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Highlights of Major General Chemical Manufacturers' Financial Results for Fiscal Year 2017

The following is Japan Credit Rating Agency, Ltd. (JCR)'s perception of the current status and highlights for rating concerning the financial results for the fiscal year ended March 2018 (FY2017) and earnings forecasts for FY2018 of Japan's seven general chemical manufacturers (the "Seven Companies"): ASAHI KASEI CORPORATION, Showa Denko K.K. (with January-December accounting period), SUMITOMO CHEMICAL COMPANY, LIMITED, TOSOH CORPORATION, Mitsui Chemicals, Inc., Mitsubishi Chemical Holdings Corporation and Ube Industries, Ltd.

1. Industry Trend

The business environment surrounding general chemical manufacturers was good in general in FY2017. Despite the stronger yen and higher crude oil prices toward the end of the fiscal year, these conditions for the full fiscal year ended up roughly within the ranges they assumed at the beginning of the term. The heightened geopolitical risks in the Middle East and East Asia did not materially have an adverse effect on the business. The business activities in advanced countries were by and large robust and emerging economies also saw steady growth.

As for bulk chemicals, domestic ethylene production increased 2.7% year on year to 6.46 million tons in FY2017. The domestic ethylene centers operated in almost full capacity as did in FY2016, at an annual average rate of 96.9%. This growth is attributed to steady domestic demand and buoyed demand for ethylene in overall Asia, as well as relatively less regular maintenance or turnarounds of facilities. Expanded consumer spending in emerging countries boosted up demands for derivatives such as polyolefin. Stricter environment regulation in China substantially curbed supply of products. On the back of these facts, tight supply and demand balance for petrochemical products continued. Demand for raw materials of synthetic fibers and urethane remained steady as well. For some products, supply and demand balance was tightened sharply due partly to impact of overseas equipment failure. Spreads from methyl methacrylate (MMA) as well as acrylonitrile, caprolactam, TDI, etc. were markedly improved and expanded to become a significantly positive factor for results.

The business environment for specialty chemicals was largely favorable. In response to good performance of finished products such as automobiles and electronic devices, demands for highly functional materials remained steady. Supporting factors in terms of business performance included stable movement of raw materials prices. While smartphone demand decelerated toward the end of the fiscal year, a broader base of demands for semiconductors and electronic components became a positive factor. Demand for raw materials related to secondary lithium-ion batteries showed an increasing trend in response to increases in production of electric vehicles and hybrid cars. Demand for agricultural chemicals or pesticides, which had been weak due partly to economic slowdown in Brazil, showed signs of recovery of the entire global market in 2017. The healthcare business centering on pharmaceuticals is facing increasingly harsh business conditions due to the government's stricter policy of curbing medical costs. Nevertheless, each company's core products or drugs performed almost stable.

2. Financial Results

The Seven Companies' combined operating EBITDA in FY2017 (result for the year through December 2017 for Showa Denko) rose to 1.6 trillion yen, the record high renewed for the third straight year. (This combined figure includes "Gross margin - Selling, general and administrative expenses (SG&A) + Depreciation expense" for SUMITOMO CHEMICAL and Mitsubishi Chemical Holdings, which implement the International Financial Reporting Standards (IFRS).) (See Chart 1.) It more than doubled from 0.8 trillion yen for FY2012, the most recent bottom. Bulk chemical operations increased income due to higher operating rates of entire facilities as well as improved terms of trade along with a rise in product prices. In the specialty chemicals field, good performance of the highly functional materials contributed to income and income growth boosted business result. When it comes to operating income by company (IFRS-based core operating income for SUMITOMO CHEMICAL and

Mitsubishi Chemical Holdings; compared on the same basis for FY2016), all of the Seven Companies secured an increase in operating income. Asahi Kasei achieved the first year-on-year increase in two years and Showa Denko did in 10 years. TOSOH renewed the record high for the third straight year and Mitsui Chemicals did for the second straight years. SUMITOMO CHEMICAL and Mitsubishi Chemical Holdings hit the record high virtually under IFRS. UBE Industries achieved operating income at the second highest level of the record instead of renewing the record high. (See Chart 2.)

On the assumption of respective companies' initial forecasts as of the beginning of the year, the Seven Companies' combined EBITDA (including "Gross margin - SG&A + Depreciation expense" for SUMITOMO CHEMICAL and Mitsubishi Chemical Holdings expected by JCR) for FY2018 (year through December 2018 for Showa Denko) will decline modestly from that for FY2017 but is projected to be 1.6 trillion level for the second consecutive year. Turning to operating income by company, the five companies of ASAHI KASEI, SUMITOMO CHEMICAL, TOSOH, Mitsubishi Chemical Holdings and Ube Industries forecast the operating income decline, factoring worsened terms of bulk chemicals trade into operating income. On the other hand, Showa Denko and Mitsui Chemicals forecast operating income growth. Notably, Showa Denko will see a significant increase in income due primarily to better conditions for graphite electrodes business and M&A effects. Its operating income is expected to reach 100.0 billion level for the first time.

On the financial front, improvement has advanced when viewed as a whole. The Seven Companies' total interest-bearing debt reached 3.8 trillion yen as of the end of FY2017, down by slightly more than 250.0 billion yen from a year earlier. Their combined shareholders' equity (equity attributable to owners of the parent for SUMITOMO CHEMICAL and Mitsubishi Chemical Holdings) as of the end of FY2017 increased to 5.1 trillion from 4.5 trillion a year earlier. It was attributable to their good business performance as well as benefit from reduction of some companies' tax burden after corporate income tax cut in the U.S. As a result of these, the entire industry's DER (the total interest-bearing debt/ combined shareholders' equity) as of March 31, 2018 further improved from 0.91 a year earlier to 0.74 (see Chart 3). All of the Seven Companies achieved lower DERs as at end-March 2018 as compared to the same period of the previous year.

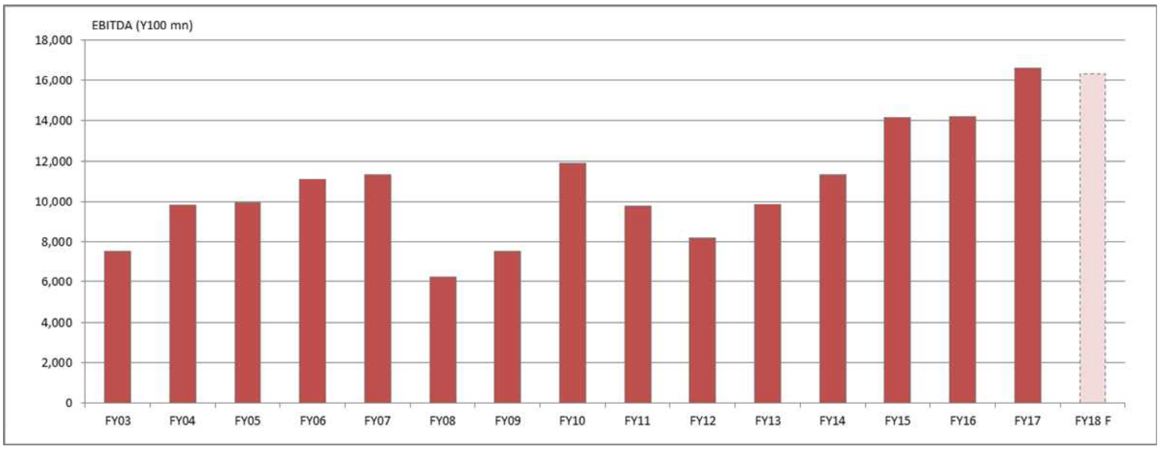
3. Highlights for Rating

For FY2018, the sustainability of good performance will still be highlighted. The exchange rate is assumed to be 105 yen/ dollar by the four companies and 110 yen/ dollar by the three companies, as compared with about 111 yen/ dollar for FY2017. While it remains around 109 yen/ dollar recently, the companies have slightly different views of exchange rate due partly to further yen appreciation toward March 2018. Though each company's sensitivity to exchange rate depends on business performance, the yen remaining strong against the dollar will put downward pressure on every company's business result. Naphtha prices are estimated to be between mid-40 thousand yen and 50 thousand yen/ kl by the six companies reporting financial results in March, raised from the lower half of 40 thousand yen level for FY2017. Overseas facilities' troubles will likely be solved, and effects of pushing up chemical product prices will be diminished accordingly. Since there will be more ethane crackers operating with use of shale gas from North America, the business environment can be gradually fiercer. Yet, the constitution of business has been improved and reinforced through structural reforms. In 2018, there will be relatively a lot of turnarounds or regular maintenance of the naphtha cracker in Asia. Unless any significant change occurs in domestic and overseas economic trends, sales of bulk chemicals are considered to remain solid. The key point will be whether the companies can maintain earnings at a high level while ensuring solid top-line growth by a combination of growth strategies including expanded sales of highly functional materials.

Each of the companies is taking an active investment stance toward future growth. Therefore, research and development expenses for FY2018 are planned to increase from FY2017 by all of the Seven Companies (Chart 4). The Seven Companies' combined capital expenditures for FY2018 amount to 836.0 billion yen, up more than 20% as compared to 687.6 billion yen for FY2017. The six companies excluding Ube Industries plan to increase capital investments. Relatively large increases are planned as shown by Asahi Kasei's 48.1% year-on-year increase and TOSOH's 72.2%. In terms of investment and loan, SUMITOMO CHEMICAL will investment 100.0 billion yen in the second phase plan for Rabigh Refining and Petrochemical Company. Due to such growth investments, some companies including SUMITOMO CHEMICAL will likely see an increase in interest-bearing debt toward the end of FY2018. Nevertheless, sound financial structures will likely be maintained by and large, unless a large M&A takes place in FY2018. In each company's financial management, the noteworthy point is whether the company can establish a virtuous cycle whereby fruits of growth investments are taken to reinforce the finance base and next investment capacity can be boosted, while enforcing financial discipline.

Mikiya Kubota, Takeshi Fujita

(Chart 1) Combined EBITDA of Seven General Chemical Manufacturers



*1 EBITDA = Operating Profit + Depreciation Expense + Amortization Expense

*2 IFRS implemented by Mitsubishi Chemical Holdings from FY2016 and SUMITOMO CHEMICAL from FY2017.

(Chart 2) Consolidated Business/ Financial Performance of Seven General Chemical Manufacturers

(JPY100 mn, times, %)

		Net Sales	Operating Income	Ordinary Income	Net Income	Interest-bearing Debt	Equity Capital	Total Assets	DER	Equity Ratio
ASAHI KASEI	FY2016	18,829	1,592	1,606	1,150	4,020	11,513	22,545	0.35	51.1%
(3407)	FY2017	20,422	1,984	2,125	1,702	3,011	12,873	23,161	0.23	55.6%
	FY2018 F	21,550	1,900	1,990	1,400	—	—	—	—	—
Showa Denko	FY2016	6,711	420	386	123	3,419	3,145	9,326	1.09	33.7%
(4004)	FY2017	7,803	778	639	334	3,287	3,664	10,247	0.90	35.8%
	FY2018 F	9,350	1,370	1,315	850	—	—	—	—	—
TOSOH	FY2016	7,430	1,112	1,130	756	1,398	4,132	7,826	0.34	52.8%
(4042)	FY2017	8,228	1,305	1,322	887	1,078	4,908	8,528	0.22	57.6%
	FY2018 F	8,500	1,100	1,120	760	—	—	—	—	—
Mitsui Chemicals	FY2016	12,122	1,021	971	648	4,372	4,496	13,255	0.97	33.9%
(4183)	FY2017	13,285	1,034	1,102	715	4,605	5,111	14,441	0.90	35.4%
	FY2018 F	14,800	1,060	1,120	800	—	—	—	—	—
Ube Industries	FY2016	6,165	349	333	241	2,086	2,865	7,093	0.73	40.4%
(4208)	FY2017	6,955	502	507	316	1,939	3,153	7,431	0.61	42.4%
	FY2018 F	7,400	440	455	305	—	—	—	—	—

		Net Sales	Core Operating Income	Operating Income	Net Income	Interest-bearing Debt	Equity Attributable to Shareholders of the Parent	Total Assets	DER	Ratio of equity attributable to owners of the parent to total assets
SUMITOMO CHEM	FY2016	19,390	1,845	1,264	765	8,840	8,126	28,781	1.09	28.2%
(4005)	FY2017	21,905	2,626	2,509	1,337	8,421	9,271	30,686	0.91	30.2%
	FY2018 F	24,900	2,400	2,050	1,300	—	—	—	—	—
Mitsubishi Chemical HD	FY2016	33,760	3,075	2,686	1,562	16,937	10,913	44,635	1.55	24.5%
(4188)	FY2017	37,244	3,804	3,557	2,117	16,061	12,857	47,005	1.25	27.4%
	FY2018 F	39,300	3,550	3,370	1,840	—	—	—	—	—

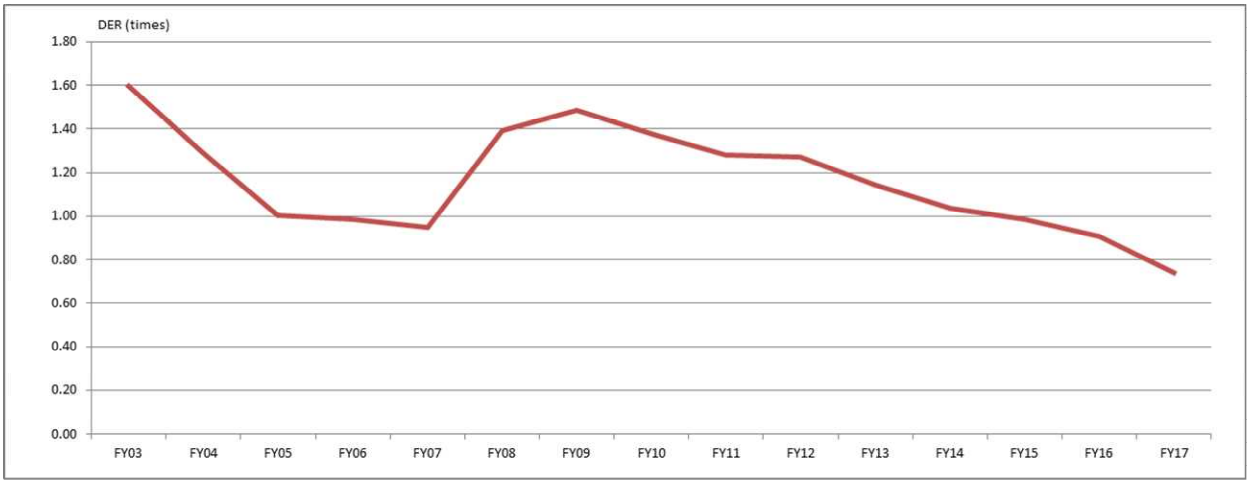
*1 IFRS implemented by Mitsubishi Chemical Holdings and SUMITOMO CHEMICAL. Figures for FY2016 are under IFRS.

*2 Core operating income is obtained from operating income under IFRS excluding non-recurring items.

*3 Net income is net income attributable to owners of the parent company (JGAAP) or net income attributable to owners of the parent (IFRS).

*4 Interest-bearing debt is the sum of borrowings, corporate bonds and CP. For Showa Denko, the equity content of subordinated loans is considered.

(Chart 3) Combined DER of Seven General Chemical Manufacturers



* IFRS implemented by Mitsubishi Chemical Holdings from FY2016 and SUMITOMO CHEMICAL from FY2017.

(Chart 4) R&D Expenses/ Capital Expenditures of Seven General Chemical Manufacturers

(JPY 100mn)

	R&D expenses		Capital expenditures	
	FY2017	FY2018 F	FY2017	FY2018 F
ASAHI KASEI (3407)	857	910	1,013	1,500
Showa Denko (4004)	185	208	413	490
SUMITOMO CHEMICAL (4005)	1,653	1,690	1,588	1,810
TOSOH (4042)	155	160	395	680
Mitsui Chemicals (4183)	334	360	812	840
Mitsubishi Chemical HD (4188)	1,388	1,600	2,252	2,640
Ube Industries (4208)	132	140	403	400
Total of 7 Companies	4,704	5,068	6,876	8,360

*Based on IFRS for SUMITOMO CHEMICAL and Mitsubishi Chemical Holdings.

*For Showa Denko, result for the year through December 2017 and forecast for the year through December 2018.

(Source: Charts 1 through 4 prepared by JCR based on financial materials of above companies)

<Reference>

Issuer: ASAHI KASEI CORPORATION

Long-term Issuer Rating: AA Outlook: Stable

Issuer: Showa Denko K.K.

Long-term Issuer Rating: A- Outlook: Stable

Issuer: SUMITOMO CHEMICAL COMPANY, LIMITED

Long-term Issuer Rating: A+ Outlook: Stable

Issuer: TOSOH CORPORATION

Long-term Issuer Rating: A Outlook: Positive

Issuer: Mitsui Chemicals, Inc.

Long-term Issuer Rating: A Outlook: Positive

Issuer: Mitsubishi Chemical Holdings Corporation

Long-term Issuer Rating: A+ Outlook: Positive

Issuer: Ube Industries, Ltd.

Long-term Issuer Rating: A- Outlook: Positive

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