east coast in recent years, increasing the production capacity for some major commodity chemical products. As a result, supply exceeds demand, further intensifying competition and increasing pressure on producers with high costs. At the same time, with its abundant coal resources, China has developed a unique coal chemical industry, including traditional chlor alkali chemicals and synthetic ammonia sectors. Its main products include benzene, methanol, polyvinyl chloride (PVC), urea, etc. In recent years, the coal chemical sector has further developed into producing coal-to-olefin, coal-to-glycol or coal-to-oil products and other areas. Compared with overseas, the chlor alkali chemical industry in China's western regions has obvious cost advantages. However, in the last two years, various coal chemical projects have entered operation, increasing production capacity and supply, which has intensified competition for certain chemical products. This, coupled with low oil prices, may see competition between coal chemical products and petrochemical products further intensify.

Chart 3



The industry is highly cyclical, and prices fluctuate significantly. Supply side reform, demand and oil price have become the main factors leading to chemical product price fluctuations in recent years. In 2016, the chemical industry kicked off supply side reform, which led to a gradual

uptick in chemical prices in that year. Meanwhile, international oil prices picked up, which also boosted chemical prices. However, in 2020, as impacted by COVID-19 and low oil prices, chemical prices fell sharply, before recovering in tandem with the rest of the economy.

Chart 4

**Prices of Major Chemicals -Petro and Coal Related**

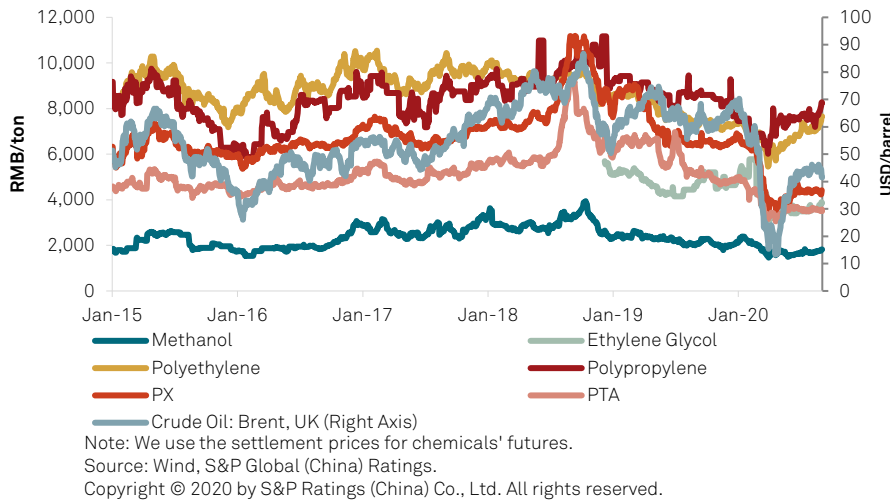


Chart 5

**Prices of Major Chemicals -Fertilizer & PVC**



**Analysis of Competitive Position**

We generally consider the competitive position of a company from four aspects: competitive advantage, scale, scope and diversity, operating efficiency and profitability. For commodity chemical companies, due to homogenous products, we usually focus more on two aspects: operating efficiency and scale, scope and diversity.

**Competitive Advantage**

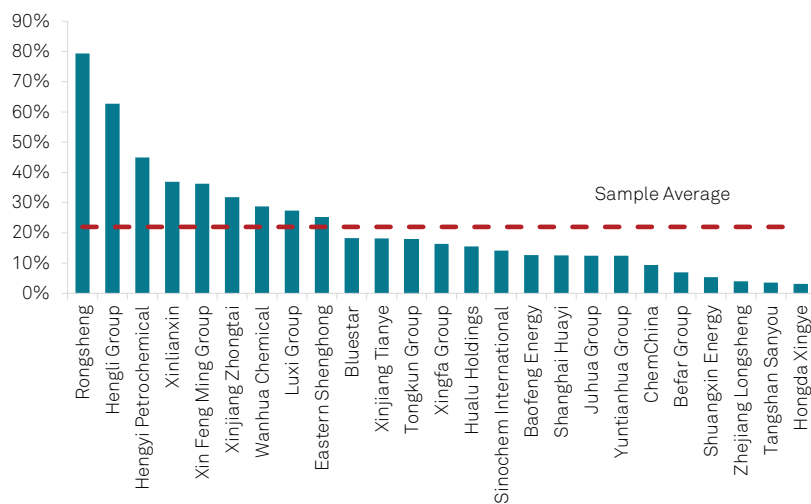
In our opinion, differences between companies in terms of competitiveness are largely affected by the sub-sectors in which they compete. There are many kinds of chemicals and

varying chemical products, forming many sub-sectors within the industry. Each sub-sector has different barriers to entry, competition dynamics, supply-demand balance, product characteristics, capital requirements and technical requirements, which may affect the competitiveness of companies within it. Being a leading firm may not bring great pricing power, but it would help with maintaining good relationships with upstream suppliers and downstream clients. We also believe that the leading position of a company is often closely related to its growth strategy. Among the industry's various sub-sectors, Bluestar, a subsidiary of ChemChina, has obvious advantages in the field of organosilicone. Syngenta is a leading firm in the field of agrochemistry, Wanhua Chemical in polyurethane production and Zhejiang Longsheng in the chemical dye domain. For chemical fibers, chlor alkali and coal chemicals, Tongkun Group, Xinjiang Zhongtai and Hualu Holdings are all leading firms respectively.

**We observe that sufficient capital expenditure can help companies sustain their competitive advantages.** The chemical industry is capital intensive, with China's domestic industry in a stage of continuous upgrades, requiring even more capital investment. In our analysis, it is important to know whether the company can maintain sufficient capital investment, whether the firm's growth strategy suits its own situation and industry trends, and whether the company can always maintain a leading position as the industry continues to develop, all of which have put higher requirements on its ability to manage projects and gauge industry trends. Companies that can maintain large-scale capital expenditure and expand along both upstream and downstream industry value chains are more likely to obtain outstanding competitive advantages.

Chart 6

### Average CAPEX to Net Assets of Sampled Chemical Companies, 2017-2019



Note: Data for Eastern Shenghong is the average for 2018 and 2019.  
 Source: Companies' annual reports, S&P Global (China) Ratings.  
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In our view, the expansion in recent years of the petrochemical and coal chemical sectors may help companies enhance their competitive advantages. Private owned chemical fiber companies such as Hengli Group, Rongsheng, Hengyi Petrochemical are representative companies in the petrochemical sector. Having invested heavily upstream along the industry value chain, these firms are no longer reliant on raw material imports. This, combined with their existing downstream integration, can continuously improve their competitive advantages. In the coal chemical sector, some firms such as Baofeng Energy rely on northwest China's cheap and abundant coal resources. Together with the adoption of modern coal chemical technology, this access to resources allows such firms to develop coal-to-olefin production, and thus gain and develop leading position within the industry.

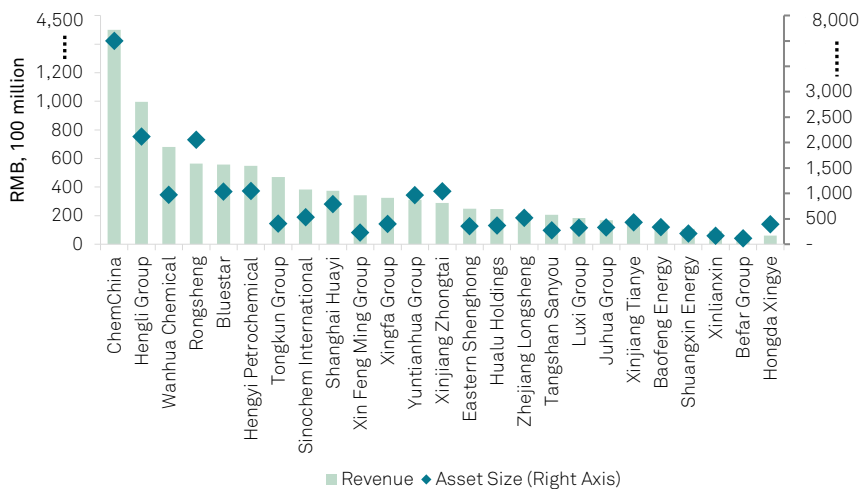
## Scale, Scope and Diversity

When considering the scale, scope and diversity of chemical companies, we usually focus on the scale of revenue and assets, the degree of integration, the diversity of products, upstream and downstream concentration and geographic diversity.

In our view, chemical firms with larger asset and revenue scale usually have a larger market share and variety of products, due to benefits of economies of scale. Most of China's chemical firms are small in scale. More than half of the 25 issuers in our sample have assets of less than 50 billion RMB. The chlor alkali, chemical fiber, agrochemical and other sub-sectors each has a good number of players, with similar asset scale. In the petrochemical industry, capital expenditure is higher and firms generally have larger scale, but there are fewer companies. ChemChina has the largest asset and revenue scale in the industry. Its subsidiaries span multiple business segments and are far ahead of other chemical firms in terms of revenue and asset scale. Once its merger with Sinochem Group is completed, the new group's clear advantages in terms of revenue and asset size will be even more prominent. In recent years, Hengli Group, Rongsheng and Hengyi Petrochemical have successively launched large-scale petrochemical projects, with asset scale surpassing 100 billion RMB and revenue scale increasing significantly. Wanhua Chemical has continued to extend its reach along the polyurethane industry chain, increasing its investment in the upstream petrochemical sector and mainly developing carbon 3 and carbon 4 olefin derivatives. This has allowed it to become self-sufficient for certain raw materials needed in polyurethane production. With the capacity to develop polyurethane-derived specialty chemicals for downstream demand, the revenue share of downstream sectors is constantly increasing.

Chart 7

Revenue and Asset Size of Sampled Chemical Companies, 2019



Note: Revenue does not include trade business. The revenue and assets of ChemChina do not include those of Sinochem.

Source: Companies' annual reports, S&P Global (China) Ratings.

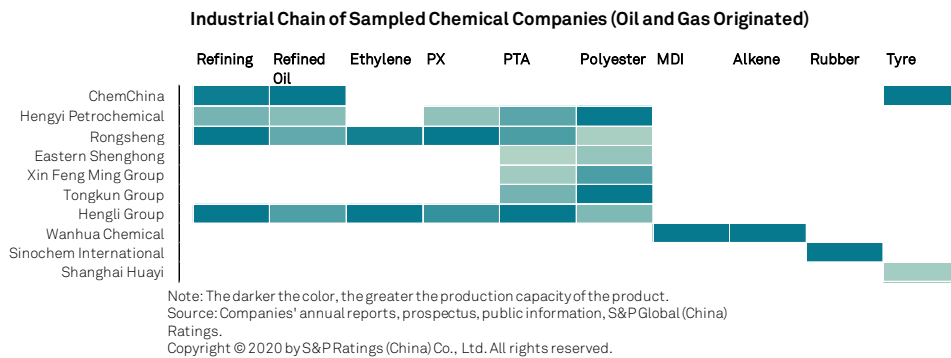
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**We view integration and product diversity as conducive to stabilizing chemical producers' income and cash flow.** The chemical industry has a long industry value chain, a variety of products and significant cyclicity. Companies are typically involved in one or several segments on the industry value chain. If chemical prices fluctuate sharply, a firm's income and cash flow may be directly affected. Companies with a higher degree of integration and a wider range of products can be more resilient to price fluctuations. For our sample, we grouped the entities based on their main raw materials used. The main products derived from crude oil include refined oil, ethylene, PX, polyester and tires. Main products derived from coal are sodium hydroxide, PVC,

urea and methanol. Therefore, product diversity can reduce revenue and cash flow volatility for chemical companies as their prices are affected by different factors.

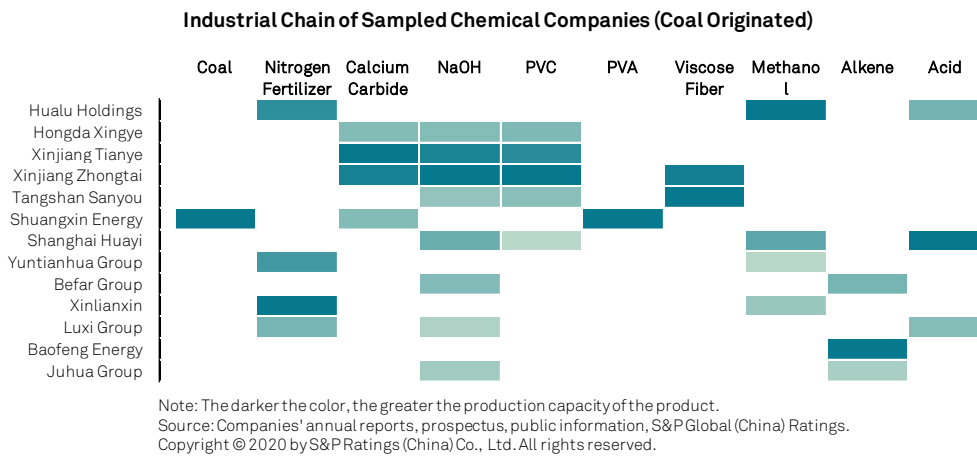
Among the oil-based chemical producers, ChemChina, Hengli Group, Rongsheng and Hengyi Petrochemical offer a variety of products. The latter three firms have formed a fully integrated model across upstream and downstream sectors producing refined oil, chemical fibers and even textiles, which significantly enhances their business' stability. Wanhua Chemical has also established an industry value chain for polyurethane products, developing its petrochemical business upstream and producing polyurethane-derived specialty chemicals with higher added value downstream. This setup allows the firm to constantly develop more product types, as it realizes self-sufficiency for upstream and downstream products. This in turn reduces costs and consolidates its leading position in the polyurethane industry.

Chart 8



Among the coal-based chemical producers, Hualu Holdings, Xinjiang Zhongtai, Shanghai Huayi and other firms have established a long industry value chain while offering a variety of product types.

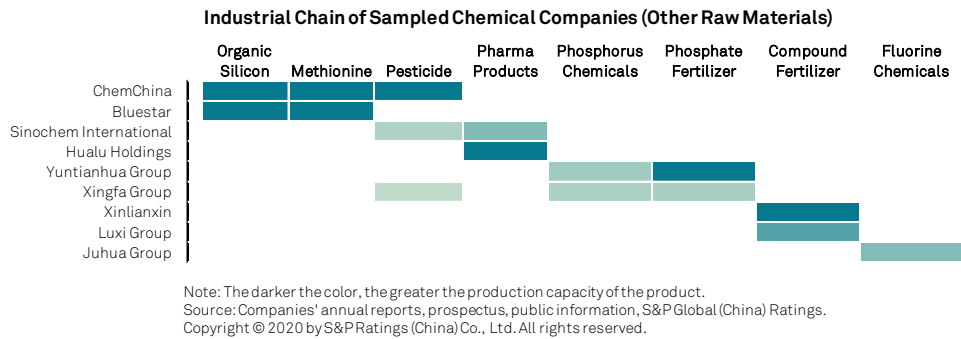
Chart 9



In addition, other raw materials have their specific industry value chains, such as phosphorus chemicals, fluorite, organic silicon and crude salt. Among our sample, Yuntianhua Group and Xingfa Group have established a relatively long phosphorus industry value chain, and Bluestar and Syngenta, both subsidiaries of ChemChina, have strong advantages in organosilicon, methionine, pesticides and other fields.



Chart 10



### Supplier and customer concentration may lead to an increase in volatility for chemical firms.

If the concentration of upstream raw material suppliers is too high, it may limit a chemical firm's cost flexibility. If the concentration of downstream consumers is too high, this may also act as a drag on the company. For example, PTA and polyester production used to import large quantities of raw materials from overseas. The development of chemical fiber producers is restricted by availability of raw materials, so such firms have successively expanded their business upstream and now produce their own PTA and polyester. In addition, polyester is mainly used to make chemical fibers, and is directly affected by the development of the textile industry. Amid the COVID-19 pandemic, we have observed that chemical fiber companies have been once impacted by the struggling textile industry.

**High geographic concentration is a credit risk for the chemical industry, with most of the Chinese firms either positioning themselves close to raw material supplies in western regions or downstream markets in the east.** The production and transportation of chemicals involves a high level of risk. Production bases concentrated within one region face a higher risk from natural disasters or production accidents, which may impact on the firms' credit quality. Companies with multiple factories scattered across various regions can reduce the chances of the abovementioned risk affecting their credit quality. ChemChina, Hengli Group, Rongsheng, Bluestar, Wanhua Chemical, Shanghai Huayi and Sinochem International have production sites scattered across the country. Furthermore, ChemChina, Bluestar and Wanhua Chemical have established considerable overseas production capacity, putting their business on the international stage to some degree. This is further conducive to reducing concentration risk.

Chart 11

## Geographic Distribution of Sampled Chemical Firms' Production Bases

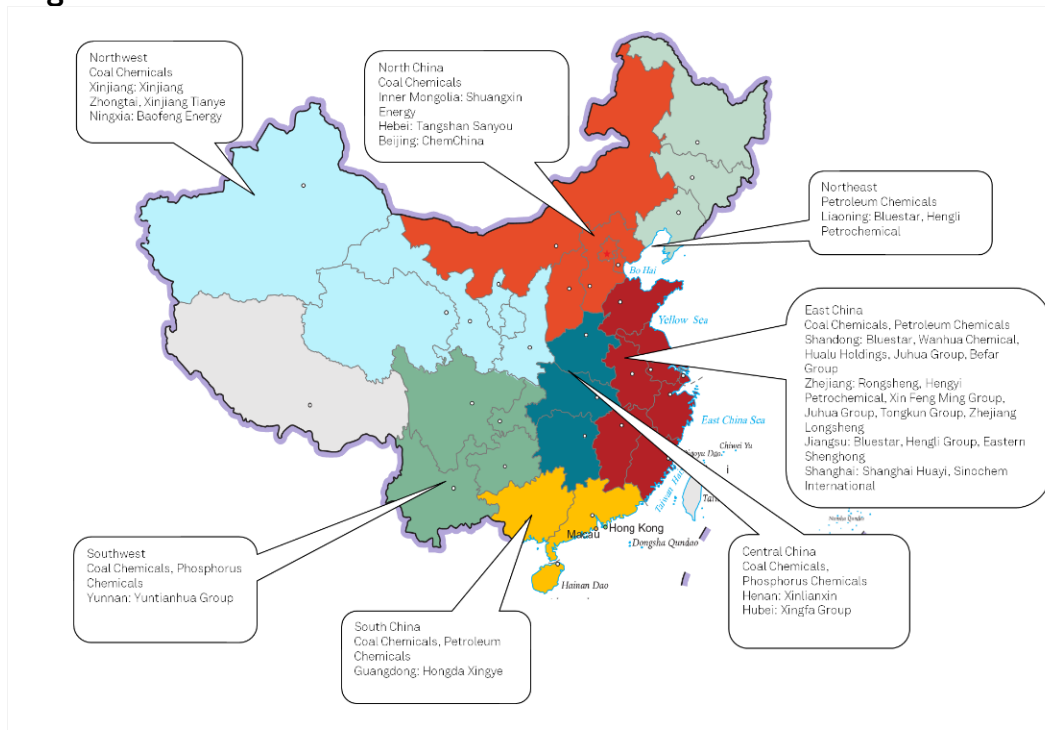
	NE China	North China	East China	Central China	South China	SW China	NW China	Abroad	Asset Size (RMB, 100 million)
ChemChina	◆	◆	◆	◆	◆	◆	◆	◆	8,440
Hengli Group	◆		◆						2,117
Rongsheng	◆		◆		◆				2,050
Hengyi Petrochemical			◆					◆	1,048
Xinjiang Zhongtai							◆		1,039
Bluestar	◆		◆					◆	1,029
Wanhua Chemical			◆					◆	969
Yuntianhua Group						◆			960
Shanghai Huayi			◆			◆	◆	◆	789
Sinochem International			◆					◆	527
Zhejiang Longsheng			◆						516
Xinjiang Tianye							◆		429
Tongkun Group			◆						400
Xingfa Group				◆					394
Hongda Xingye		◆							388
Hualu Holdings			◆						366
Eastern Shenghong			◆						350
Baofeng Energy							◆		333
Juhua Group			◆						330
Luxi Group			◆						321
Tangshan Sanyou		◆							268
Xin Feng Ming Group			◆						229
Shuangxin Energy		◆							205
Xinlianxin				◆					161
Befar Group			◆						111

Source: Public information, S&amp;P Global (China) Ratings.

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Chart 12

## Regional Distribution of Chemical Producers



Source: Public information, S&P Global (China) Ratings.

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## Operating Efficiency

When considering the operating efficiency of commodity chemical producers, we firstly look at the company's costs. Amid significant price fluctuations for chemical raw materials and downstream products, we also focus on the firm's ability to adjust costs when faced with price volatility.

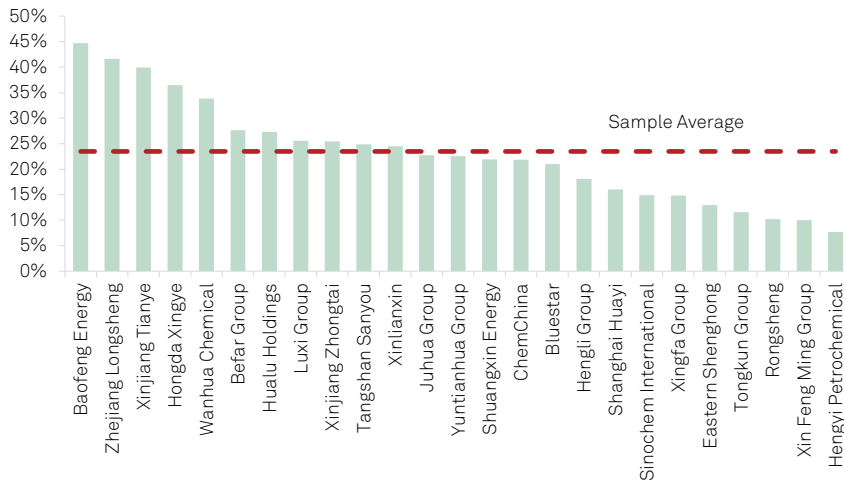
**We have found that the gross profit margins of coal chemical, petrochemical and specialty chemical companies are relatively high.** Chemical products vary significantly in terms of their respective costs, prices and profit margins. The product mix can also vary widely for different companies. For this reason, it is difficult to directly compare firms' cash costs across different fields and sub-sectors. Therefore, we use gross margin to compare the companies' operating efficiency.

No matter how the market environment may change, the profit level of a chemical producer with high operating efficiency should remain better than that of peers in the same sector. Baofeng Energy, Xinjiang Tianye, Hongda Xingye and Hualu Holdings lead the industry in terms of gross margin. Coal is the main raw material for all of these firms, and their main products include PVC and olefin. These companies either rely on the low cost of raw materials or on having more advanced technology and processes at their disposal to improve their operating efficiency. Zhejiang Longsheng is the leading producer of chemical dyes, a specialty chemical product. High barriers to entry in this sector ensure the company's higher gross margin. As another example, MDI production has relatively high technical requirements, and Wanhua Chemical, a global leading firm for polyurethane production, is China's only company with its own intellectual property rights for MDI production technology. This gives it strong foundations in terms of profit margin. Furthermore, the MDI industry value chain is very long, and Wanhua Chemical's strengths in polyurethane production, wide presence in upstream and downstream segments of the chain and corresponding lower costs mean it can still maintain higher profit levels than its peers when

the industry enters a downturn. A large-scale refining and chemical project under Hengli Group entered operation in 2019, which had a significant effect on increasing the firm's gross margin that year. Similarly, Rongsheng's large-scale refining and chemical project was established at the end of 2019 and is expected to significantly improve its future gross margin.

Chart 13

### Gross Margin of Sampled Chemical Companies, 2017-2019



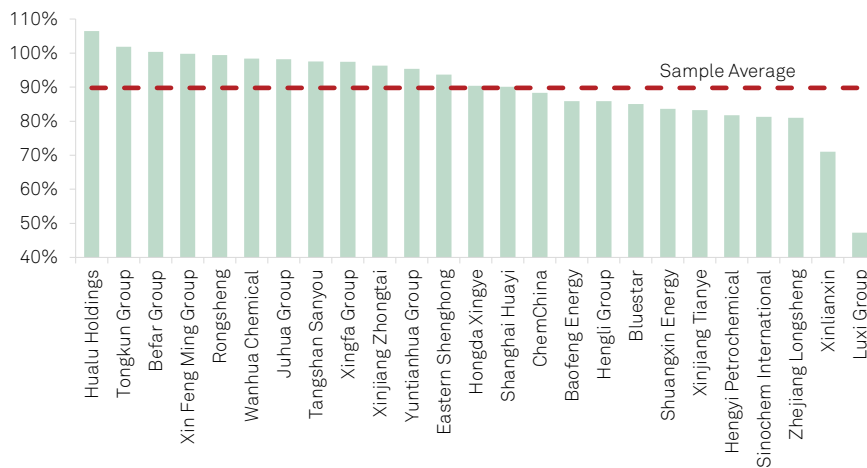
Note: 1. Gross margin shown in the chart does not include trade business. 2. Data for Eastern Shenghong is the average for 2018 and 2019.

Source: Companies' annual reports, S&P Global (China) Ratings.  
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Another important indicator of a chemical producer's operating efficiency is their capacity utilization rate. A higher capacity utilization rate means that the firm can better bring its scale advantages into play, reducing the unit cost. In recent years, the government has rolled out a series of measures to improve safety standards and environmental protection within the chemical industry. Following the "Xiangshui Industrial Park" incident, an industrial accident which killed 78 people in Jiangsu Province in 2019, regions nationwide have accelerated measures to move factories away from urban areas to industrial parks, affecting production for some chemical companies. However, companies with advantages in safety and environmental protection can take this opportunity to increase production and increase their market share. The low capacity utilization rate of Luxi Group is mainly due to the company adjusting its product mix and moving its resources towards chemical products with higher added value. This has resulted in the rate of the company's capacity utilization of urea and compound fertilizer declining gradually in the past three years. Therefore, despite having a very low capacity utilization rate, its overall gross margin is relatively high. The capacity utilization rate of Xinlianxin is lower than the sample's average, mainly because that the compound fertilizer sector is faced with excess capacity and the sector's overall capacity utilization rate is relatively low.

Chart 14

### Capacity Utilization Rate of Sampled Chemical Companies, 2019

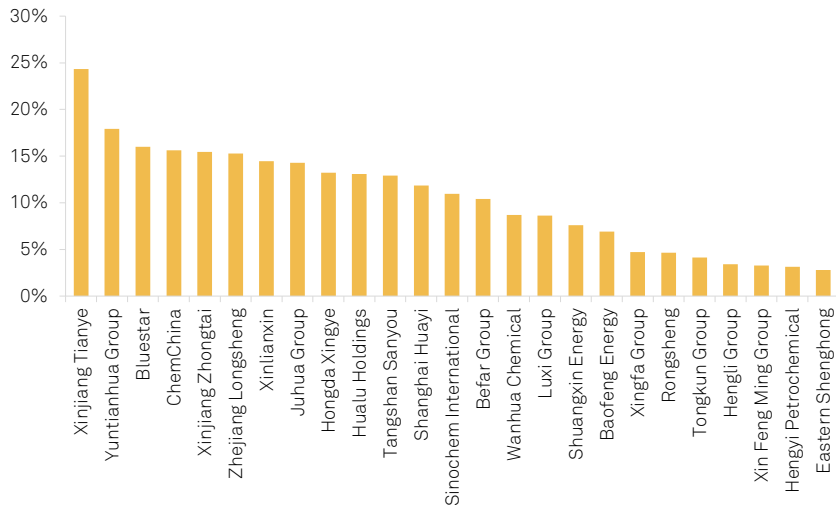


Note: The chart shows the average capacity utilization rate of the sampled firms' main products.  
 Source: Companies' annual reports, prospectus, public information, S&P Global (China) Ratings.  
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In our opinion, differences in companies' SG&A expenses reflect different characteristics of the sub-sectors, as well as how firms manage costs. In addition to our analysis of gross margin, we also consider the company's capacity to manage costs. SG&A expenses are affected by the characteristics of the relevant industry, the company's scale and management level, personnel costs, adoption of automation and information technology, historical performance and other factors. As can be seen in the chart below, the SG&A expenses ratio of the six chemical fiber firms in the "PTA - chemical fiber" industry value chain is relatively low, because of the relatively low gross margin of products in that sector. This means such firms need to control and manage costs through more sophisticated means. The SG&A expenses rate of Xinjiang Tianye is relatively high, which is mainly due to the increased transportation costs and losses from production shutdowns. This leads to higher selling and management costs.

Chart 15

### SG&A Expenses Ratio of Sampled Chemical Companies, 2017-2019

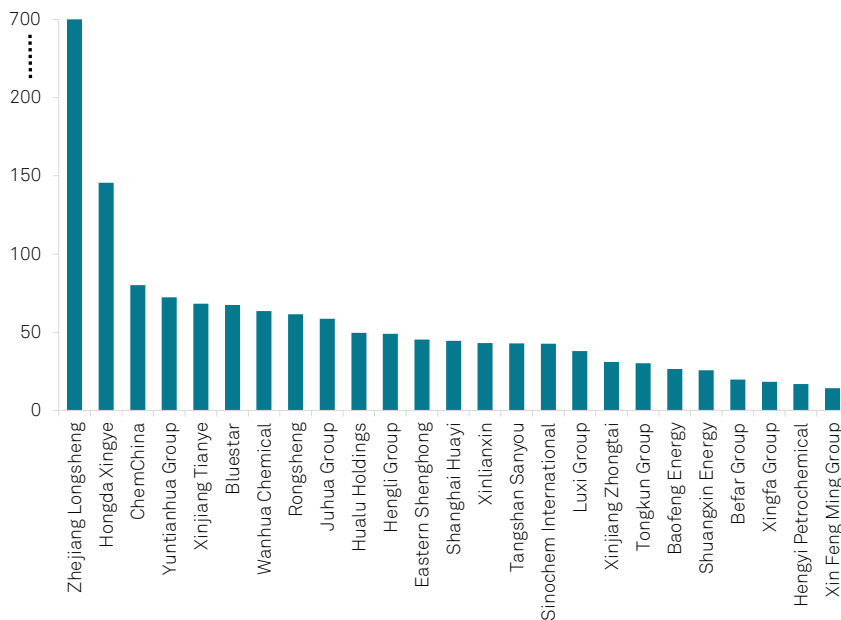


Note: 1. Revenue does not include trade business. 2. Period expenses include administration, selling and R&D expenses. 3. SG&A expenses ratio = Period expenses/Revenue. 4. Data for Eastern Shenghong is the average for 2018 and 2019.  
Source: Companies' annual reports, S&P Global (China) Ratings.  
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**Due to the high storage costs for many commodity chemicals, in our view, inventory turnover can also impact on a company's operating efficiency.** Inventory turnover is an important factor for chemical companies in terms of managing costs, and acts as a comprehensive indicator of how effectively a company can manage synergy between its purchases of inventory, production and sales. The average inventory turnover period in the industry is 45-80 days. Xin Feng Ming Group, Hengyi Petrochemical, Xingfa Group and Befar Group can turnover inventory at a faster rate than their peers, while Hongda Xingye and Zhejiang Longsheng have slower turnover capacity. Hongda Xingye's turnover rate has gradually declined in the past three years, which is mainly due to the large scale of its trading business, with the company increasing its inventory through increased purchases of products when prices are low. Zhejiang Longsheng has a very long turnover period for its products, because of its ongoing investment in real estate, resulting in increased inventory growth and unrealized sales. If its real estate business is excluded, the inventory turnover period for its chemical business is around 160 days. This is still high for the chemical industry, mainly because its dye products are specialty chemicals, which have a slower turnover rate than commodity chemicals.

Chart 16

## 2017-2019 Average Inventory Turnover Period



Note: Data for Eastern Shenghong is the average for 2018 and 2019.

Source: Wind, S&P Global (China) Ratings.

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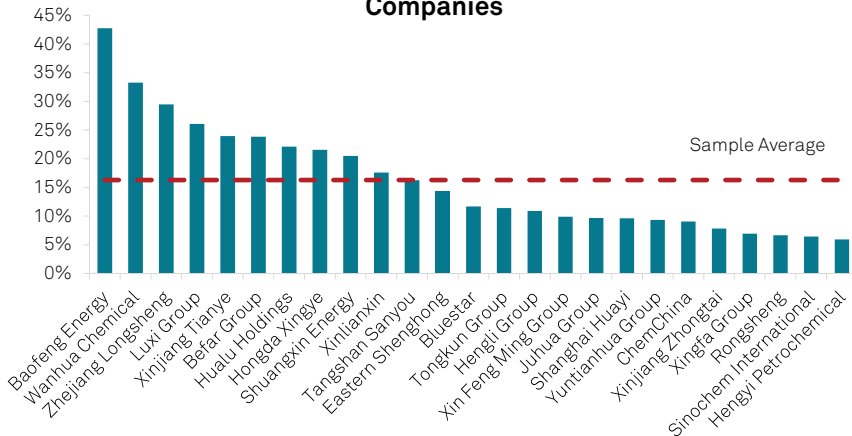
## Profitability

Profitability is a more comprehensive indicator of a company's competitive position. Having higher added value products, stronger pricing power, excellent cost and expenses controls are all conducive to improving a firm's profitability. The main metrics we look at when considering a chemical producer's profitability are EBITDA margin and return on capital (ROC).

**We believe that EBITDA margin reflects the added value and premium of chemical products, but more importantly, it reflects the company's ability to manage costs.** In our view, Baofeng Energy, Wanhua Chemical, Zhejiang Longsheng, Luxi Group, Befar Group and Hualu Holdings have better cost control ability or products with higher added value. From the chart below we can see that the EBITDA margin and ROC of these firms are higher than the industry average. In addition, the large-scale refining and chemical projects of Hengli Group, Rongsheng and Hengyi Petrochemical have entered operation, and their new high value-added petrochemical products and advanced production equipment can significantly improve their profitability.

Chart 17

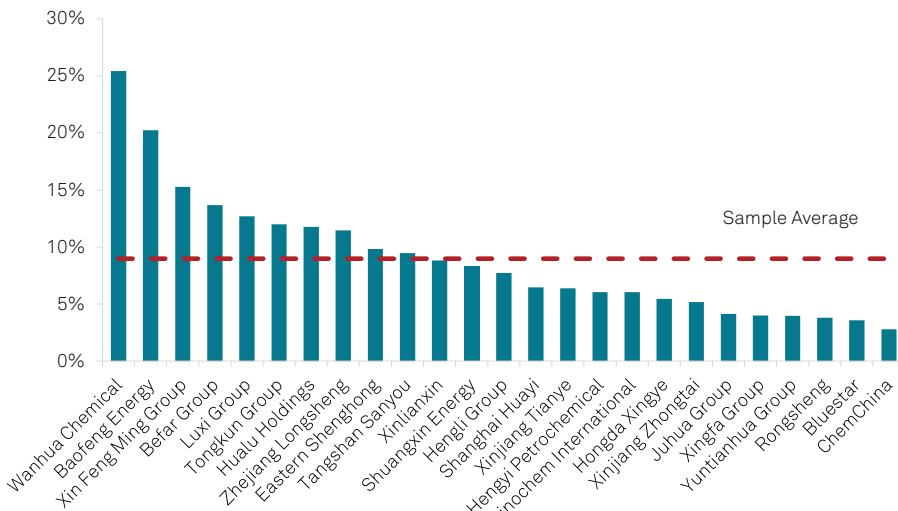
**2017-2019 Average EBITDA Margin of Chemical Companies**



Note: This chart displays the consolidated EBITDA of our sample, data may be influenced by entities' non-chemical operations. 2. Data of Eastern Shenghong is the average for 2018 and 2019.  
 Source: Wind, public information, S&P Global (China) Ratings.  
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Chart 18

**Average ROC of Chemical Companies in 2017-2019**



Note: Data for Eastern Shenghong is the average for 2018 and 2019.  
 Source: Wind, S&P Global (China) Ratings.  
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## Financial Risk Profile

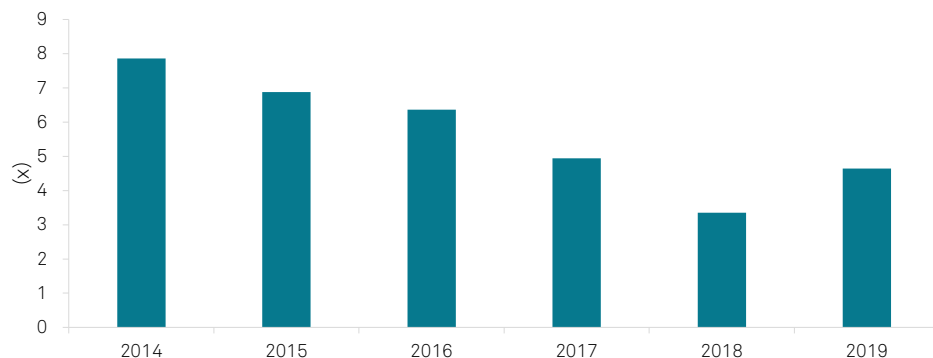
The commodity chemical sector is a typical cyclical industry. Although downstream demand is relatively wide, raw material prices fluctuate significantly, and changes in product price have a clear impact on companies' profits and cash flow. While supply side reform in the chemical industry may not have been as far-reaching as in the steel, coal, cement and other sectors, related policies did improve the leverage level of chemical producers. Leverage levels in the chemical industry are more sensitive to changing raw material prices and the scale of capital



investment. After oil prices recovered in 2016, chemical producers have seen their leverage levels decline to some extent since 2017.

Chart 19

### 2014-2019 Leverage of Chemical Producers



Note: Chart displays median debt/EBITDA ratio of the 25 sampled entities for each year.

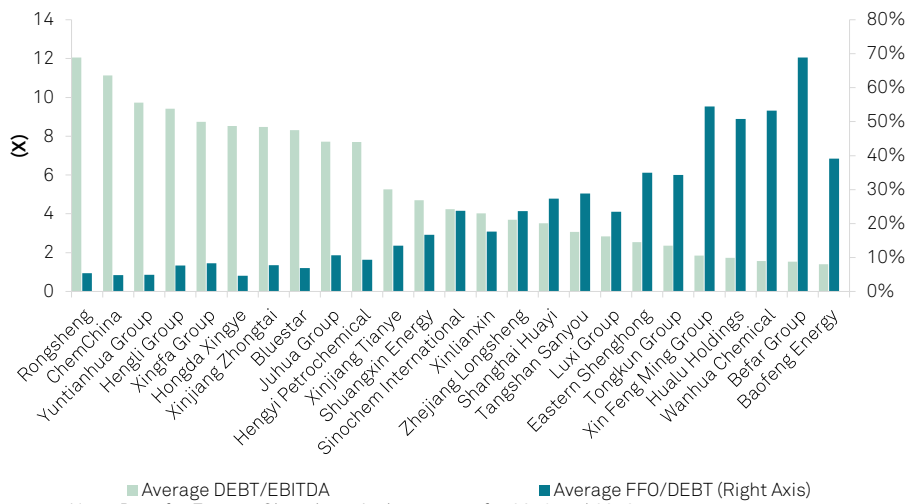
Source: Wind, companies' annual reports, S&P Global (China) Ratings.

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Leverage levels vary among chemical firms, due to their different growth strategies, product mix and other factors. For example, Rongsheng, Hengli Group and Hengyi Petrochemical have carried out large-scale capital investment and capacity expansion in recent years, with leverage increasing significantly as a result. However, after putting their integrated oil refinery projects into production, we expect the leverage of these companies to improve. After ChemChina acquired Syngenta overseas, its leverage level also changed significantly. However, Baofeng Energy, Wanhua Chemical, Hualu Holdings and other enterprises benefit from better profit levels, and their financial leverage is in a lower position in the industry. Although the historical financial leverage ratio of Befar Group has been relatively low, we expect its financial risk to increase in the next two years due to planned investment and construction of new projects.

Chart 20

2017-2019 Financial Ratios of Chemical Producers

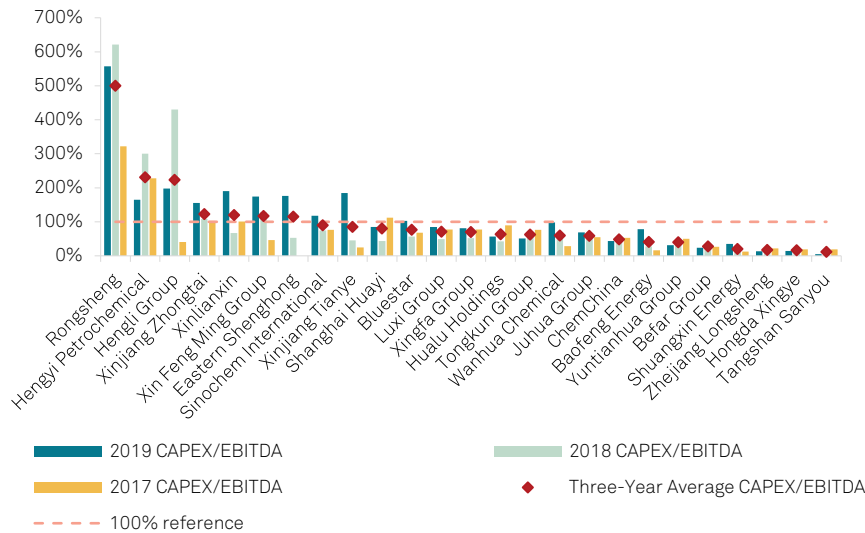


Note: Data for Eastern Shenghong is the average for 2018 and 2019.  
 Source: Wind, companies' annual reports, S&P Global (China) Ratings.  
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Against the backdrop of slowing economic growth and more stringent safety and environmental regulations, we expect the overall capital expenditure burden on chemical producers to remain stable, and the EBITDA of most firms in our sample would cover capital expenditure. In recent years, capital expenditure in the industry has generally been concentrated in the petrochemical and coal chemical sectors. This is particularly the case among chemical fiber companies such as Rongsheng, Hengli Group, Hengyi Petrochemical, Eastern Shenghong, and Xin Feng Ming Group, which have expanded their business upstream into oil refining sector. The chart below shows that after launching their large-scale refining projects in 2019, Hengli Group, Rongsheng and Hengyi Petrochemical saw a significant improvement in EBITDA coverage of capital expenditure. In addition, the capital expenditure of coal chemical firms such as Xinjiang Zhongtai, Xinjiang Tianye and Xinlianxin is mainly focused on technological transformation and expanding capacity. At present, the current round of capital investment for these companies is near completion.

Chart 21

2017-2019 Chemical Producers' CAPEX/EBITDA



Note: Data of Eastern Shenghong is from 2018 to 2019.  
 Source: Wind, company reports  
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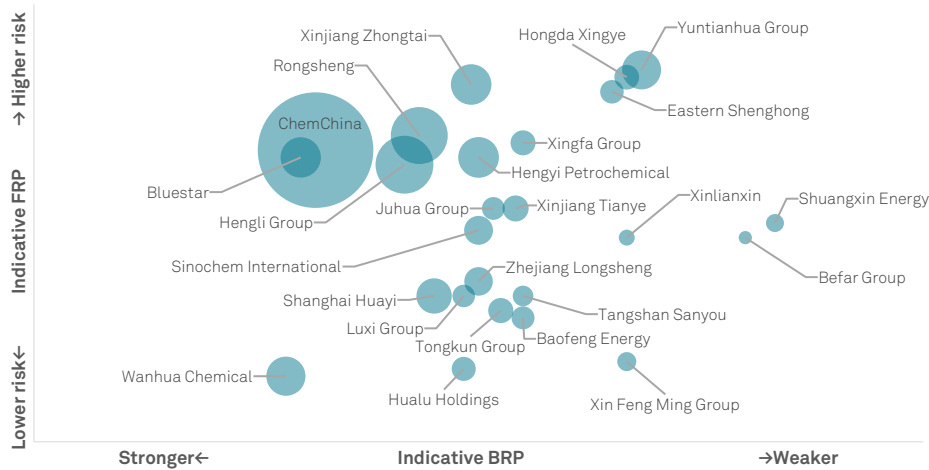
Supply-side reform has, in our opinion, led to a general improvement of the leverage levels of certain chemical companies, however significant differences remain between them. Influenced by the high cyclicity of chemical industry, the financial risk of most companies is at a moderate-to-high level. When the cycle enters a downturn, firms with a narrow range of products or aggressive expansion plans may face pressure from rising financial risk.

## Indicative Distribution of Business and Financial Risk Profiles

Based on the above analysis, we have arrived at the indicative business and financial risk profiles of the 25 sampled firms. Through combining the business and financial risk profiles of a company we can form a benchmark for our assessment of credit quality. From this starting point, we usually further consider the degree of diversification, capital structure, financial policy, management and governance, liquidity and other holistic factors to arrive at our evaluation of the company's SACP.

Chart 22

### Distribution of Sampled Chemical Producers' Indicative BRP & FRP



Note: The bubble size represents the scale of total assets.  
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## Government and Group Support

After arriving at the companies' SACP, we also consider the influence of government or group support on their credit quality. Although POEs account for a large proportion of players in the chemical industry, the number of leading SOEs is similar to that of POEs. In our opinion, the SOEs in our sample may receive varying degrees of government support. In our analysis, government support reflects two factors: the capacity and willingness of the government to provide support. Due to the different economic, financial and debt situations of different regions, indicative government support capacity varies. This is an important factor that affects the indicative issuer credit quality of companies in our sample. On the other hand, governments in our view generally have strong willingness to support the SOEs in our sample. Certain firms which act as consolidators in the industry are of very high importance to authorities. Other companies which are major players in the local economy or leading firms in the industry may also be of very high importance. In addition, our analysis of a local government's willingness to support also refers to historic support for locally administered SOEs, including how the local authority handled debt problems among such SOEs.

## Appendix

### List of Sampled Companies

No.	Entity Name	Abbreviated Name	Entity Type
1	Befar Group Co., Ltd	Befar Group	POE
2	China National Bluestar (Group) Co.,Ltd.	Bluestar	Centrally administered SOE
3	China National Chemical Corporation	ChemChina	Centrally administered SOE
4	Henan Xinlianxin Fertiliser Limited Company	Xinlianxin	POE
5	Hengli Group Co.,Ltd	Hengli Group	POE
6	Hongdaxingye Group Co.,Ltd.	Hongda Xingye	POE
7	Hualu Holdings Co., Ltd.	Hualu Holdings	Locally administered SOE
8	Inner Mongolia Shuangxin Energy and Chemical Co.,Ltd	Shuangxin Energy	POE
9	Jiangsu Eastern Shenghong Co.,Ltd.	Eastern Shenghong	POE
10	Juhua Group Corporation	Juhua Group	Locally administered SOE
11	Luxi Group Co.,Ltd.	Luxi Group	Centrally administered SOE
12	Ningxia Baofeng Energy Group Co.,Ltd.	Baofeng Energy	POE
13	Shanghai Huayi (Group) Company	Shanghai Huayi	Locally administered SOE
14	Sinochem International Corporation	Sinochem International	Centrally administered SOE
15	Tangshan Sanyou Alkali Industry Corporation (Group)	Tangshan Sanyou	No actual controller
16	Tongkun Group Co.,Ltd	Tongkun Group	POE
17	Wanhua Chemical Group Co.,Ltd.	Wanhua Chemical	Locally administered SOE
18	Xinfengming Group Co.,Ltd	Xin Feng Ming Group	POE
19	Xinjiang Tianye (Group) Co.,Ltd.	Xinjiang Tianye	Locally administered SOE
20	Xinjiang Zhongtai (Group) Co.,Ltd	Xinjiang Zhongtai	Locally administered SOE
21	Yichang Xingfa Group Co.,Ltd	Xingfa Group	Locally administered SOE
22	Yuntianhua Group Co.,Ltd	Yuntianhua Group	Locally administered SOE
23	Zhejiang Hengyi Group Co.,Ltd	Hengyi Petrochemical	POE
24	Zhejiang Longsheng Group Co.,Ltd	Zhejiang Longsheng	POE
25	Zhejiang Rongsheng Holding Group Co.,Ltd.	Rongsheng	POE

Note: The above enterprises are sorted by alphabetical order.

This report does not constitute a rating action.

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