

## Highlights of Semiconductor Production Equipment Manufacturers' Financial Results for Fiscal Year Ended March 2023

The following are 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 2023 (FY2022) and earnings forecasts for FY2023 of three semiconductor production equipment manufacturers (the three "Companies"): DISCO CORPORATION ("DISCO"), SCREEN Holdings Co., Ltd., ("SCREEN") and Tokyo Electron Limited ("Tokyo Electron").

### 1. Industry Trend

According to Semiconductor Equipment and Materials International ("SEMI") and other data, net sales of semiconductor production equipment ("SPE") in 2022 were USD 107.6 billion (up 5% year on year), a record high for the third consecutive year, over USD 100 billion for the second consecutive year. In anticipation of an increase in demand for semiconductors, capital investments by semiconductor manufacturers and others were active, mainly in the first half of the year. On a quarterly basis, however, the net sales growth rate fell to 1% year on year in the fourth quarter (from October to December). In response to the deterioration in the semiconductor memory market, there was a growing trend mainly among memory manufacturers to restrain capital investments. As memory manufacturers had expanded their supply capacity, demand for smartphones, PCs, and other devices had declined. This decline in demand is attributable to a reactionary decline in demand following the stay-home demand under the COVID-19 pandemic and a deterioration in consumer sentiment due to the ongoing inflation, etc. In addition, the strengthening of U.S. export restrictions on China announced in October 2022 is said to have had a negative impact on the SPE market. Looking at the sales of SPE by region in 2022, China, which is strengthening the semiconductor industry as a national policy, became the largest market for the third consecutive year, but saw a 5% decline from the previous year. South Korea, where leading memory manufacturers are located, decreased sales by 14%, falling to third from second place in the previous year. Taiwan, which ranked third last year, rose 8% to second place.

SEMI announced in December 2022 that sales of SPE for 2023 will be below the previous year's level. A decline in capital expenditures in the semiconductor memory field, such as DRAM and NAND flash, is expected to be significant, and capital expenditures in the foundry and logic fields are assumed to shrink too. The latest year-on-year fall in SPE sales was a 7% down in 2019, which was also mainly caused by the deteriorated memory market. However, the current memory slump is considerably severer than it was. The impact of the tightening of U.S. export restrictions on China is another cause for concern, and Japan is moving in step with U.S. restrictions on exports to China. SEMI expects the year-on-year decline rate in SPE sales in 2023 to be larger than in 2019. On the other hand, in response to heightened geopolitical risks and the semiconductor shortage that once became a serious problem, major countries/regions other than China are increasingly attracting semiconductor factories in their own countries/regions using subsidies. Semiconductors are now positioned as indispensable strategic materials for economic security and their significance has been recognized again. They are also drawing attention as a key device toward realizing a digital society and the decarbonized society.

### 2. Financial Results

In this section, JCR primarily mentions the total figures of the three Companies of DISCO, SCREEN and Tokyo Electron. Among the three Companies, the business size of Tokyo Electron is large and the total figures of the three are susceptible to those of Tokyo Electron. Tokyo Electron, one of the world's leading SPE manufacturers, produces a wide-range of products mainly in semiconductor front-end process and is a symbol for the domestic SPE industry.

In FY2022, the three Companies' total net sales were 2,953.9 billion yen (up 10.7% year on year) and operating income was 804.5 billion yen (up 7.0% year on year), for the third consecutive year of increase in both net sales and operating income. This is attributable to the fact that the business environment continued to be favorable until the middle of FY2022 as mentioned above. In addition to new equipment, demand for consumables, parts and services was also firm. While the operating income margin declined

from 28.2% in the previous fiscal year, it remained at a high level of 27.2%. In terms of individual companies, all three Companies saw an increase in net sales and operating income, setting a new record high for them. DISCO and Tokyo Electron achieved a record high for the third consecutive year, and SCREEN for the second consecutive year. Meanwhile, regarding the total earnings of the three Companies for each half year, they have improved/expanded after hitting the latest bottom in the first half of FY2019, but passed a peak in the first half of FY2022. This is on the back of the aforementioned changes in the business environment.

In FY2022, the three Companies' total operating cash flow grew to 581.9 billion yen (up 29.7% year on year). In addition, the financial structure of the three Companies continues to be favorable. The equity ratio has been maintained at a high level, the 60% range, since the end of FY2007, and stood at 66.8% as of the end of FY2022 (68.0% at the end of FY2021). In addition, liquidity on hand increased further, and interest-bearing debt was maintained at an extremely low level.

### 3. Highlights for Rating

In the announcement of full-year earnings forecast for FY2023, SCREEN projects an increase in net sales and operating income, while, in contrast, Tokyo Electron forecasts a decrease in net sales and operating income. This difference seems to be due to the level of the sales ratio of products for semiconductor memory devices and the production capacity to meet demand. SCREEN said that its sales ratio for products for memory was lower than that of Tokyo Electron, and that its production capability was insufficient to meet demand. SCREEN's net sales and operating income are planned to reach a record high for the third consecutive year. DISCO only announced earnings forecasts for a quarter ahead as in the past. For the first quarter of FY2023, it forecasts a year-on-year decrease of 10.8% and 23.6% in net sales and operating income respectively. DISCO also discloses a forecast of shipments, which is useful in measuring customers' investment appetite. For the first quarter of FY2023, DISCO plans to reduce shipments by 13.2% year on year. DISCO has a broad customer base, and the ratio of sales to products for memory is lower than that of Tokyo Electron. However, because DISCO's back-end process SPE is more susceptible to trends in demand for end products, a decline in demand for smartphones, PCs, etc. is likely to have an impact on its performance. Moreover, with a high proportion of sales denominated in foreign currencies among SPE manufacturers, DISCO's forex assumption of yen appreciation set high year on year is a factor of a downward pressure on earnings and shipments.

The immediate focus is on demand trends for SPE, which will greatly influence future performance, and JCR particularly keeps eyes on the depth and length of the current downward cycle of demand. SEMI announced in December 2022 that sales of SPE would recover in 2024. In addition, Tokyo Electron has expressed its view that 2024 will be a big year. In support of this view, it is noteworthy whether a clear reversal in demand can be confirmed sometime in FY2023. Looking at the first and second half periods of the two Companies that announced their FY2023 full-year plans, SCREEN forecasts a year-on-year net sales increase and an operating income decrease for the first half, and an increase in both net sales and operating income for the second half. However, regarding the SPE business only, SCREEN plans a year-on-year increase in net sales and operating income for the both first and second half, suggesting that the growth trend on a half-year basis is maintained. China, under export restrictions by the U.S., is further shifting its focus of equipment procurement from advanced products, which are targets of regulation, to mature nodes. Partly as a result of this, SCREEN sees that sales to China will rise significantly in FY2023. In addition, it also expects to see a remarkable increase in sales to North America. Meanwhile, Tokyo Electron plans a year-on-year decrease in net sales and operating income for both first and second half periods, but is clearly aware of a turnaround in earnings in the second half FY2023. On a semi-annual basis, it expects to hit a bottom in earning in the first half of the year, and JCR will pay attention to the moves.

Moreover, the impacts of soaring parts/materials prices and measures against them are also attracting attention. Since the second half of FY2022, SCREEN and Tokyo Electron have cited the soaring parts/materials prices as a factor pushing down operating income. While its impact itself will unlikely be necessarily large, it cannot be ignored in terms of the potential impact on the FY2023 earnings amid the current severe business environment.

JCR maintains Tokyo Electron's rating outlook Positive. Looking back, the outlook changed from Stable to Positive in the rating review in December 2021, and was kept as Positive in the review in December 2022. The December 2022 rating review reflected JCR's view at the time that the performance landing was unlikely to be prolonged, given semiconductors' position as a strategic material for major countries/regions, and the medium-term growth prospects for semiconductors with expanding uses.

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(Chart 1) Business Performance

(Unit: Yen in 100 mn)

		FY2021			FY2022			FY2023		
		Actual	1st half	2nd half	Actual	1st half	2nd half	Forecast	1st half	2nd half
DISCO (Security code: 6146)	Net Sales	2,537	1,160	1,376	2,841	1,392	1,448	-	-	-
	Operating Income	915	399	515	1,104	548	555	-	-	-
	Operating Income Margin(%)	36.1	34.4	37.4	38.9	39.4	38.3	-	-	-
	Net Income	662	285	376	828	406	422	-	-	-
SCREEN (Security code: 7735)	Net Sales	4,118	1,872	2,246	4,608	2,184	2,424	4,950	2,290	2,660
	Operating Income	612	240	371	764	381	382	850	355	495
	Operating Income Margin(%)	14.9	12.9	16.6	16.6	17.5	15.8	17.2	15.5	18.6
	Net Income	454	176	278	574	296	278	580	220	360
Tokyo Electron (Security code: 8035)	Net Sales	20,038	9,325	10,712	22,090	11,828	10,261	17,000	7,900	9,100
	Operating Income	5,992	2,746	3,246	6,177	3,501	2,675	3,930	1,610	2,320
	Operating Income Margin(%)	29.9	29.5	30.3	28.0	29.6	26.1	23.1	20.4	25.5
	Net Income	4,370	2,002	2,368	4,715	2,673	2,042	3,000	1,200	1,800
Total of the three Companies	Net Sales	26,694	12,358	14,336	29,539	15,405	14,134	-	-	-
	Operating Income	7,520	3,386	4,133	8,045	4,432	3,613	-	-	-
	Operating Income Margin(%)	28.2	27.4	28.8	27.2	28.8	25.6	-	-	-
	Net Income	5,487	2,464	3,023	6,119	3,377	2,742	-	-	-

(Source: Prepared by JCR based on the financial materials of the above companies)

(Chart 2) Cash Flows & Financial Conditions

(Unit: Yen in 100 mn)

		End-FY2021	End-FY2022
DISCO	Operating Cash Flow	836	817
	Interest-bearing Debt	0	N.A.
	Ready Liquidity	1,257	1,630
	Equity Capital	2,926	3,467
	Equity Ratio (%)	72.3	74.0
	D/E Ratio (times)	0.00	N.A.
SCREEN	Operating Cash Flow	817	739
	Interest-bearing Debt	442	288
	Ready Liquidity	1,330	1,755
	Equity Capital	2,477	2,998
	Equity Ratio (%)	53.9	53.3
	D/E Ratio (times)	0.18	0.10
Tokyo Electron	Operating Cash Flow	2,833	4,262
	Interest-bearing Debt	43	N.A.
	Ready Liquidity	3,712	4,730
	Equity Capital	13,351	15,875
	Equity Ratio (%)	70.5	68.7
	D/E Ratio (times)	0.00	N.A.
Total of the three Companies	Operating Cash Flow	4,487	5,819
	Interest-bearing Debt	485	N.A.
	Ready Liquidity	6,301	8,117
	Equity Capital	18,755	22,342
	Equity Ratio (%)	68.0	66.8
	D/E Ratio (times)	0.03	N.A.

(Note 1) Assuming DISCO and Tokyo Electron did not have any outstanding balance of bonds and loans as of end-FY2022  
(Source: Prepared by JCR based on the financial materials of the above companies)

<Reference>

Issuer: DISCO CORPORATION

Long-term Issuer Rating: AA- Outlook: Stable

Issuer: SCREEN Holdings Co., Ltd.

Long-term Issuer Rating: A Outlook: Stable

Issuer: Tokyo Electron Limited

Long-term Issuer Rating: AA Outlook: Positive

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