

# TSMC (2330.TW/2330 TT)

## Earnings upgrade cycle to drive up valuation

FTSE4Good TIP Taiwan ESG Index stock

### Outperform · Resumed

Price as of July 15 (NT\$)	1,040
12M target price (NT\$)	1,270
Previous target price (NT\$)	N/A
Unchanged / Revised up (down)	N/A
Upside (%)	22.1

#### Key message

- 2Q24 sales beat; upside to 2024 sales guidance.
- 2025F margin expansion on rising ASP.
- Upside to 2025 capex, but capex intensity to remain low.

#### Trading data

Mkt cap (NT\$bn/US\$m)	26,971 / 828,397
Outstanding shares (mn)	25,934
Foreign ownership (mn)	19,276
3M avg. daily trading (mn)	33.17
52-week trading range (NT\$)	519 - 1,080

Performance	3M	6M	12M
Absolute (%)	29	77.5	76
Relative (%)	12.2	41.4	37.8

#### Quarterly EPS

NT\$	1Q	2Q	3Q	4Q
2023	7.98A	7.01A	8.14A	9.21A
2024	8.70A	9.07F	10.75F	11.62F
2025	10.92F	11.14F	13.45F	15.03F

#### Share price chart



Source: TEJ

#### Event

We resume coverage of TSMC. The company will host its 2Q24 earnings conference on July 18. We are positive on the counter as: (1) we believe upward revision of consensus earnings will continue due to its leading industry position; (2) stronger-than-expected demand for N3; and (3) margin expansion in 2025F on rising prices for both foundry and CoWoS services.

#### Impact

**2Q24 sales beat; upside to 2024 sales guidance.** 2Q24 sales came in at NT\$674bn, up 13.6% QoQ and 40.1% YoY, 2.2% above the high end of its guidance range, thanks to strong demand for N3, and upside for N4 and N5, mainly from Nvidia (US) and Bitmain Technologies (CN). For 3Q24, we expect TSMC to guide low-teens percent QoQ growth, versus our estimate of 13% QoQ growth, with mild margin contraction on higher electricity prices and margin dilution due to N3 ramp-up. With strong 2Q-3Q24F sales, we believe there is a strong chance TSMC will revise up 2024 sales growth guidance from 20-25% YoY to 25-30% YoY, with upside on upward revision to Apple (US) demand, CoWoS-L ramp-up, and faster-than-expected N3 capacity ramp-up in 2H24 (Fab18).

**2025F margin expansion on rising ASP.** With support from Nvidia, we believe most clients will accept TSMC's wafer price hikes for advanced nodes and packaging. Due to inflated costs stemming from higher electricity prices and overseas expansion, we expect TSMC to increase foundry pricing by 3-7% for N3, N4, and N5 in 2025, which accounts for 70%+ of sales. Due to higher ASP, we forecast TSMC's gross margin will rise from 51.7% in 2024 to 53.7% in 2025.

**Upside to 2025 capex, but capex intensity to remain low.** We expect TSMC to increase 2025 capex to US\$35-36bn, up 15% YoY, from US\$31bn in 2024, due to stronger-than-expected N3 demand from Intel (US), Bitmain Technologies, and Qualcomm (US), and greater expansion of CoWoS and SoIC capacity. However, in anticipation of price hikes, we forecast TSMC will post 2025 sales growth of 20% YoY, which will exceed capex growth, thus capex intensity will remain low at 34% in 2025, in line with guidance that capex intensity will level off in the coming years.

#### Valuation & Action

We resume coverage with Outperform and a target price of NT\$1,270, based on 25x 2025F EPS, and recommend investors accumulate shares on price pullback, due to: (1) we believe upward revision of consensus earnings will continue due to its leading industry position; (2) rising ASP on increasing foundry pricing and product mix improvement; and (3) benefits from Intel's incremental increases in outsourcing, mobile AP N3 migration, and the AI megatrend. We believe PE of 25x (cycle peak) is justified on extended order visibility and current SOX forward PE of 25-26x.

#### Risks

Global macro and geopolitical uncertainties; prolonged inventory correction.

#### Key financials and valuations

	Dec-21A	Dec-22A	Dec-23A	Dec-24F	Dec-25F
Revenue (NT\$m)	1,587,415	2,263,891	2,161,736	2,812,596	3,380,724
Gross profit (NT\$m)	819,537	1,348,355	1,175,111	1,455,194	1,814,141
Operating profit (NT\$m)	649,981	1,121,279	921,088	1,157,176	1,475,617
Net profit (NT\$m)	596,540	1,016,530	838,498	1,040,615	1,310,390
EPS (NT\$)	23.01	39.20	32.34	40.13	50.54
Cash DPS (NT\$)	11.00	11.00	13.00	16.00	18.00
EPS growth (%)	15.2	70.4	(17.5)	24.1	25.9
PE (x)	45.2	26.5	32.2	25.9	20.6
PB (x)	12.4	9.2	7.8	6.4	5.3
EV/EBITDA (x)	24.5	16.7	17.6	13.6	11.1
Net debt to equity (%)	Net cash	Net cash	Net cash	Net cash	Net cash
Dividend yield (%)	1.1	1.1	1.3	1.5	1.7
Return on average equity (%)	29.7	39.8	26.2	27.2	28.2

Source: Company data, KGI Research estimates

**2Q24 sales beat implies upside to 2024 guidance.** 2Q24 sales came in at NT\$674bn, up 13.6% QoQ and 40.1% YoY, 2.2% above the high end of its guidance range, thanks to strong demand for N3, and upside for N4 and N5, mainly from Nvidia and Bitmain Technologies. For 3Q24, we expect TSMC to guide low-teens percent QoQ growth, versus our estimate of 13% QoQ growth, with mild margin contraction on higher electricity prices, margin dilution due to N3 ramp-up, and costs associated with conversion of N5 tools to N3.

With strong 2Q-3Q24F sales, we believe there is a strong chance TSMC will revise up 2024 sales growth guidance from 20-25% YoY to 25-30% YoY, with upside on upward revision to Apple demand, CoWoS-L ramp-up, and faster-than-expected N3 capacity ramp-up in 2H24 (Fab18). We forecast 2024 sales of NT\$2.81tn, up 30% YoY.

**Figure 1: Breakdown of 2Q-3Q24 forecasts vs. consensus**

NT\$m	2Q24F					3Q24F				
	KGI forecast	QoQ (%)	YoY (%)	Consensus	Diff. (%)	KGI forecast	QoQ (%)	YoY (%)	Consensus	Diff. (%)
Revenue	673,537	13.6	40.1	654,631	2.9	763,116	13.3	39.6	730,698	4.4
Gross profit	348,127	10.7	33.8	344,971	0.9	386,419	11.0	30.3	384,303	0.6
Operating profit	272,085	9.1	34.7	272,753	(0.2)	305,911	12.4	34.3	306,440	(0.2)
Net profit	235,119	4.3	29.3	234,384	0.3	278,707	18.5	32.1	276,672	0.7
EPS (NT\$)	9.07	4.3	29.3	9.07	(0.0)	10.75	18.5	32.1	10.70	0.5
Gross margin (%)	51.7	(1.4)ppts	(2.4)ppts	52.7	(1.0)ppts	50.6	(1.0)ppts	(3.6)ppts	52.6	(2.0)ppts
OP margin (%)	40.4	(1.7)ppts	(1.6)ppts	41.7	(1.3)ppts	40.1	(0.3)ppts	(1.6)ppts	41.9	(1.9)ppts
Net margin (%)	34.9	(3.1)ppts	(2.9)ppts	35.8	(0.9)ppts	36.5	1.6 ppts	(2.1)ppts	37.9	(1.3)ppts

Source: Bloomberg, KGI Research estimates

**2025F margin expansion on rising ASP.** During Computex 2024, Nvidia's CEO noted that Nvidia will support TSMC's price hikes, reflecting its value and inflated costs. With this support, we believe most clients will accept TSMC's eventual foundry price hikes for advanced nodes and advanced packaging.

From a strategic perspective, we see limited impact from higher foundry pricing on Nvidia's profitability, but Nvidia's move will pressure its competitors' margins and put them at a disadvantage in capacity allocation negotiations.

Due to inflated costs stemming from higher electricity prices and overseas expansion, we expect TSMC to increase foundry pricing by 3-7% for N3, N4, and N5 in 2025, which accounts for 70%+ of sales. Due to higher ASP, we forecast TSMC's gross margin will rise from 51.7% in 2024 to 53.7% in 2025.

In addition, quotes for upcoming CoWoS-L (for B100) will be 60-65% higher than those for CoWoS-S due to greater complexity. We forecast CoWoS-L will account for 15% of CoWoS shipments in 2024, which will rise to 33-36% in 2025.

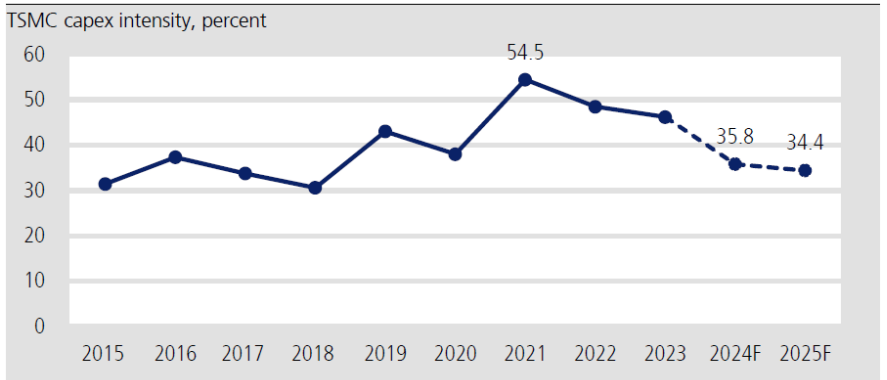
**Figure 2: Breakdown of 2024-25 forecasts vs. consensus**

NT\$m	2024F				2025F			
	KGI forecast	YoY (%)	Consensus	Diff. (%)	KGI forecast	YoY (%)	Consensus	Diff. (%)
Revenue	2,812,596	30.1	2,763,152	1.8	3,380,724	20.2	3,389,259	(0.3)
Gross profit	1,455,194	23.8	1,457,038	(0.1)	1,814,141	24.7	1,840,978	(1.5)
Operating profit	1,157,176	25.6	1,160,441	(0.3)	1,475,617	27.5	1,499,656	(1.6)
Net profit	1,040,615	24.1	1,034,311	0.6	1,310,390	25.9	1,328,863	(1.4)
EPS (NT\$)	40.13	24.1	39.92	0.5	50.54	25.9	50.76	(0.4)
Gross margin (%)	51.7	(2.6)ppts	52.7	(1.0)ppts	53.7	1.9 ppts	54.3	(0.7)ppts
OP margin (%)	41.1	(1.5)ppts	42.0	(0.9)ppts	43.6	2.5 ppts	44.2	(0.6)ppts
Net margin (%)	37.0	(1.8)ppts	37.4	(0.4)ppts	38.8	1.8 ppts	39.2	(0.4)ppts

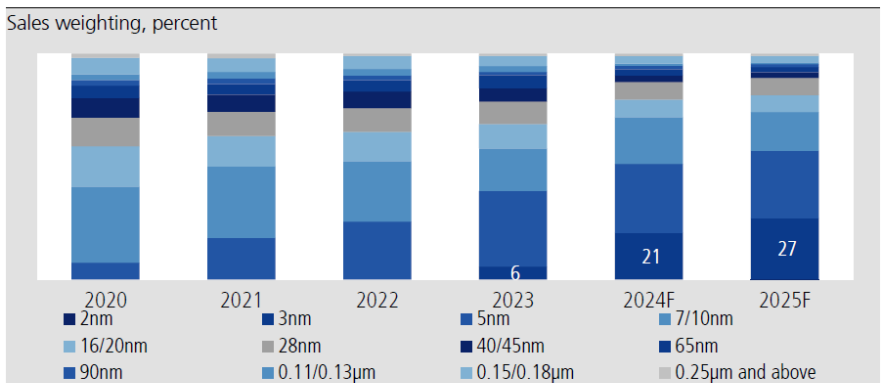
Source: Bloomberg, KGI Research estimates

**Upside to 2025 capex, but capex intensity to remain low.** We expect TSMC to increase 2025 capex to US\$35-36bn, up 15% YoY, from US\$31bn in 2024, due to stronger-than-expected N3 demand from Intel, Bitmain Technologies, and Qualcomm, and greater expansion of CoWoS and SoIC capacity. We forecast TSMC will expand its N3, CoWoS, and SoIC capacity by a respective 50%, 75%, and 100% YoY in 2025.

However, in anticipation of price hikes, we forecast TSMC will post 2025 sales growth of 20% YoY, which will exceed capex growth, thus capex intensity will remain low at 34% in 2025, in line with guidance that capex intensity will level off in the coming years. This also implies management has room to raise cash dividend payout in the near future.

**Figure 3: TSMC's capex intensity to remain low in 2025F**


Source: Company data, KGI Research estimates

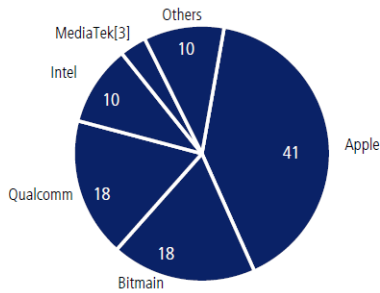
**Figure 4: Sales by node**


Source: Company data, KGI Research estimates

**Strong client roster for N3 to be key sales driver for 2025F.** In 2025, we expect a few catalysts to keep N3 supply tight. First, we expect Intel to increase outsourcing for its x86 CPU, starting with Lunar Lake in 2H24. Second, following Apple, both Qualcomm (Snapdragon 8750) and MediaTek (2454 TT, NT\$1,355, NR; Dimensity 9400) will introduce 3nm flagship AP in 2H24, and we expect N3 demand to be driven by mobile AP (Android camp) node migration. Lastly, we believe the market has underestimated demand from Bitmain Technologies. Although this may fluctuate along with cryptocurrency demand, we still expect demand to migrate from N4 to N3 in 2024-25.

**Figure 5: 2025F 3nm client mix**

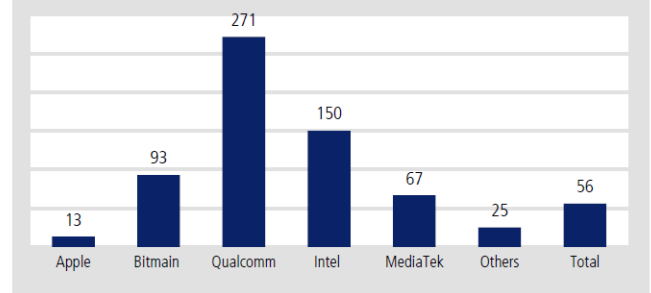
Client weighting, percent



Source: KGI Research estimates

**Figure 6: 2025 3nm sales growth forecasts by client**

3nm sales YoY growth, percent



Source: KGI Research estimates

**Figure 7: Company profile**

Taiwan Semiconductor Manufacturing Company (TSMC), the world's largest dedicated semiconductor foundry, has increased its market share in recent years. Capacity exceeded 16mn 8-inch equivalent wafers in 2013. TSMC operates six advanced 300mm wafer fabs, six 8-inch wafer fabs and one 6-inch wafer fab, and is building a new 300mm wafer fab. The company provides wafer manufacturing, wafer probing, assembly and testing, mask production, and design services.

Source: Company data, KGI Research

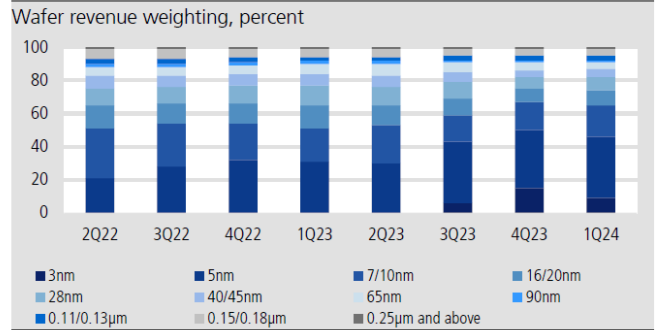
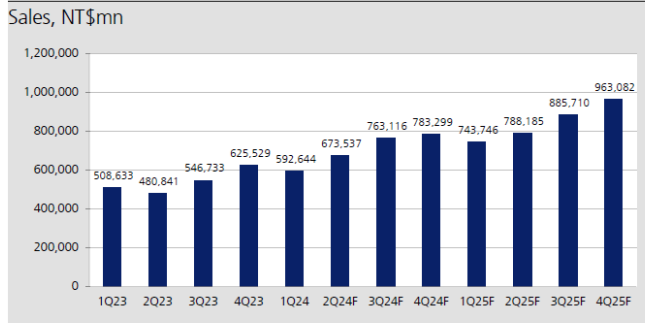
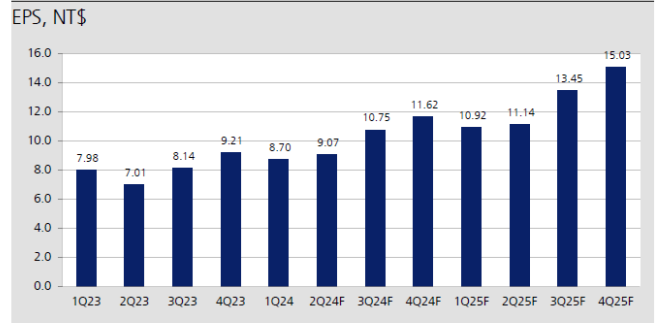
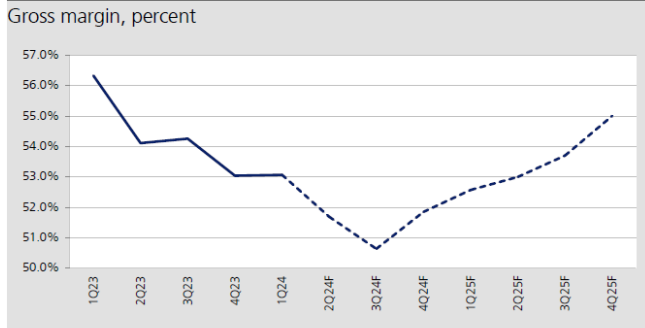
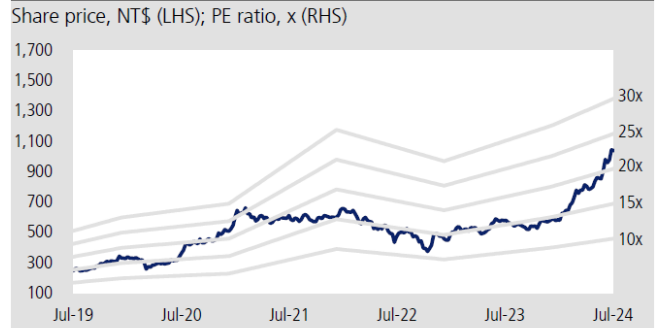
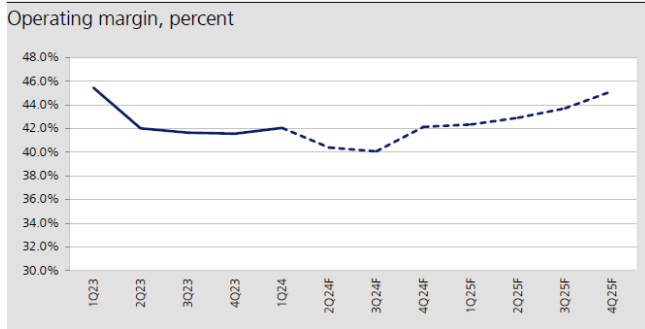
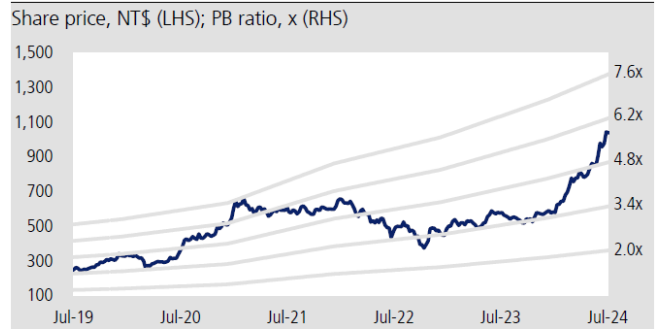
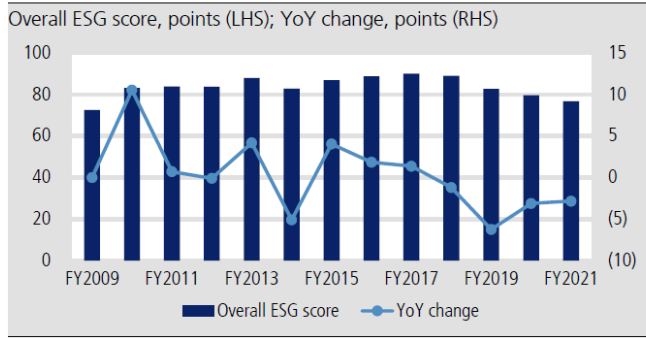
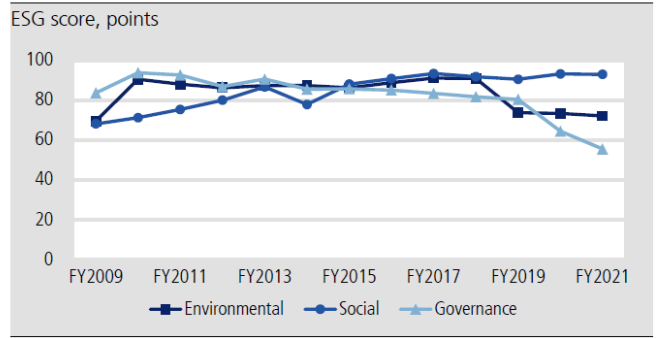
**Figure 8: TSMC's wafer revenue by node**

**Figure 9: Sales**

**Figure 10: EPS**

**Figure 11: Gross Margin**

**Figure 12: 12M forward PE band**

**Figure 13: Operating Margin**

**Figure 14: 12M forward PB band**


Figure 15: Overall ESG score



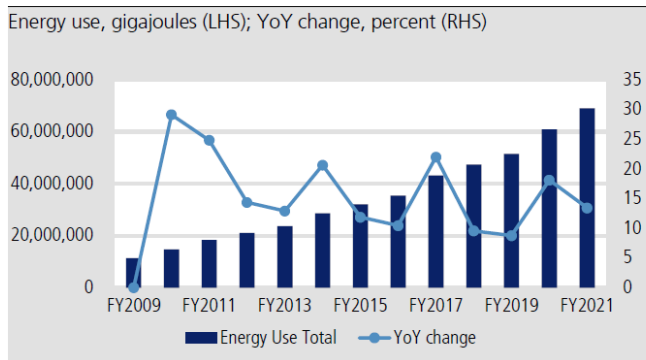
Source: Refinitiv, Company data

Figure 16: ESG score by category



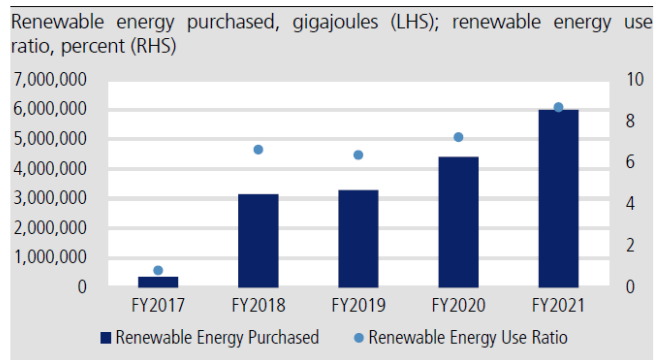
Source: Refinitiv, Company data

Figure 17: Energy use



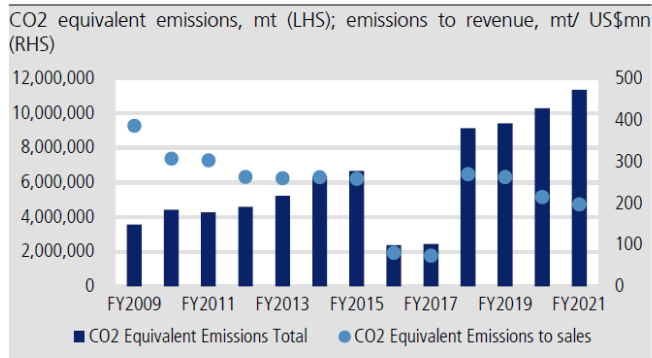
Source: Refinitiv, Company data

Figure 18: Renewable energy



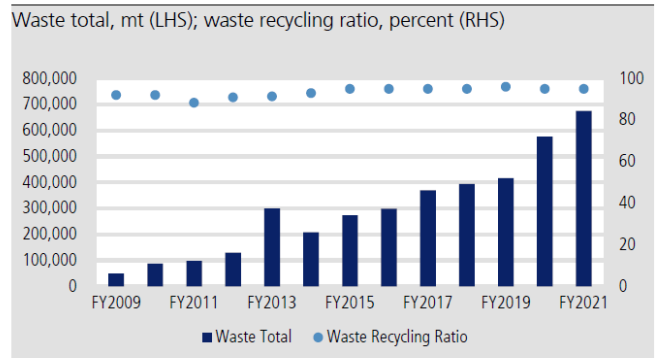
Source: Refinitiv, Company data

Figure 19: CO2 equivalent emissions



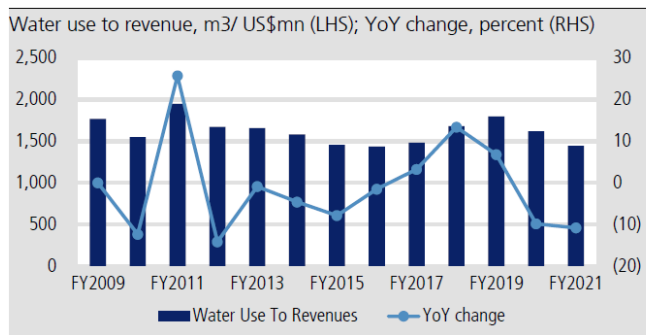
Source: Refinitiv, Company data

Figure 20: Waste total



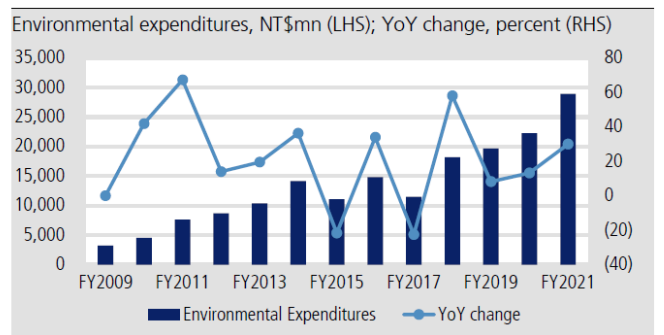
Source: Refinitiv, Company data

Figure 21: Water use to revenue



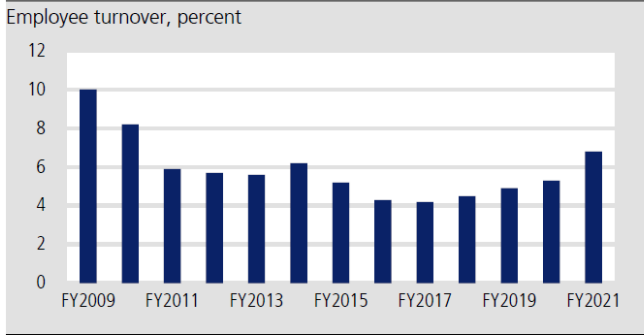
Source: Refinitiv, Company data

Figure 22: Environmental expenditures



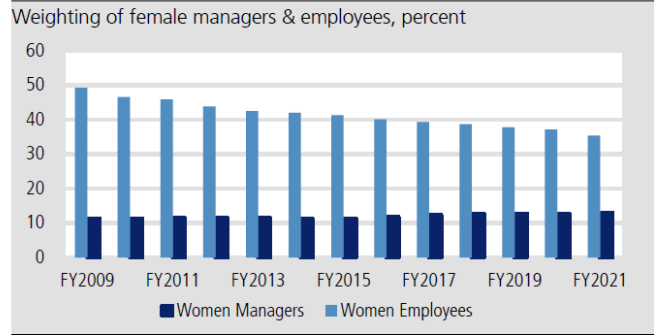
Source: Refinitiv, Company data

**Figure 23: Employee turnover**



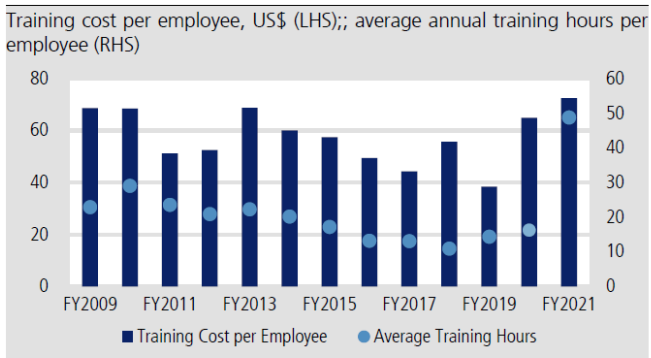
Source: Refinitiv, Company data

**Figure 24: Gender diversification**



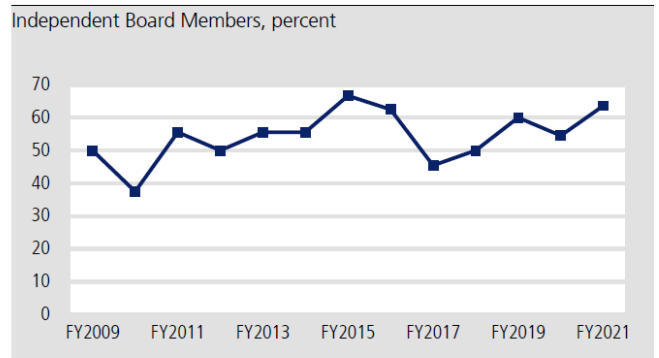
Source: Refinitiv, Company data

**Figure 25: Employee training**



Source: Refinitiv, Company data

**Figure 26: Independent Board Members**



Source: Refinitiv, Company data



**ESG chart definition**

Item	Definition	Remarks
Energy use	<p>Total direct and indirect energy consumption in gigajoules.</p> <ul style="list-style-type: none"> <li>- the total amount of energy that has been consumed within the boundaries of the company's operations</li> <li>- total energy use = total direct energy consumption + indirect energy consumption</li> <li>- purchased energy and produced energy are included in total energy use</li> <li>- for utilities, transmission/ grid loss as part of its business activities is considered as total energy consumed and data does not consider electricity produced to answer energy use (utility company produces to sell)</li> <li>- for utilities, raw materials such as coal, gas or nuclear used in the production of energy are not considered under 'total energy use'</li> </ul>	
Renewable energy purchased	<p>Total primary renewable energy purchased in gigajoules.</p> <ul style="list-style-type: none"> <li>- energy consumed by the company from various sources and among the purchased energy, how much energy is renewable in nature (solar, wind, hydro, biomass, geothermal) are in scope</li> <li>- if there is no evidence that renewable energy is produced by the company, then we consider the reported energy figure as renewable energy purchased</li> </ul>	
Renewable energy use ratio	Renewable energy to total energy used	
CO2 equivalent emissions	<p>Direct CO2 and CO2 equivalent emissions in metric tons.</p> <ul style="list-style-type: none"> <li>- direct emissions from sources that are owned or controlled by the company (scope 1 emissions)</li> <li>- following gases are relevant: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorinated compound (PFCS), sulfur hexafluoride (SF6), nitrogen trifluoride (NF3)</li> </ul>	
CO2 equivalent emissions to sales	<p>Direct CO2 and CO2 equivalent emissions (metric tons) to sales (NT\$m)</p> <ul style="list-style-type: none"> <li>- direct emissions from sources that are owned or controlled by the company (scope 1 emissions)</li> <li>- following gases are relevant: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorinated compound (PFCS), sulfur hexafluoride (SF6), nitrogen trifluoride (NF3)</li> </ul>	
Waste total	<p>Total amount of waste produced in metric tons.</p> <ul style="list-style-type: none"> <li>- total waste = non-hazardous waste + hazardous waste</li> <li>- only solid waste is taken into consideration, exceptionally if liquid waste is reported in metric tons, then we do the summation to derive total including liquid waste</li> <li>- for sectors like mining, oil &amp; gas, waste generation like tailings, waste rock, coal and fly ash are also considered</li> </ul>	
Waste recycling ratio	<p>The waste recycling ratio as reported by the company.</p> <ul style="list-style-type: none"> <li>- waste recycling ratio = waste recycled/total waste*100</li> <li>- waste to energy or waste incinerated with energy recovery are considered as waste recycled</li> <li>- waste recovered via composting is considered as recycled waste</li> </ul>	
Water withdrawal total	<p>Total water withdrawal in cubic meters.</p> <ul style="list-style-type: none"> <li>- the total volume of water withdrawn from any water source that was either withdrawn directly by the reporting organization or through intermediaries such as water utilities</li> <li>- different sources of water like wells, town/utility/municipal water, river water, and surface water are considered</li> </ul>	
Environmental expenditures	<p>Total amount of environmental expenditures.</p> <ul style="list-style-type: none"> <li>- all environmental investment &amp; expenditures for environmental protection or to prevent, reduce, control environmental aspects, impacts, and hazards. It also includes disposal, treatment, sanitation, and clean-up expenditures</li> </ul>	
Turnover of employees	<p>Percentage of employee turnover.</p> <ul style="list-style-type: none"> <li>- includes employees who left the company for any reason (voluntary or involuntary), such as resignations, retirement, natural departure/death, medical incapacitation, redundancy, layoffs, restructuring, dismissal, retrenchment or end of a fixed-term contract</li> <li>- employees turnover rate = (employees leaving/average number of employees)*100</li> <li>- where the average number of employees = (employees at the end of the current year + employees at the end of the previous year)/2</li> <li>- employees at the end of the current fiscal year = employees at the end of the previous fiscal year + new employees - employees leaving</li> </ul>	
Women managers	<p>Percentage of women managers.</p> <ul style="list-style-type: none"> <li>- percentage of women managers among total managers of the company</li> <li>- if there is a breakdown by category in percentage, such as top, senior, middle, and junior management, then we consider the percentage of middle women managers</li> <li>- percentage of women managers = number of women managers/total number of managers*100</li> </ul>	
Women employees	<p>Percentage of women employees.</p> <ul style="list-style-type: none"> <li>- percentage of women employees to the total number of employees of the company</li> <li>- percentage of women employees = number of women/total number of employees*100</li> </ul>	
Training hours total	<p>Total training hours performed by all employees.</p> <ul style="list-style-type: none"> <li>- consider only employee training hours</li> <li>- includes all types of training given to general employees (such as health &amp; safety, environmental, emergency response, skills &amp; career development training)</li> <li>- if the value is given in days, multiply by 8, assuming that 1 day = 8 hours worked</li> </ul>	
Training hours per employee	Training hours per employee per year	

Source: Refinitiv, KGI Research



**Income statement**

	Quarterly								Annually		
	Mar-24A	Jun-24F	Sep-24F	Dec-24F	Mar-25F	Jun-25F	Sep-25F	Dec-25F	Dec-23A	Dec-24F	Dec-25F
<b>Income statement (NT\$mn)</b>											
<b>Revenue</b>	<b>592,644</b>	<b>673,537</b>	<b>763,116</b>	<b>783,299</b>	<b>743,746</b>	<b>788,185</b>	<b>885,710</b>	<b>963,082</b>	<b>2,161,736</b>	<b>2,812,596</b>	<b>3,380,724</b>
Cost of goods sold	(278,139)	(325,410)	(376,697)	(377,156)	(352,748)	(370,435)	(410,064)	(433,335)	(986,625)	(1,357,402)	(1,566,582)
<b>Gross profit</b>	<b>314,505</b>	<b>348,127</b>	<b>386,419</b>	<b>406,143</b>	<b>390,998</b>	<b>417,750</b>	<b>475,647</b>	<b>529,747</b>	<b>1,175,111</b>	<b>1,455,194</b>	<b>1,814,141</b>
Operating expenses	(65,228)	(76,042)	(80,509)	(75,980)	(76,011)	(79,449)	(88,394)	(94,671)	(254,022)	(298,018)	(338,525)
<b>Operating profit</b>	<b>249,278</b>	<b>272,085</b>	<b>305,911</b>	<b>330,163</b>	<b>314,987</b>	<b>338,301</b>	<b>387,253</b>	<b>435,076</b>	<b>921,088</b>	<b>1,157,176</b>	<b>1,475,617</b>
Depreciation of fixed assets	(156,697)	(171,795)	(194,724)	(173,890)	(182,756)	(190,164)	(197,571)	(192,016)	(522,933)	(697,107)	(762,507)
Amortisation of intangible assets	(2,326)	(3,379)	(4,150)	(3,321)	(3,637)	(3,740)	(4,211)	(3,667)	(9,258)	(13,176)	(15,255)
<b>EBITDA</b>	<b>408,301</b>	<b>447,259</b>	<b>504,785</b>	<b>507,374</b>	<b>501,380</b>	<b>532,205</b>	<b>589,035</b>	<b>630,759</b>	<b>1,453,279</b>	<b>1,867,459</b>	<b>2,253,378</b>
Interest income	19,359	19,359	19,359	19,359	19,359	19,359	19,359	19,359	60,294	77,437	77,437
Investment income	950	1,200	1,200	1,200	1,200	1,200	1,200	1,200	5,119	4,550	4,800
Other non-op income	0	-	-	-	-	-	-	-	16	0	-
<b>Non-operating income</b>	<b>20,309</b>	<b>20,559</b>	<b>20,559</b>	<b>20,559</b>	<b>20,559</b>	<b>20,559</b>	<b>20,559</b>	<b>20,559</b>	<b>65,429</b>	<b>81,987</b>	<b>82,237</b>
Interest expense	(2,698)	(2,698)	(2,698)	(2,698)	(2,698)	(2,698)	(2,698)	(2,698)	(11,999)	(10,793)	(10,793)
Investment loss	-	-	-	-	-	-	-	-	-	-	-
Other non-op expenses	(86)	-	-	-	-	-	-	-	4,276	(86)	-
<b>Non-operating expenses</b>	<b>(2,784)</b>	<b>(2,698)</b>	<b>(2,698)</b>	<b>(2,698)</b>	<b>(2,698)</b>	<b>(2,698)</b>	<b>(2,698)</b>	<b>(2,698)</b>	<b>(7,723)</b>	<b>(10,879)</b>	<b>(10,793)</b>
<b>Pre-tax profit</b>	<b>266,803</b>	<b>289,946</b>	<b>323,771</b>	<b>348,023</b>	<b>332,848</b>	<b>356,162</b>	<b>405,114</b>	<b>452,937</b>	<b>978,794</b>	<b>1,228,284</b>	<b>1,547,060</b>
Current taxation	(41,322)	(55,090)	(45,328)	(46,983)	(49,927)	(67,671)	(56,716)	(63,411)	(141,404)	(188,723)	(237,725)
Minorities	264	264	264	264	264	264	264	264	730	1,054	1,054
<b>Normalised net profit</b>	<b>225,744</b>	<b>235,119</b>	<b>278,707</b>	<b>301,304</b>	<b>283,184</b>	<b>288,755</b>	<b>348,661</b>	<b>389,789</b>	<b>838,120</b>	<b>1,040,615</b>	<b>1,310,390</b>
Extraordinary items	(259)	-	-	-	-	-	-	-	377	-	-
<b>Net profit</b>	<b>225,485</b>	<b>235,119</b>	<b>278,707</b>	<b>301,304</b>	<b>283,184</b>	<b>288,755</b>	<b>348,661</b>	<b>389,789</b>	<b>838,498</b>	<b>1,040,615</b>	<b>1,310,390</b>
EPS (NT\$)	8.70	9.07	10.75	11.62	10.92	11.14	13.45	15.03	32.34	40.13	50.54
<b>Margins (%)</b>											
Gross profit margin	53.1	51.7	50.6	51.9	52.6	53.0	53.7	55.0	54.4	51.7	53.7
Operating margin	42.1	40.4	40.1	42.2	42.4	42.9	43.7	45.2	42.6	41.1	43.6
EBITDA margin	68.9	66.4	66.1	64.8	67.4	67.5	66.5	65.5	67.2	66.4	66.7
Pretax profit margin	45.0	43.0	42.4	44.4	44.8	45.2	45.7	47.0	45.3	43.7	45.8
Net profit margin	38.0	34.9	36.5	38.5	38.1	36.6	39.4	40.5	38.8	37.0	38.8
<b>Sequential growth (%)</b>											
Revenue growth	(5.3)	13.6	13.3	2.6	(5.0)	6.0	12.4	8.7			
Gross profit growth	(5.2)	10.7	11.0	5.1	(3.7)	6.8	13.9	11.4			
Operating profit growth	(4.2)	9.1	12.4	7.9	(4.6)	7.4	14.5	12.3			
EBITDA growth	(0.6)	9.5	12.9	0.5	(1.2)	6.1	10.7	7.1			
Pretax profit growth	(4.1)	8.7	11.7	7.5	(4.4)	7.0	13.7	11.8			
Net profit growth	(5.5)	4.3	18.5	8.1	(6.0)	2.0	20.7	11.8			
<b>YoY growth (%)</b>											
Revenue growth	16.5	40.1	39.6	25.2	25.5	17.0	16.1	23.0	(4.5)	30.1	20.2
Gross profit growth	9.8	33.8	30.3	22.4	24.3	20.0	23.1	30.4	(12.8)	23.8	24.7
Operating profit growth	7.8	34.7	34.3	26.9	26.4	24.3	26.6	31.8	(17.9)	25.6	27.5
EBITDA growth	19.5	37.2	34.6	23.5	22.8	19.0	16.7	24.3	(6.8)	28.5	20.7
Pretax profit growth	9.2	35.0	34.0	25.1	24.8	22.8	25.1	30.1	(14.5)	25.5	26.0
Net profit growth	8.9	29.3	32.1	26.2	25.6	22.8	25.1	29.4	(17.5)	24.1	25.9

Source: Company data, KGI Research estimates

**Balance sheet**

NT\$m	Dec-21A	Dec-22A	Dec-23A	Dec-24F	Dec-25F
<b>Total assets</b>	3,725,503	4,964,779	5,532,371	6,476,448	7,400,318
<b>Current assets</b>	1,607,073	2,052,897	2,194,033	2,824,304	3,358,606
Cash & ST securities	1,188,456	1,561,486	1,687,644	2,117,487	2,530,774
Inventory	193,102	221,149	250,997	337,747	388,056
Accounts receivable	198,301	231,340	201,938	308,062	378,768
Other current assets	27,214	38,922	53,453	61,008	61,008
<b>Non-current assets</b>	2,118,431	2,911,882	3,338,338	3,652,144	4,041,713
LT investments	29,385	68,928	129,442	142,069	146,869
Net fixed assets	1,975,119	2,693,837	3,064,475	3,365,268	3,750,037
Other assets	113,927	149,117	144,421	144,807	144,807
<b>Total liabilities</b>	1,554,770	2,004,290	2,049,108	2,254,885	2,283,234
<b>Current liabilities</b>	739,503	944,227	913,583	1,158,890	1,187,239
Accounts payable	48,723	56,522	57,293	94,689	108,793
Interest bearing ST liabilities	119,488	19,314	9,293	12,500	12,500
Other current liabilities	571,293	868,391	846,997	1,051,701	1,065,946
<b>Non-current liabilities</b>	815,267	1,060,063	1,135,525	1,095,995	1,095,995
Long-term debt	613,380	839,096	918,283	944,230	944,230
Other L-T liabilities	181,123	191,203	188,560	130,434	130,434
<b>Total equity</b>	2,170,733	2,960,489	3,483,263	4,221,563	5,117,085
Share capital	259,304	259,304	259,321	259,336	259,336
Retained earnings reserve	1,536,379	2,323,223	2,846,884	3,861,302	4,756,823
Minority interests	2,447	14,836	24,349	29,984	29,984
Preferred shareholders funds	-	-	-	-	-

**Key ratios**

	Dec-21A	Dec-22A	Dec-23A	Dec-24F	Dec-25F
<b>Growth</b>					
Revenue growth	18.5%	42.6%	(4.5%)	30.1%	20.2%
Operating profit growth	14.7%	72.5%	(17.9%)	25.6%	27.5%
EBITDA growth	19.4%	45.3%	(6.8%)	28.5%	20.7%
Net profit growth	15.2%	70.4%	(17.5%)	24.1%	25.9%
EPS growth	15.2%	70.4%	(17.5%)	24.1%	25.9%
<b>Profitability</b>					
Gross profit margin	51.6%	59.6%	54.4%	51.7%	53.7%
Operating margin	40.9%	49.5%	42.6%	41.1%	43.6%
EBITDA margin	67.6%	68.8%	67.2%	66.4%	66.7%
Net profit margin	37.6%	44.9%	38.8%	37.0%	38.8%
Return on average assets	18.4%	23.4%	16.0%	17.3%	18.9%
Return on average equity	29.7%	39.8%	26.2%	27.2%	28.2%
<b>Stability</b>					
Gross debt to equity	33.8%	29.0%	26.6%	22.7%	18.7%
Net debt to equity	Net cash	Net cash	Net cash	Net cash	Net cash
Interest coverage (x)	123.5	98.4	82.6	114.8	144.3
Interest & ST debt coverage (x)	0.8	1.0	1.0	1.0	1.0
Cash flow interest coverage(x)	205.4	137.1	103.5	162.6	184.4
Cash flow/int. & ST debt (x)	8.9	51.8	58.3	75.3	85.5
Current ratio (x)	2.2	2.2	2.4	2.4	2.8
Quick ratio (x)	1.9	1.9	2.1	2.1	2.5
Net debt (NT\$m)	(332,122)	(484,404)	(537,852)	(936,296)	(1,349,583)
<b>Per share data</b>					
EPS (NT\$)	23.01	39.20	32.34	40.13	50.54
CFPS (NT\$)	42.89	62.12	47.90	67.69	76.77
BVPS (NT\$)	83.62	113.60	133.38	161.65	196.19
Adj BVPS (NT\$)	83.62	113.60	133.40	161.65	196.19
SPS (NT\$)	61.22	87.31	83.37	108.47	130.38
EBITDA/share (NT\$)	41.36	60.11	56.05	72.02	86.90
Cash DPS (NT\$)	11.00	11.00	13.00	16.00	18.00
<b>Activity</b>					
Sales / avg assets	0.49	0.52	0.41	0.47	0.49
Days receivable	45.6	37.3	34.1	40.1	40.9
Days inventory	91.8	88.2	92.9	91.1	90.4
Days payable	23.2	22.5	21.2	25.5	25.3
Cash cycle	114.2	102.9	105.8	105.6	106.0

Source: Company data, KGI Research estimates

**Profit & loss**

NT\$m	Dec-21A	Dec-22A	Dec-23A	Dec-24F	Dec-25F
<b>Revenue</b>	1,587,415	2,263,891	2,161,736	2,812,596	3,380,724
Cost of goods sold	(767,878)	(915,536)	(986,625)	(1,357,402)	(1,566,582)
<b>Gross profit</b>	819,537	1,348,355	1,175,111	1,455,194	1,814,141
Operating expenses	(169,556)	(227,076)	(254,022)	(298,018)	(338,525)
<b>Operating profit</b>	649,981	1,121,279	921,088	1,157,176	1,475,617
<b>Non-operating income</b>	12,285	31,168	65,429	81,987	82,237
Interest income	5,709	22,422	60,294	77,437	77,437
Investment income	5,965	8,065	5,119	4,550	4,800
Other non-op income	611	681	16	0	-
<b>Non-operating expenses</b>	860	(8,256)	(7,723)	(10,879)	(10,793)
Interest expense	(5,414)	(11,750)	(11,999)	(10,793)	(10,793)
Investment loss	-	-	-	-	-
Other non-op expenses	6,275	3,494	4,276	(86)	-
<b>Pre-tax profit</b>	663,126	1,144,191	978,794	1,228,284	1,547,060
Current taxation	(66,053)	(127,290)	(141,404)	(188,723)	(237,725)
Minorities	(533)	(370)	730	1,054	1,054
Extraordinary items	-	0	377	-	-
<b>Net profit</b>	596,540	1,016,530	838,498	1,040,615	1,310,390
<b>EBITDA</b>	1,072,376	1,558,533	1,453,279	1,867,459	2,253,378
EPS (NT\$)	23.01	39.20	32.34	40.13	50.54

**Cash flow**

NT\$m	Dec-21A	Dec-22A	Dec-23A	Dec-24F	Dec-25F
<b>Operations cash flow</b>	1,112,161	1,610,599	1,241,967	1,755,106	1,990,686
Net profit	596,540	1,016,530	838,498	1,040,615	1,310,390
Depreciation & amortisation	422,395	437,254	532,191	710,283	777,762
Decrease in working capital	(100,384)	(53,286)	324	(155,478)	(106,911)
Other operating cash flow	193,610	210,100	(129,046)	159,685	9,445
<b>Investing cash flow</b>	(836,366)	(1,190,928)	(906,121)	(1,024,487)	(1,162,530)
Sale of ST investment	4,676	(128,838)	(55,781)	(12,782)	-
New investments	-	-	-	-	-
Capital expenditure	(839,196)	(1,082,672)	(949,817)	(1,045,985)	(1,162,530)
Others investing cashflow	(1,846)	20,582	99,478	34,280	-
<b>Free cash flow</b>	59,845	289,078	361,461	475,023	741,936
<b>Financing cash flow</b>	136,668	(200,244)	(204,894)	(330,969)	(414,868)
Increase in short term debt	35,668	(111,960)	-	-	-
Increase in long term loans	362,765	195,983	68,204	29,154	-
New ordinary shares issued	-	-	-	-	-
Ordinary dividends paid	(265,786)	(285,234)	(291,722)	(337,080)	(414,868)
Other financing cashflow	3,961	1,839	18,623	(23,044)	-
<b>Forex effects</b>	(7,584)	58,397	(8,339)	27,949	-
<b>Total cash generated</b>	404,820	277,824	122,614	427,599	413,287

**ROIC**

	Dec-21A	Dec-22A	Dec-23A	Dec-24F	Dec-25F
1 - COGS/revenue					
- Operating exp./revenue	10.7%	10.0%	11.8%	10.6%	10.0%
= <b>Operating margin</b>	40.9%	49.5%	42.6%	41.1%	43.6%
1 / Working capital/revenue	(0.1)	(0.2)	(0.2)	(0.2)	(0.1)
+ Net PPE/revenue	1.2	1.2	1.4	1.2	1.1
+ Other assets/revenue	0.0	0.0	0.0	0.1	0.0
= <b>Capital turnover</b>	0.9	1.0	0.8	0.9	1.0
Operating margin	40.9%	49.5%	42.6%	41.1%	43.6%
x Capital turnover	0.9	1.0	0.8	0.9	1.0
x (1 - tax rate)	90.0%	88.9%	85.6%	84.6%	84.6%
= <b>After-tax ROIC</b>	32.9%	43.9%	29.4%	31.9%	35.2%

Source: Company data, KGI Research estimates

**TSMC – Recommendation & target price history**


Date	Rating	Target	Price
2024-01-18	Outperform	688	588
2024-01-10	Outperform	688	584
2023-10-19	Outperform	703	546
2023-10-06	Outperform	703	532
2023-07-20	Outperform	658	579
2023-07-04	Outperform	716	585
2023-04-14	Outperform	591	516
2023-03-29	Outperform	603	530
2023-03-29	Outperform	603	530
2022-10-31	Outperform	575	390

Source: TEJ, KGI Research

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