

Singapore Market Focus

Spotlight on Semiconductor

Refer to important disclosures at the end of this report

DBS Group Research . Equity

29 Nov 2019

Clear skies ahead

- New technologies and 5G driving demand, leading to a turnaround in the semiconductor industry
- Positive forecast on industry outlook in 2020, after an anticipated drop in 2019
- Shipment and inventory trends turning positive; historical data shows a strong recovery after every major crisis
- Stock picks: UMS, AEM, Frencken

Turnaround in semiconductor driven by new technologies and 5G.

Major new growth drivers are emerging from new technologies (Internet of Things, Big Data, Artificial Intelligence) and 5G, driving demand in the semiconductor industry. This sets the stage for a turnaround in the semiconductor industry that has been plagued by a slump in memory chip demand, among others, over the last two years or so. The nascent recovery in semiconductor is driven by: 1) Adoption of new technologies; 2) New products, including speech recognition devices, wearables and 3-D printing; and 3) Product enhancements for mobile phones, technology nodes (e.g. from 14 nanometer to 10 nanometer and below)

Shipment, billing and inventory trends turning positive.

Semiconductor shipments bottomed out in April 2019 as new technology started to usher in demand for more advanced chips and equipment. The current shipment level seems to have stabilised at the normalised long-term growth level. Based on past trends, we also observed a strong recovery after every major crisis. Billing for semiconductor equipment has turned positive in October on a y-o-y basis, after 11 consecutive months of decline while inventory level is decreasing.

Positive industry trend in 2020. Both WSTS and SEMI expect a recovery in the semiconductor market in 2020, after a steep drop in 2019 following an all-time high in 2018. IDC estimates the consumer semiconductor segment will grow at a CAGR of 6.4% during 2018-2023 on the back of consumer IoT devices and home automation gaining traction and scale. Bigger players in the semiconductor space like Applied Materials, Micron, Intel and TSMC are also guiding for a better outlook ahead.

Stock picks: room for further upside after recent gain? We believe there is further upside to the semiconductor plays despite the recent run-up in share prices, due to: 1) The uptick in global semiconductor shipments and billing; 2) Optimistic guidance from global players and positive forecasts on industry trends; and 3) Valuation re-rating towards the PE multiple achieved in the previous peak cycle. Proxies to semiconductor plays include [UMS Holdings](#) (BUY, TP: S\$1.08), [AEM Holdings](#), which we initiate coverage with a BUY, TP: S\$2.38. We also have two Equity Explorer reports on [Avi-Tech](#), return rating 1 with fair value: S\$0.47 and [Micro Mechanics](#), return rating 2 with fair value: S\$2.13. [Frencken](#) (BUY; TP: S\$1.06) has c.20% of revenue exposure to the semiconductor industry.

STI : 3,200.61

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Key Indices

	Current	% Chng
STI Index	3,200.61	-0.9%
FS Small Cap Index	351.00	0.4%
USD/SGD Currency	1.35	-1.1%
Daily Volume (m)	1,215	
Daily Turnover (S\$m)	798	
Daily Turnover (US\$m)	592	

Source: Bloomberg Finance L.P.

Market Key Data

(%)	EPS Gth	Div Yield
2018	6.8	4.1
2019F	0.6	4.1
2020F	8.3	4.2
(x)	PER	EV/EBITDA
2018	14.9	14.2
2019F	14.8	14.8
2020F	13.7	13.5

STOCKS

	Price S\$	Mkt Cap US\$m	12-mth Target S\$	Performance (%)		Rating
				3 mth	12 mth	
AEM Holdings	1.71	354	2.38	72.1	81.7	BUY
Frencken Group	0.905	281	1.06	46.4	125.9	BUY
UMS Holdings	0.89	350	1.08	55.5	44.5	BUY
Avi-Tech Electronics	0.36	46	0.47	37.0	23.4	1*
Micro- Mechanics	1.81	184	2.13	14.5	11.7	2*

Source: DBS Bank, Bloomberg Finance L.P.

Closing price as of 28 Nov 2019

Note: *

Equity Explorer return ratings reflect return expectations based on an assumed earnings profile and valuation parameters:

Rating 1: (>20% potential returns over the next 12 months)

Rating 2: (0 - 20% potential returns over the next 12 months)



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Turnaround in Semiconductor Sector

Semiconductor sector bottoming, aided by new growth drivers from new technologies. The two-year boom in the semiconductor market led by the top three end markets - PCs, mobile phones and data centers - came to an abrupt stop last year, as geopolitical tensions weighed on end market demand. A slump in memory chip demand, among others, has plagued the semiconductor sector since then. Prices for both DRAM memory, used in desktop computers and servers, and NAND, used in smartphones, have fallen sharply in the past 18 months. But these trends look like reversing, aided by major new growth drivers emerging from new technologies and 5G. This will have a profound impact on the semiconductor industry.

Semiconductor a leading indicator in entire technology value chain. In most cases, the semiconductor sector is a leading indicator. The uptick in this industry should lead to an improvement in demand for other segments down the technology value chain. In this report, our focus is on the front end of the entire technology value chain, i.e. the upstream segment where the semiconductor plays are positioned. *(please refer to diagram on page 9).*

In the semiconductor space, we further split this into two portions – (i) semiconductor front-end equipment manufacturing, and (ii) semiconductor back-end assembly and testing process. Proxies to front-end plays include stocks like **UMS Holdings** (BUY, TP: S\$1.08), equipment manufacturer for Applied Materials. Back-end players are **AEM Holdings** (Initiate BUY, TP: S\$2.38), test handler provider for Intel; **Micro Mechanics** (return rating 2, fair value: S\$2.13), a manufacturer of consumable parts and tools used in the fabricating, chip testing and assembling of semiconductors; and **Avi-Tech** (return rating 1, fair value S\$0.47), which provides burn-in tests and burn-in boards, printed circuit board assembly services, and engineering services for semiconductor equipment. **Frencken** (BUY; TP: S\$1.06) also has c.20% of its revenue exposed to the semiconductor industry.

Semiconductor Demand Driver

The semiconductor market is now larger and less volatile than before, due to growth and diversification of demand drivers, spanning consumer and enterprise end markets.

The nascent recovery in semiconductor is driven by:-

- 1) **Adoption of new technologies** - in the form of Internet of Things (IoT), Big Data, and Artificial Intelligence (AI). Growing demand for specialty nodes that serve the IoT, communications, automotive, power, and image sensor markets is also driving robust investments in capacity and new technology.
- 2) **New products** - including speech recognition devices, wearables and 3-D printing
- 3) **Product enhancement** - for mobile phones, technology nodes (e.g. from 14 nanometer to 10 nanometer and lower)

Positive forecasts on industry trends in 2020

According to **World Semiconductor Trade Statistics (WSTS)** organisation, the worldwide semiconductor market is expected to return to growth in 2020. The worldwide semiconductor market was up 13.7% in 2018, an all-time high. The year 2019 is projected to be down by 13.3%. For 2020, all regions are forecast to grow with the overall market up 4.8%.

SEMI expects a recovery in the semiconductor industry in 2020. According to SEMI, global sales of semiconductor manufacturing equipment by original equipment manufacturers (OEMs) are projected to decline by 18.4% in 2019 from last year's historical high. Growth in equipment sales is expected to resume in 2020, with an 11.6% y-o-y jump on the strength of memory spending and new projects in China, while equipment sales in Japan should surge 46.4%.

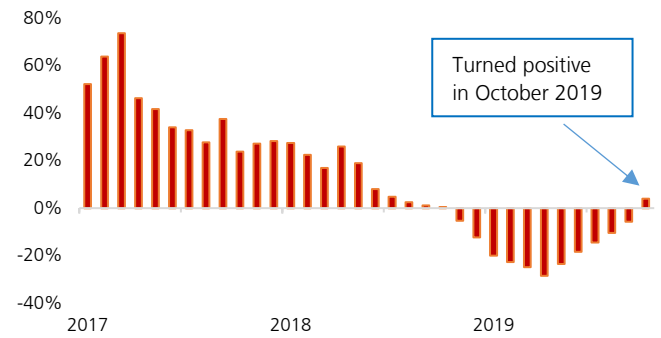
International Data Corporation (IDC) is expecting sensors, connectivity, and AI and computer vision to drive semiconductor demand. IDC estimates that the consumer semiconductor segment will grow at a CAGR of 6.4% for 2018-2023 on the back of consumer IoT devices and home automation gaining traction and scale. It is also forecasting worldwide shipments of AI-optimised processors for edge systems to reach 340.1 million units in 2019, an increase of 170.0% y-o-y, and surge to 1.5 billion units by 2023, achieving a five-year CAGR of 64.9%.

Industry trend forecast by various organisations

Organisation	Industry Trend Forecast
WSTS	Worldwide semiconductor market to return to growth in 2020; +13.7% in 2018, -13.3% in 2019, +4.8% 2020
SEMI	Recovery in global sales of semiconductor manufacturing equipment; -18.4% in 2019, +11.6% in 2020
IDC	Sensors, connectivity, and AI and computer vision to drive semiconductor demand. Consumer semiconductor segment to grow at a CAGR of 6.4% for 2018-2023; shipments of AI-optimised processors to grow at 5-yr CAGR of 64.9%

Source: DBS Bank; WSTS, SEMI, IDC

Semiconductor Equipment Billing for North America



Source: Bloomberg Finance L.P., SEMI

Shipment, billings and inventory trends turning positive

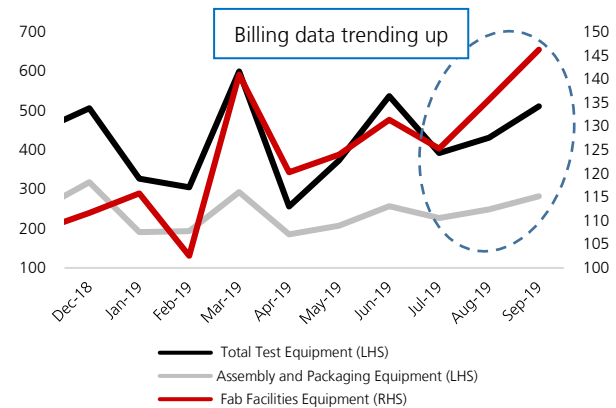
Semiconductor shipment recovering back to normalised long-term growth trend. The surge in shipments in 2017 was driven by strong demand in end markets for PCs, mobile phones, and data centers. As semiconductor companies ramped up production, end market companies accelerated their orders in the face of an escalating trade war, providing an additional leg to semiconductor shipments in 2018. As geopolitical tensions weighed on end market demand, semiconductor shipments began to drop in 4Q18. Semiconductor shipments bottomed out in April 2019 as new technology started to usher in demand for more advanced chips and equipment. At current level, the shipments seemed to have stabilised at slightly above the US\$30bn level. This level coincides with the normalised long-term growth trend (represented by the black dotted line in the chart) of global semiconductor shipments. *(Please refer to chart on the next page)*

Strong recovery after every major crisis. In terms of y-o-y change, historical semiconductor shipment data has shown a steep rebound after each major crisis, including Asian Financial Crisis in 1997/1998, the dot.com crisis in 2000/2001, Global Financial Crisis in 2008/2009 and now the trade war. The 15.9% y-o-y drop in August 2019 was one of the steepest since 1992. A normalisation of the shipment trend should lead to an improvement in y-o-y growth. Based on the latest data in September 2019, shipment data is showing signs of turning up. If the sales momentum can continue, this should lead to a sustainable recovery for the sector.

Billing turning positive. In terms of billings data, the y-o-y change for the manufacturers' billing for North America started to turn positive in October, after 11 consecutive months of decline, according to preliminary data from SEMI.

For the key semiconductor sub segments including Fab Facilities Equipment, Test Equipment and Assembly and Packaging Equipment, the billing data started to trend up in July 2019.

Global Equipment Manufacturer Billing (US\$m)



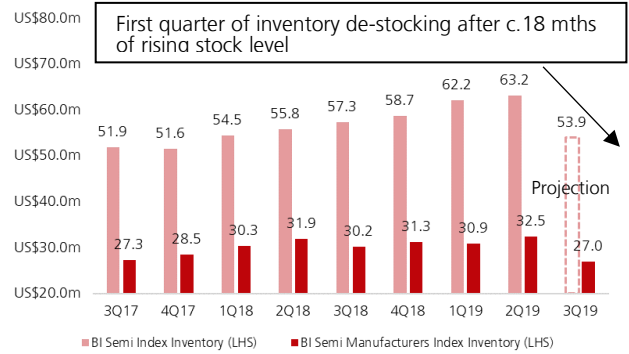
Source: Bloomberg Finance L.P., SEMI

However, if the prolonged US-China trade war is unable ink a 'phase one' deal and the global economy continues to show tepid growth, the risk is that we may only see a more decisive turn when there is better visibility on the trade front and a healthier economy.

Inventory de-stocking. Inventory levels, which are a function of both projected demand as well as current demand, are trending down. Semiconductor companies usually build on their inventories in anticipation of a surge in demand from new technology. Other factors such as a possible escalation of US-China tariffs and weakening demand due to the geopolitical issues would also contribute to the inventory buildup. However, in the most recent quarter, we are beginning to see

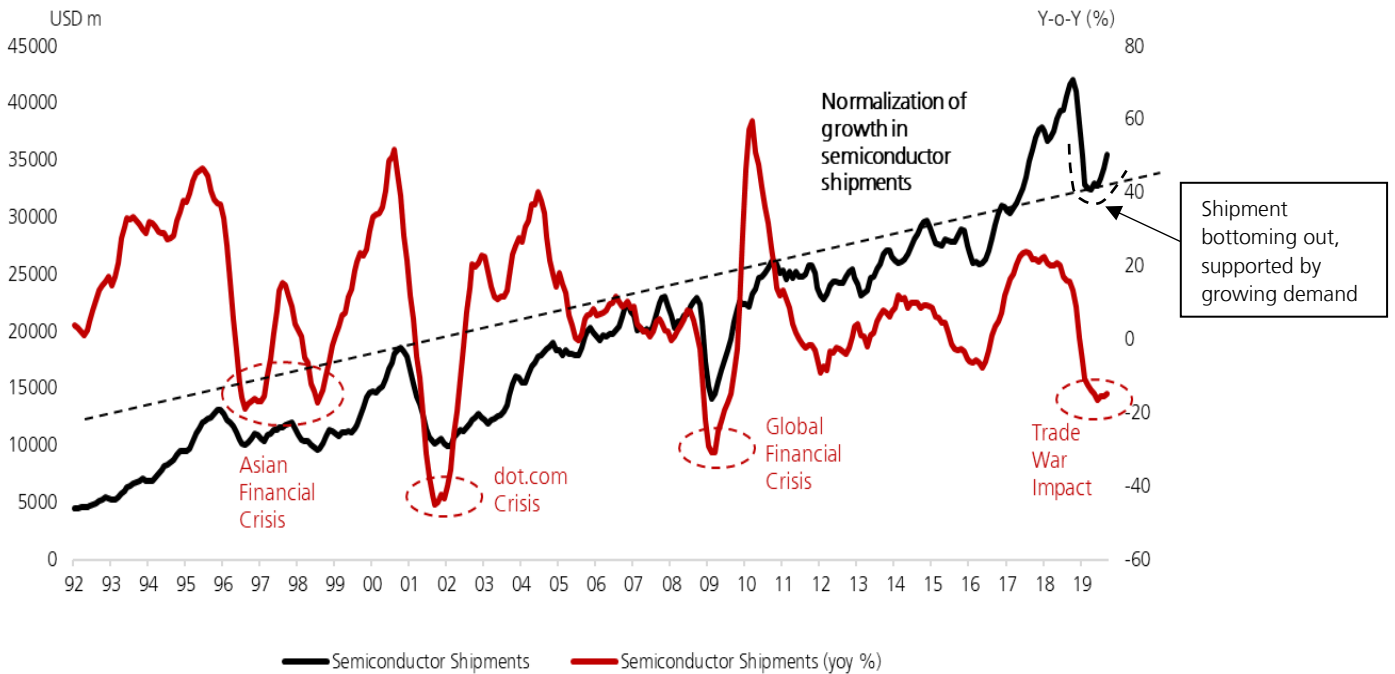
a drawdown in inventory levels for both the semiconductor manufacturers (BI Semi Manufacturers Index Inventory) and the chip makers (BI Semi Index Inventory).

Major Semiconductors (chip makers) and Semiconductor Manufacturers (equipment) Inventory



Source: Bloomberg Finance L.P., DBS Bank

Global semiconductor shipments and y-o-y growth



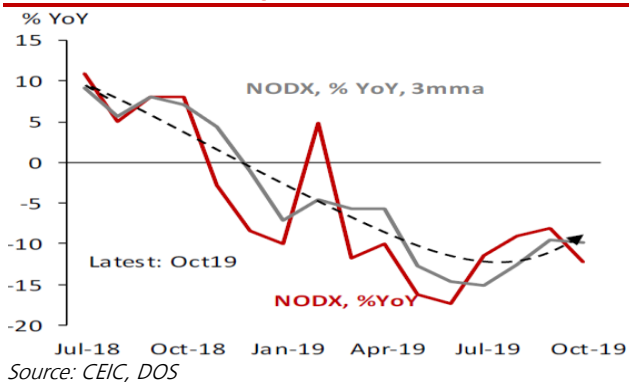
Source: CEIC (WSTS), DBS Bank

Bottoming out in Singapore manufacturing

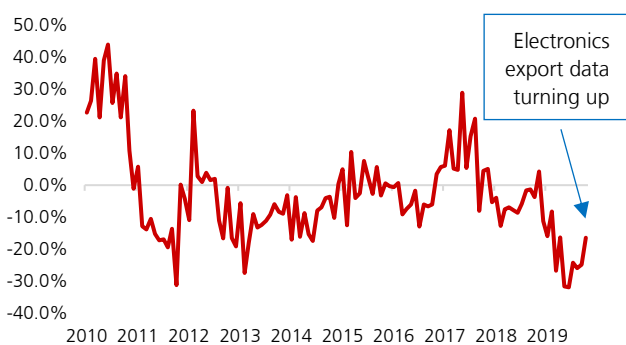
Worst could be over for manufacturing sector. In Singapore, our economist is of the view that the manufacturing sector could be bottoming out. On the surface, the manufacturing sector reported a headline contraction of 3.5% y-o-y for 3Q19. However, this was partly caused by the high base in the same period last year. Sequentially, the sector has recovered to register a marginal decline of 0.4% QoQ saar, a marked improvement from -4.2% previously. The decline in NODX is easing while the electronics export is showing a y-o-y improvement. The worst of the manufacturing cycle could be over, but growth in this sector could remain lacklustre amid weak global demand and uncertainties around the ongoing trade talks between the US and China.

Continued investment in semiconductor. In terms of semiconductor investments, JTC Corporation is building a new semiconductor facility in Tampines as Singapore continues to back its large electronics sector despite a global slowdown. The first phase is scheduled to be completed by 2021. Global semiconductor company Micron Technology launched a new wafer fabrication facility here in August. ST Microelectronics expanded its Ang Mo Kio wafer fab facility in September, more than doubling its capacity.

Decline in NODX is easing



Electronics Export y-o-y change (%) turning up



Looking up to global players for guidance

Positive outlook guidance. Bigger players in the semiconductor space like Applied Materials, Micron Technology, Intel and TSMC are guiding for better outlook ahead. The positive guidance is mainly on the back of growing demand in the new technology space from 5G, IoT and data analytics, coupled with inventory destocking. Ongoing inventory correction in DRAM and NAND are near term tailwinds. More customers are upgrading their equipment ahead of the 5G rollout in key markets. On the supply side, capex cuts and delays in commencement of operations of wafer plants across the industry are leading to supply reductions. Overall, the overstocking situation in 1H19 is improving as demand has been picking up in 2H19. The industry demand-supply environment is projected to be much healthier in 2020.

In terms of valuations, the global plays are trading at about 40% to 50% premium to the SGX-listed plays. *(Please refer to table on page 7)*

Applied Materials (AMAT)

Uptick in demand, expect 9.2% EPS growth next quarter. AMAT's 4Q FY Oct 2019 results reflect a healthy uptick in demand for semiconductor equipment, driven by strong investments by foundry logic customers and acceleration of the 5G roadmap, after a downturn that lasted for four quarters. AMAT provided strong guidance for 1Q FY2020, projecting adjusted EPS of 87-95UScts, after reporting 81UScts in 4Q19.

AMAT remains optimistic about the price elasticity of NAND, which is expected to bolster NAND customer spending in the near term. The demand for foundry logic is improving, thanks to rising demand for specialty nodes in automotive, power, IoT, communications, and image sensor markets.

TSMC

Raised capex guidance by c.40%. 3Q19 results were driven by new product launches both in premium smartphones and high-performance computing applications using TSMC's industry-leading 7 nanometer technology. TSMC expects c.9% sequential improvement in revenue for 4Q19, and has raised capex by c.40% for 2019, and expects 2020 capex to be similar. The higher capex is mainly due to the higher than expected 5G ramp-up as compared to 4G. TSMC is also expanding its customer and product portfolio. Inventory had been gradually digested throughout 3Q19, driven by smartphone and high-performance computing-related applications.

Micron Technology

Expect improvement in DRAM and NAND. Micron expects improvement in the demand for the DRAM and NAND industries, primarily driven by a normalisation of inventories, and secular growth trends in various end markets.

The projected demand growth in the DRAM industry remains unchanged in the mid-teens for 2019, with supply exceeding demand. Micron expects demand growth in the DRAM industry to see a pick up to the high teens-to-20% in 2020, above supply growth in the mid-teens, which should help normalise supplier inventories and enable a healthy industry environment. Micron expects long-term DRAM demand growth CAGR to be in the mid-to high teens.

The demand elasticity and supply reductions in the NAND industry will lead to improving market conditions and declining industry inventory. Micron now expects demand growth in the low to mid-40% range for 2019, which will

exceed industry bit supply growth of approximately 30%. For 2020, it estimates industry bit demand growth of high 20s-to-low 30% range, with supply growing slightly below demand. Micron also expects improvement in margins, and long-term NAND bit demand growth CAGR to be in the low 30% range.

Intel

Well-positioned for 5G deployment; expects increase in market share. Intel has raised capex guidance by US\$0.5 bn to US\$16 bn as a result of increased 10-nanometer and 7-nanometer investments. Intel is well positioned for 5G deployments in 2020 and expects to grow its market segment share in wireless base stations to 40% by 2022. Intel is well-positioned for the next market inflection as 5G has opened up significant new IoT opportunities in equipment to smart connected endpoints.

Global Players – Summary on Latest Results and Outlook Guidance

Company	Latest Results	Outlook Guidance
Applied Materials (Key customer for UMS)	- 4Q FY Oct 2019 results reflect a healthy uptick in demand for semiconductor equipment	- Expects 1Q FY2020 EPS to grow 9.2%. - Optimistic about the price elasticity of NAND. - Demand for foundry logic improving.
TSMC	- 3Q19 results driven by new product launches in premium smartphones and high-performance computing applications - Inventory depleting	- Raised capex by c.40% for 2019 and expects next year's capex to be similar. - Expects c.9% sequential improvement in revenue for 4Q19.
Micron Technology	- 4Q19 results exceed guidance, on demand recovery in DRAM and NAND	- Projects DRAM demand growth of high teens to 20% in 2020, above supply growth of only mid-teens. - Estimates NAND industry demand growth of high 20s to low 30% range in 2020, with demand growth exceeding supply.
Intel (key customer for AEM)	- 3Q19 results exceed guidance; best quarter ever on growing market share and demand	- Raised capex guidance by \$0.5 bn to \$16 bn on increased 10-nanometer and 7-nanometer investments. - Well positioned for 5G deployments in 2020; expect to grow market segment share and wireless base stations to 40% by 2022.

Source: DBS Bank, Company

Global Semiconductor Plays – Trading at a premium to smaller SGX listed peers

Bloomberg Ticker	Company Name	Market Data		Financial Data			Valuation					
		Primary Exchange	Market Cap (US\$m)	Sales (US\$m)	Net Profit (US\$m)	Net Profit Margin (%)	Debt (US\$m)	EV/EBITDA FY19F	EV/EBITDA FY20F	P/E FY18	P/E FY19F	P/E FY20F
Non-Memory Manufacturers (Logic/Processors)												
INTC US	Intel Corp	NASDAQ GS	254,518.5	70,848.0	21,053.0	29.7%	26,359.0	8.3x	7.9x	13.6x	12.7x	12.6x
AVGO US	Broadcom Inc	NASDAQ GS	126,315.8	20,848.0	12,259.0	58.8%	17,493.0	13.3x	11.9x	33.5x	15.0x	13.6x
QCOM US	QUALCOMM Inc	NASDAQ GS	96,828.4	24,273.0	4,386.0	18.1%	15,933.0	14.6x	10.8x	13.3x	20.4x	14.0x
NVDA US	NVIDIA Corp	NASDAQ GS	133,562.9	11,716.0	4,141.0	35.3%	1,988.0	36.2x	27.4x	60.2x	39.9x	30.5x
AMD US	Advanced Micro Devices Inc	NASDAQ GS	43,888.1	6,475.0	337.0	5.2%	1,250.0	42.1x	28.0x	170.1x	64.4x	36.4x
STM IM	STMicroelectronics NV	Brsaltaliana	22,624.2	9,664.0	1,287.0	13.3%	1,910.0	10.3x	8.7x	24.8x	23.1x	18.6x
Average			112,956.3	23,970.7	7,243.8	26.7%	10,822.2	20.8x	15.8x	52.6x	29.2x	20.9x
Memory Manufacturers (NAND, DRAM)												
000660 KS	SK Hynix Inc	Korea SE	51,505.7	36,771.7	14,128.7	38.4%	4,743.5	6.0x	4.5x	10.4x	25.0x	13.0x
MU US	Micron Technology Inc	NASDAQ GS	53,315.6	23,406.0	6,313.0	27.0%	5,851.0	5.9x	3.9x	8.1x	19.1x	9.4x
2408 TT	Nanya Technology Corp	Taiwan	7,159.5	2,811.9	1,306.4	46.5%	0.0	7.2x	6.4x	13.2x	20.2x	17.7x
Average			37,326.9	20,996.5	7,249.4	37.3%	3,531.5	6.4x	4.9x	10.6x	21.4x	13.3x
Foundries												
2330 TT	Taiwan Semiconductor Manufa	Taiwan	264,292.2	34,234.2	11,653.9	34.0%	5,898.9	11.5x	9.6x	24.5x	23.6x	19.2x
005930 KS	Samsung Electronics Co Ltd	Korea SE	262,834.3	221,631.0	39,904.5	18.0%	13,172.0	4.2x	3.6x	14.3x	16.0x	12.3x
UMC US	United Microelectronics Corp	New York	6,013.7	5,020.0	234.7	4.7%	2,787.1	3.7x	3.4x	n.a.	22.6x	17.1x
SMICY US	Semiconductor Manufacturing	OTC US	6,520.9	3,360.0	134.1	4.0%	3,426.2	n.a.	n.a.	n.a.	n.a.	n.a.
TSEM US	Tower Semiconductor Ltd	NASDAQ GS	2,417.4	1,304.0	135.6	10.4%	267.5	6.6x	5.8x	22.2x	22.1x	17.1x
Average			108,415.7	53,109.8	10,412.6	14.2%	5,110.3	6.5x	5.6x	20.3x	21.1x	16.5x
Semiconductor Equipment/Service Providers (Foreign)												
AMAT US	Applied Materials Inc	NASDAQ GS	53,845.6	14,608.0	2,706.0	18.5%	5,313.0	12.4x	10.7x	19.6x	15.6x	13.4x
ASML US	ASML Holding NV	NASDAQ GS	115,558.1	12,926.2	3,061.0	23.7%	3,465.9	32.9x	23.4x	n.a.	40.0x	28.7x
3711 TT	ASE Technology Holding Co Ltd	Taiwan	10,929.4	12,316.4	838.4	6.8%	6,473.7	7.0x	6.2x	13.0x	19.3x	13.5x
8035 JP	Tokyo Electron Ltd	Tokyo	34,368.0	11,530.0	2,239.1	19.4%	0.0	13.3x	11.3x	19.3x	21.4x	17.9x
Average			53,675.3	12,845.2	2,211.1	17.1%	3,813.2	16.4x	12.9x	17.3x	24.1x	18.4x
Semiconductor Equipment/Service Providers (Singapore)												
AEM SP	AEM Holdings Ltd	Singapore	349.6	194.5	24.8	12.8%	0.2	7.2x	6.9x	14.3x	10.3x	9.0x
UMSH SP	UMS Holdings Ltd	Singapore	353.4	94.9	31.9	33.7%	14.9	11.5x	10.2x	11.5x	14.3x	12.0x
FRKN SP	Frencken Group Ltd	Singapore	277.9	464.0	22.3	4.8%	50.4	5.5x	5.2x	12.8x	9.4x	8.6x
AVIT SP	Avi-Tech Electronics Ltd	Singapore	45.7	24.6	3.4	13.8%	0.1	3.6x	3.4x	13.4x	10.6x	9.8x
MMH SP	Micro-Mechanics Holdings Ltd	Singapore	184.2	44.2	9.5	21.5%	0.0	9.6x	9.1x	19.3x	16.7x	15.0x
Average			242.2	164.4	18.4	17.3%	13.1	7.5x	7.0x	14.3x	12.3x	10.9x

Source: Bloomberg Finance L.P., DBS Bank

Stock Picks

Room for further upside? The share prices of pure semiconductor plays listed on SGX have surged c. 50% over the last two months, on the back of the strong results and guidance from some of the big global players in the technology space, and partly due to the avoidance of a technical recession in Singapore. Market sentiment has also improved during this period, with the ST Index registering c.5% gain.

Therefore, is there any more upside for the semiconductor stocks after a strong run? We believe so, judging from 1) the uptick in the global semiconductor shipments; 2) positive guidance from global players and positive forecasts on industry trend, and 3) more room for valuation re-rating towards the PE valuation reached during the previous peak cycle. The pure semiconductor plays like AEM, UMS, Avi-Tech and Micro-Mechanics are currently trading at >30% below peak cycle valuations, except for Frencken, which has a c.20% exposure to the semiconductor industry. *(Please refer to PE Valuation Chart on the next page)*

AEM Holdings (Initiate with BUY; TP: S\$2.38)

Beneficiary of rising new technologies. We initiate coverage on AEM Holdings, which is a solutions provider for the back-end testing of the semiconductor manufacturing process for its key customer, Intel. Intel is increasing capex and production capacity, which should drive demand for test handlers, where AEM is believed to be the sole supplier to Intel's test handlers. New technology (AI, 5G, and data centers) is also expected to drive longer test times, leading to higher demand for test handlers. Furthermore, AEM is also working towards diversification of revenue through new projects and customers. New initiatives include supplying cable testing solutions for Huawei's 5G rollout.

UMS Holdings (BUY; TP: S\$1.08)

Riding on increasing demand on semiconductor equipment driven by new technologies and 5G. We upgraded UMS Holdings to BUY from Fully Valued back in October, premised on resumption of the growth in global semiconductor equipment sales in 2020. At the company level, our channel checks also showed that UMS is beginning to see a pick-up in

semiconductor sales. The recent 3Q19 results further reinforced our view. UMS is now witnessing signs of an upturn in the overall semiconductor industry as demand is picking up with chip inventories easing and new technological disruptors driving the growth of new products and capabilities. The successful renewal of its integrated system business contract with key customer, AMAT, for another three years helps to strengthen earnings visibility. We remain positive on the turnaround in the semiconductor segment and expect sales momentum to continue.

Frencken Group (BUY; TP: S\$1.06)

c.20% exposure to semiconductor; presence in wide variety of industries provides resilience and stability. We expect Frencken Group (FRKN) to benefit from the turnaround in the Semiconductor segment given its c.20% revenue exposure. Industrial Automation remains a key division, riding on the optimistic outlook of its key customer. FRKN's strong presence in a wide variety of industries and business segments - Automotive, Analytical & Life Science, Medical, Semiconductor and Industrial & Industrial Automation provides greater resilience and stability. At current valuations of 9.4x FY19F and 8.6x FY20F earnings, FRKN is trading at about a 30% discount to its peers' average of c.12x price-to-earnings (PE). In our view, this discount is too steep. The stock is supported by a dividend yield of about 3.2%, based on a 30% payout ratio.

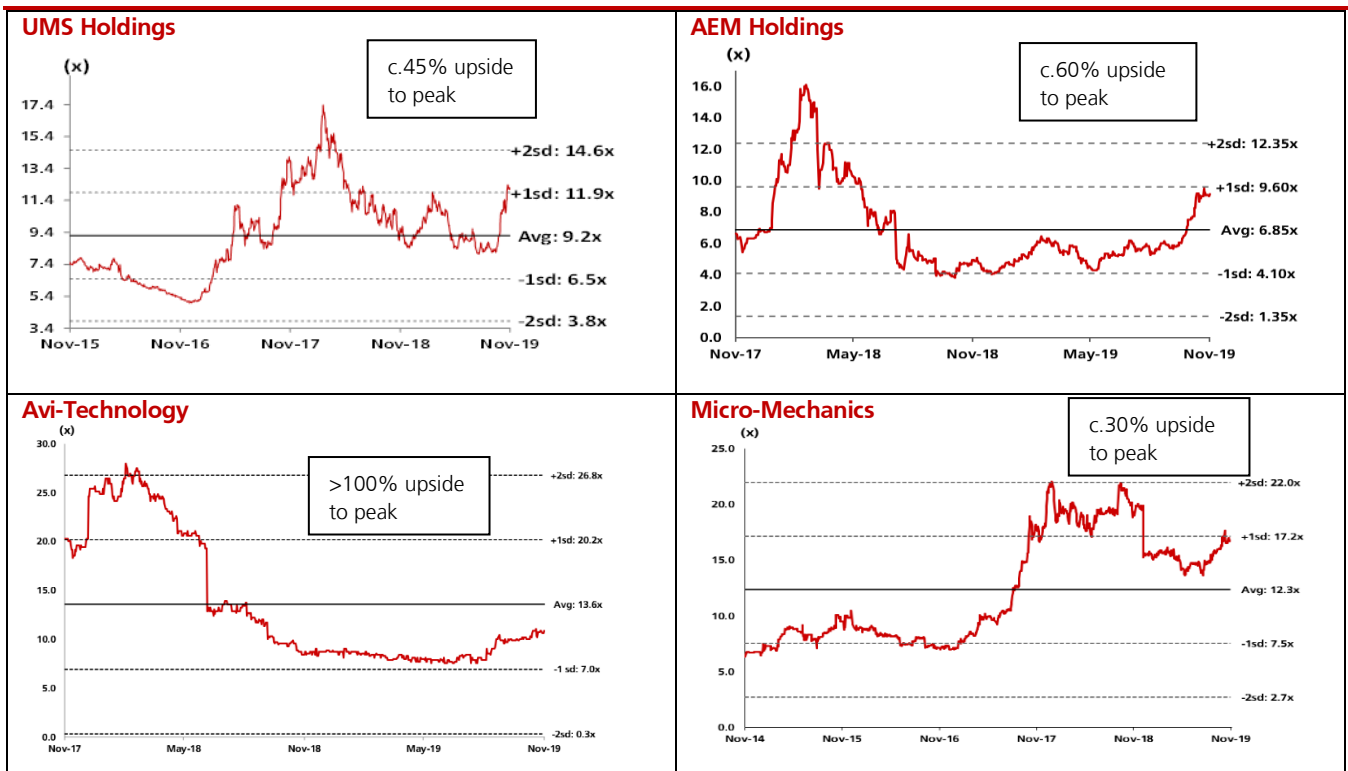
Avi-Technology (Return rating 1; Fair value S\$0.47)

Benefitting from structural change in automotive industry towards EV. Avi-Tech provides burn-in tests and burn-in boards, printed circuit board assembly services, and engineering services for semiconductor equipment. The group is well-positioned to benefit from the expected turnaround in the semiconductor industry, as more than 90% of Avi-Tech's business involves providing semiconductor chip testing services to customers, who are major players in their respective industry. Avi-Tech is also a beneficiary of the structural change in automotive industry towards electric vehicles (EV) with its >50% revenue exposure to the semiconductor automotive segment.

Micro-Mechanics (Return rating 2; Fair value S\$2.13)

Riding on improving demand for semiconductor components; strong financials with zero debt and attractive yield. Micro-Mechanics is a manufacturer of consumable parts and tools used in the fabricating, chip testing and assembling of semiconductors. The group is a major beneficiary of the bottoming semiconductor industry. It is a relatively low risk counter with no debt and strong cash flow generating ability, coupled with attractive dividend yield of c.5.6%.

PE Valuation Chart



Source: DBS Bank

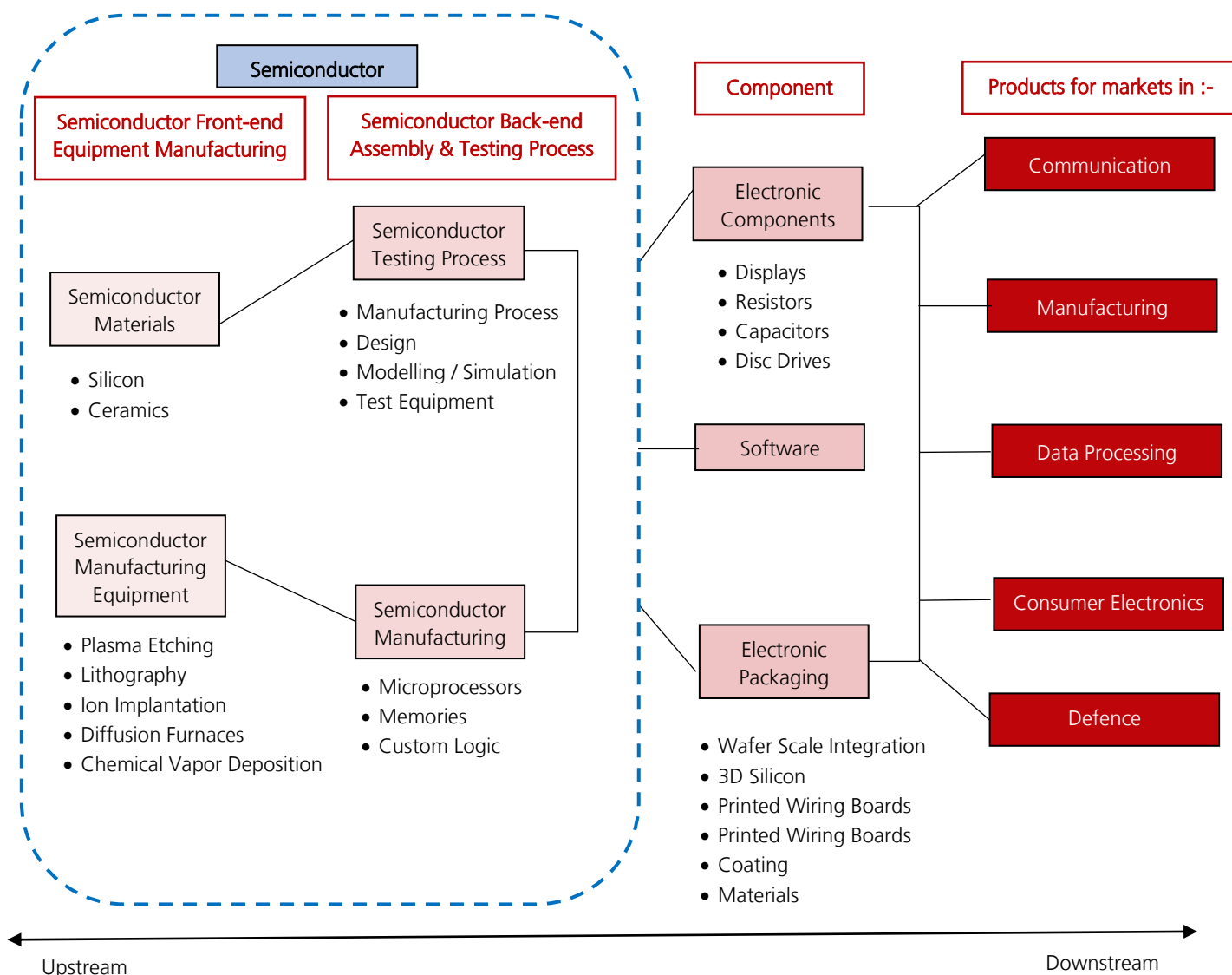
Key Data for Stock Picks

Company	Mkt Cap (\$m)	Curr.Price (\$)*	12-mth TP (\$m)	% upside	Rec'd	PE (x) FYA	PE (x) FY1	PE (x) FY2	Div Yld (%) FY1
AEM	480	1.78	2.38	34	BUY	14.3	10.3	9.0	8.3
UMS	496	0.93	1.08	17	BUY	11.5	14.3	12.0	3.8
Frencken	386	0.91	1.06	16	BUY	12.8	9.4	8.6	3.2
Avi-Tech	62	0.37	0.47	28	NR	13.4	10.6	9.8	2.8
Micro-Mechanics	250	1.80	2.13	18	NR	19.3	16.7	15.0	5.6
Average						14.3	12.3	10.9	4.7

Source: DBS Bank

*price as at 26 Nov 19

Simplified Illustration of the Technology Value Chain



Source: Company, DBS Bank

Company Profiles

Singapore Company Focus

AEM Holdings Ltd

Bloomberg: AEM SP | Reuters: AEM.SI

Refer to important disclosures at the end of this report

DBS Group Research . Equity

29 Nov 2019

BUY

(Initiating Coverage)

Last Traded Price (28 Nov 2019): S\$1.7 (STI : 3,200.61)

Price Target 12-mth: S\$2.38 (39% upside)

Potential Catalyst: Increased sales guidance, acquisitions

Analyst

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Singapore Research Team equityresearch@dbs.com..

Price Relative



Forecasts and Valuation

FY Dec (\$m)	2018A	2019F	2020F	2021F
Revenue	262	308	361	394
EBITDA	41.6	60.6	69.3	76.6
Pre-tax Profit	40.0	56.3	64.2	69.8
Net Profit	33.5	46.7	53.3	57.9
Net Pft (Pre Ex.)	33.5	46.7	53.3	57.9
EPS (S cts)	12.4	17.3	19.7	21.5
EPS Pre Ex. (S cts)	12.4	17.3	19.7	21.5
EPS Gth (%)	(75)	39	14	9
EPS Gth Pre Ex (%)	(75)	39	14	9
Diluted EPS (S cts)	12.4	17.3	19.7	21.5
Net DPS (S cts)	3.41	4.33	4.94	5.37
BV Per Share (S cts)	33.3	46.2	61.0	77.1
PE (X)	14.4	10.3	9.1	8.3
PE Pre Ex. (X)	14.4	10.3	9.1	8.3
P/Cash Flow (X)	14.1	13.4	9.0	7.6
EV/EBITDA (X)	10.2	6.7	5.4	4.3
Net Div Yield (%)	1.9	2.4	2.8	3.0
P/Book Value (X)	5.4	3.9	2.9	2.3
Net Debt/Equity (X)	CASH	CASH	CASH	CASH
ROAE (%)	45.5	43.6	36.9	31.1

Consensus EPS (S cts): 16.3 17.0 16.3
Other Broker Recs: B: 3 S: 0 H: 0

GIC Industry: Information Technology

GIC Sector: Technology Hardware & Equipment

Principal Business: AEM provides handling and test solutions to the most advanced manufacturers who operate in the 5G economy including microprocessors, high speed communications, IoT devices, and solar cells.

Source of all data on this page: Company, DBS Bank, Bloomberg Finance L.P.

“Testing” new highs

- Initiating coverage with a BUY and TP of S\$2.38, representing a potential upside of 39%
- Key customer is increasing capex and production capacity
- New technology structurally increases test times, leading to higher demand for test handlers
- Diversification of revenue stream through new projects and customers

Leveraging on increasing capex for key customer. Intel has guided for a record-high capex of US\$16bn in FY19 on the back of developments in new technology. The company intends to continue to increase its 14-nm and 10-nm production capacities by 25% each in 2020 to meet customers' demand. This should drive demand for test handlers, where AEM is believed to be the sole supplier.

New technology to drive longer test times, leading to higher demand for test handlers. As technology nodes shrink, longer test times are required to perform more complex tests. In addition, systems and devices used in safety-critical markets such as automotive (driverless vehicles), industrial, and medical equipment, will require more stringent system level tests. These would lead to higher demand for test handlers.

Diversification of revenue through new projects and customers. AEM is working with its key customer to develop hybrid extensions for the customer's existing handlers as well as new technology used in quantum computing testing. Other initiatives include supplying cable testing solutions for Huawei's 5G rollout.

Valuation:

Initiate with a BUY and TP of S\$2.38, offering a potential upside of 39%. Our TP is pegged to 12.1x FY20F PE, and is well below its industry peers' FY20F PE of 17.8x. The share price trades closely to the semiconductor cycle and we believe that there will be a further re-rating of its valuation multiple as the cycle begins to pick up, driven by demand for new technology.

Key Risks to Our View:

Single-customer concentration risk, escalation or continued protraction of geopolitical events, and FX risk.

At A Glance

Issued Capital (m shrs)	270
Mkt. Cap (\$m/US\$m)	461 / 354
Major Shareholders (%)	
Leng Toh Ban	7.8
Standard Life Aberdeen	7.7
Morgan Stanley	6.0
Free Float (%)	73.0
3m Avg. Daily Val (US\$m)	7.9



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Live more, Bank less

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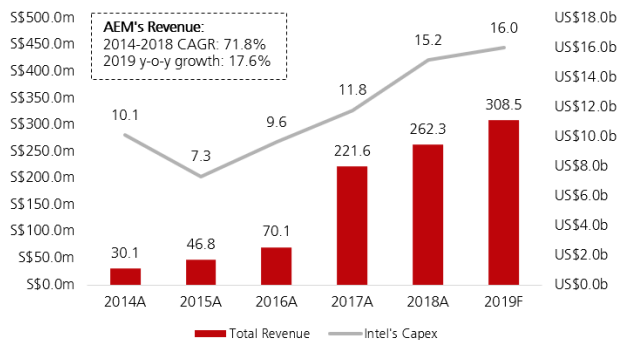
Investment Summary

Initiate with a BUY and TP of S\$2.38, representing a potential upside of 39%. The entire semiconductor manufacturing value chain is poised to benefit from the demand driven by new technology (AI, 5G, and data centres). Intel is well positioned to ride on this trend. We believe that AEM is the sole supplier of key customer Intel's test handler, accounting for c.90% of total revenue, we are bullish on AEM's prospects. The share price trades closely to the semiconductor cycle and we believe that there will be a further re-rating of its valuation multiple as the cycle begins to pick up.

Key customer is increasing capex

AEM's key customer is increasing its FY19 capex guidance. Intel upped its capex guidance to US\$16.0bn, from US\$15.5bn in July 2019. They believe that the world is at a key inflection point with exponential growth of data creating massive demand for semiconductors. 5G deployment, significant enabling of IoT by 5G, advancements in Artificial Intelligence (AI) and a rising demand for cloud computing are expected to fuel this growth. Intel's capex to increase production capacity translates into higher orders received by AEM as the company would require more test handlers from AEM to manage the back-end testing of its products. More test handlers are also expected to drive revenue for AEM's Consumables and Services business segment.

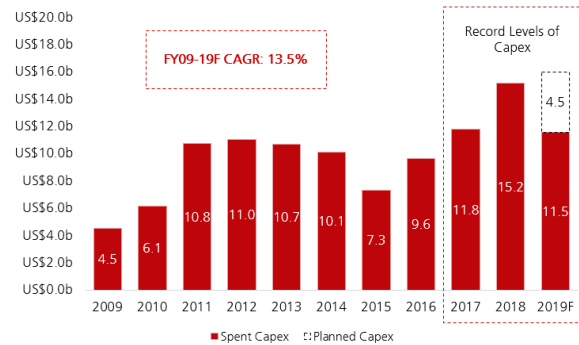
AEM's Revenue vs. Intel's Capital Expenditure



Source: AEM, Intel, Bloomberg Finance L.P., DBS Bank

No end in sight yet for Intel's record levels of capex. In the last 10 years, Intel's capex has grown at a CAGR of 13.5%, and the company has achieved record levels of capex in the past three years in order to increase production capacity to meet market demand. As a result, Intel managed to increase its 14-nm production capacity by 25% for its production in 2019, and also ramped up its 10-nm production. However, the company has still been unable to keep up with PC demand. As such, Intel is planning to continue increasing its 14-nm and 10-nm production capacities by 25% each in 2020. Their spending to increase production capacity will in turn drive demand for AEM's equipment and services.

Intel's Record Levels of Capital Expenditure



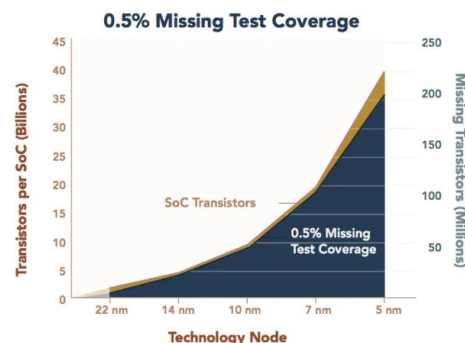
Source: Intel, Bloomberg Finance L.P., DBS Bank

New technology to drive longer test times, leading to higher demand for test handlers

AI, 5G, and memory and storage will drive longer test times.

Intel intends to expand its 10-nm portfolio, (which will result in an increase in demand for the company's chips) as well as to develop and launch smaller and more advanced chips. As technology nodes get smaller, it means that there are more transistors packed into a chip. As such, the number of transistors in a 0.5% missing test coverage increases exponentially. As advancements in new technology (5G, IoT, AI, and quantum computing) are made, the systems and devices will need to be rigorously tested to higher standards through system level tests. This is to ensure that they do not fail in various safety-critical markets such as automotive (driverless vehicles), industrial, and medical equipment. More complex tests have to be performed and longer test times are required as the number of potential defects increase. As such, Intel will require more test handlers from AEM to cater to the longer test times and system level tests.

Relationship between System-on-Chip Transistor Count and Missing Coverage



Source: Astronics, Semiconductor Engineering, DBS Bank

Positive forecasts on industry trend in 2020

IDC reinforces Intel’s big bets. International Data Corporation (IDC) is expecting sensors, connectivity, and AI and computer vision to drive semiconductor demand. The research company estimates consumer semiconductor segment to grow at a CAGR of 6.4% from 2018-2023 on the back of consumer IoT devices and home automation gaining traction and scale. It is also forecasting worldwide shipments of AI-optimised processors for edge systems to reach 340.1 million units in 2019, an increase of 170.0% y-o-y, and 1.5 billion units by 2023, achieving a five-year CAGR of 64.9%. The penetration rate of edge systems adopting optimised processors is anticipated to increase from 5.1% in 2018 to 40.5% in 2023. This validates and reinforces Intel’s big bets on new technology, further solidifying our belief in the company’s increased demand for AEM’s test handlers.

Product Segment	2018-2023F CAGR (%)
Consumer semiconductor	6.4
AI-optimised processors	64.9
x86 servers	11.3
Solid-state drives	9.8

Source: IDC, DBS Bank

Shipment and inventory trend turning positive

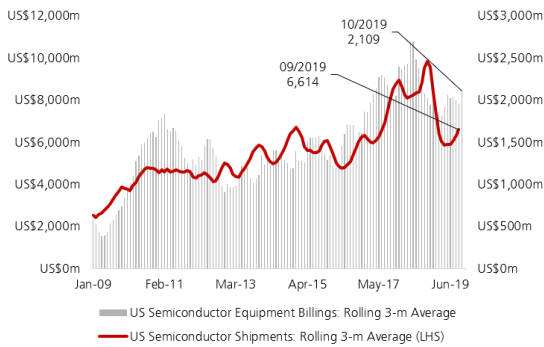
Semiconductor shipment volumes are recovering on the back of a demand-supply rebalance. In 2017, the semiconductor market boomed as its top three end-markets, namely PCs, mobile phones, and data centres, drove demand. As semiconductor companies ramped up production, end-market companies accelerated their orders in the face of an escalating trade war, providing an additional leg to semiconductor shipments in 2018. As geopolitical tensions weighed on end-market demand, and companies restructured their supply chain by relocating their manufacturing facilities out of China, semiconductor shipments began to fall in 4Q18. However, as new technology ushers in the demand for more advanced chips, semiconductor shipments bottomed out in April 2019, and a recovery in shipment volumes in recent months indicate that the semiconductor cycle is beginning to turn upwards.

Worldwide Semiconductor Shipments



Source: CEIC, Semiconductor Industry Association, DBS Bank

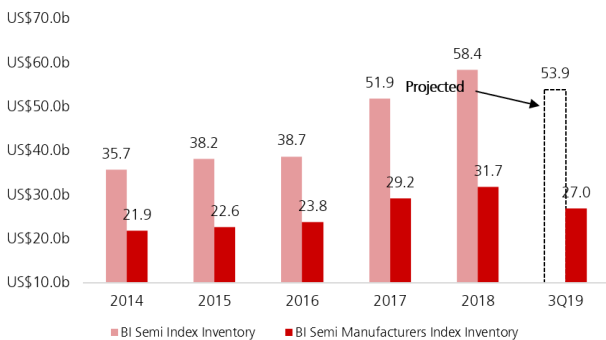
US Semiconductor Shipments and Equipment Billings



Source: CEIC, SEMI, Semiconductor Industry Association, DBS Bank

Inventory de-stocking. Inventory levels, which are a function of both projected demand as well as current demand, are trending down. Semiconductor companies build up their inventories mainly in anticipation of a surge in demand due to new technology. Other factors such as a possible escalation of US-China tariffs and weakening demand due to the geopolitical issues also contributed to the build-up in inventory levels. However, in the most recent quarter, we are beginning to see a drawdown in inventory levels for both the semiconductor manufacturers (BI Semi Manufacturers Index Inventory) and the chip makers (BI Semi Index Inventory).

Major Semiconductors' and Semiconductor Manufacturers' Inventory



Source: Bloomberg Finance L.P., DBS Bank

Diversification of revenue through new projects and customers

Developing hybrid extensions to existing handlers for its key customer. AEM is currently working with its key customer, Intel, to provide hybrid extensions for their existing handlers. These hybrid extensions will expand on AEM's existing test handler's capabilities and potentially enable AEM to gain a larger wallet share from Intel. As of 3Q19, the company had successfully installed the Beta unit of the hybrid extensions. These new projects are expected to contribute meaningful revenue from 2020 onwards.

AEM leaps into quantum computing through Afore. AEM's wholly-owned subsidiary, Afore, together with its partner, has

developed a new solution for Intel's quantum computing program, which we believe will help the Group penetrate into new markets in the quantum computing field.

For quantum computing to work, superconducting chips known as superconducting qubits are required. These chips attain superconducting characteristics at critically low temperatures and thus this as an additional criterion required for testing. In February 2019, Afore, together with Bluefors, developed a first-of-its-kind tool for wafer level probing at cryogenic temperatures of below 4 Kelvin (K). AEM is currently in discussions to get orders for its Cryogenic Wafer Prober for testing quantum computing wafer at temperatures below 2K.

Customer diversification in all key business segments.

In 9M19, AEM's revenue from its System Level Test & Inspection (SLT-i), Micro-Electro-Mechanical Systems (MEMS), and Test & Measurement Solutions (TMS) increased 39.3% y-o-y as the company gained orders from new and existing customers. As system level tests become increasingly important under new technology, AEM is currently engaging new semiconductor and memory customers for its SLT-i business. For the MEMS segment, AEM has also received an order from a major German sensor supplier in the automotive and consumer industries for a wafer level test handler for environment sensors.

In addition, AEM has won a contract to supply cable testing solutions for Huawei's 5G rollout in 2019 under its TMS business. While the contributions of these businesses are still small, we are positive on AEM's initiative given the potential and development in the 5G space.

Valuation & Peers Comparison

Valuation

FY20F forward PE of 12.1x implies a target price of S\$2.38, representing an upside of 39%. AEM's forward PE trades closely to the semiconductor billing cycle. We believe that there will be further upward re-rating of AEM's valuation multiple as the semiconductor cycle begins to turn around, driven and catalysed by the 5G rollout and demand from new technology. Our PE multiple of 12.1x is close to the +1SD and is based on a 25% discount to its 2-year high, at the peak of the previous semiconductor cycle. AEM is currently trading at 9.1x FY20F forward PE, which is a deep discount to its industry peer average of 17.8x. In our view, the single-customer concentration risk is weighing heavily on its valuation multiple.

AEM is currently trading at +0.8SD, above its 2-year average forward PE. AEM's valuation multiple has begun its re-rating as the semiconductor cycle has started to recover. It had surpassed its 2-year average forward PE in October and is currently trading at +0.8SD its 2-year average. We believe there is still further upside as it is still trading below its valuation multiple during the cycle boom, of c.16x in March 2018.

AEM's Forward PE and Equipment Billings



Source: CEIC, Semiconductor Industry Association, Company, DBS Bank

AEM's 2-Year Forward PE



Source: Bloomberg Finance L.P., Company, DBS Bank

Key Assumptions

Revenue growth of 17.6%/17.2%/9.0% in FY19F/20F/21F. We are optimistic on Intel's increase in capex and focus, as well as AEM's various initiatives to drive revenue through new projects from its key customer and securing new customers.

- Equipment and Systems Solutions revenue as a percentage of Intel's capex to increase by 10 basis points (bps) each year as Intel would require more test handlers to increase its production as well as orders for AEM's cryogenic wafer-level prober.
- MEMS TAM to grow at a CAGR of 10%; market share to increase by 20bps due to synergies from customer access and technology between AEM and Afore.

Gross profit margins of 37.0%/ 36.5%/ 36.5% in FY19F/ 20F/ 21F. Gross profit margins to decline slightly due to a higher mix of tools and machines to Intel, which have lower margins than its consumables and services.

EBIT margins of 18.2%/ 17.6%/ 17.6% in FY19F/ 20F/ 21F.

EBIT margins are projected to decline slightly. Due to:

- Lower gross profit margins; and
- Higher distribution costs and wages as a percentage of revenue

Peer Comparison Table

Bloomberg Ticker	Company Name	Market Data		Financial Data				Valuation				
		Primary Exchange	Market Cap (US\$m)	Sales (US\$m)	Net Profit (US\$m)	Net Profit Margin (%)	Debt (US\$m)	EV/EBITDA		P/E		
								FY19F	FY20F	FY18	FY19F	FY20F
Singapore												
AEM SP Equity	AEM Holdings Ltd	Singapore	337.8	194.5	24.8	12.8%	0.2	9.3x	7.7x	19.1x	13.7x	12.1x
COHU US Equity	Cohu Inc	NASDAQ GS	737.0	451.8	-32.2	-7.1%	352.8	15.1x	10.1x	N/A	127.6x	17.4x
XCRA US Equity	Xcerra Corp	Acquired in 2018	N/A	390.8	22.6	5.8%	21.3	N/A	N/A	N/A	13.7x	12.5x
6857 JP Equity	Advantest Corp	Tokyo	9,757.7	2,547.8	514.1	20.2%	0.0	17.5x	14.3x	19.6x	27.0x	21.2x
522 HK Equity	ASM Pacific Technology Ltd	Hong Kong	5,371.9	2,494.5	282.7	11.3%	445.0	23.1x	12.8x	42.1x	66.2x	20.2x
Average			4,051.1	1,215.9	162.4	8.6%	163.9	16.2x	11.2x	26.9x	49.6x	16.7x
Peer Average (Excluding AEM)			5,288.8	1,471.2	196.8	7.5%	204.8	18.6x	12.4x	30.9x	58.6x	17.8x

Source: Bloomberg Finance L.P., Company, DBS Bank

Key Risks

Single-customer concentration risk. Intel is AEM's major customer, accounting for 94.0% of AEM's revenue in FY18. As such, AEM is heavily dependent on Intel's orders for its revenue. Furthermore, c.50% of its revenue in FY18 stemmed from tools and machines, which is lumpy in nature and dependent on Intel's needs for its production capacity.

However, due to AEM's customised solutions that stems from its 17-year working relationship with Intel, AEM is able to substantially reduce the cost of testing for its major customer. As such, Intel relies heavily on AEM for its test handlers. In addition, given our positive outlook on the areas Intel is focusing on and that Intel is a world-class semiconductor company, we believe AEM will continue to grow with its major customer and this is more of a boon than a bane.

Escalation or continued prolonging of geopolitical events.

Several major geopolitical events (US-China trade war, Japan-Korea trade feud, and the Hong Kong protests) have been ongoing for prolonged periods and are beginning to weigh on global growth. Earlier in October, the International Monetary

Fund (IMF) downgraded its 2019 global growth forecast from 3.3% in April to 3.0%, citing among others, the escalation of trade tensions between the US and China, faster-than-expected slowdown in China, political crisis in Hong Kong, and trade tensions between Japan and South Korea. These events have hampered global growth and disrupted supply chains, and a further escalation or protraction could slow down the development of new technology which would impact the demand for semiconductors.

Foreign exchange risk. In FY18, AEM recorded S\$1.9m of foreign exchange losses, accounting for 5.7% of FY18's net profit. AEM's foreign currency transactions are mainly denominated in USD, MYR, and RMB. Two of its largest sales regions are Malaysia and China which accounted for 34.4% and 27.3% of FY18 sales respectively. However, AEM sources its raw materials mainly in USD and SGD. In addition, its main production operations are in Singapore, where the operating expenses are denominated in SGD. As such, AEM is exposed to foreign exchange translation risk, and the company partially hedges these exposures through forward contracts.

SWOT Analysis

Strengths	Weakness
<ul style="list-style-type: none"> • High quality of results through test solutions without exponentially increasing the cost of testing • High barriers of entry as it provides niche, customised solutions for its key customer • Strong, long-term relationship with key customer 	<ul style="list-style-type: none"> • Solutions are non-transferrable as they are customised for its customer • c.50% of the company's sales are lumpy and dependent on its key customer's production capacity needs
Opportunities	Threats
<ul style="list-style-type: none"> • Increase its presence in different parts of the value chain through acquisitions • Pursue additional projects with its existing key customer • Mergers & Acquisitions (M&A) opportunities 	<ul style="list-style-type: none"> • Single key customer risk • Trade war slowing the demand for new technology developments

Source: DBS Bank

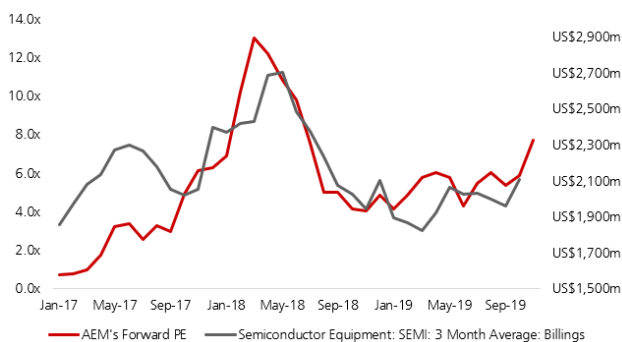
Critical Factors

Intel’s capital expenditure guidance. AEM supplies test handlers to facilitate the back-end testing of Intel’s semiconductors. However, prior to and after the sale of its test handlers, AEM provides diversified services ranging from the design and engineering of the product, to the field support and replacement of parts to Intel. This allows AEM to capture different types of revenue streams including equipment sales, recurring kit/consumable sales, and services. The amount that Intel spends on AEM’s solutions can be proxied by its guided capex. As such, one of immediate drivers of AEM’s revenue is Intel’s capex. Intel has continued to increase its capex, hitting record levels in recent years. In addition, given its area of focus in the expanding new technology, we are positive that this will spill over to benefit AEM.

Intel’s production capacity and production levels. As Intel decides to increase its production capacity and/or production levels, it would require more test handlers to meet the increase in back-end testing of its chips. As of 9M19, Intel had sufficient test handlers from AEM to meet all of its current production capacity. However, in Intel’s 9M19 earnings call, the company guided that it will be increasing the production capacities of its 14-nm and 10-nm chips by 25% each in 2020. We believe Intel will procure more test handlers from AEM to cater to its increase in production capacity.

Semiconductor equipment billings. AEM’s forward PE trades closely to the semiconductor billing cycle. An upward cycle would cause the stock’s PE to be re-rated upwards, and vice versa in a down cycle.

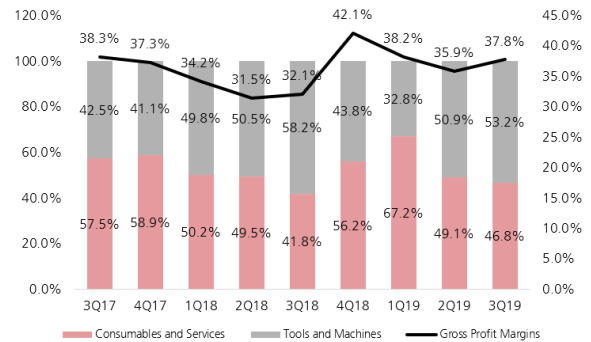
AEM’s Forward PE and Equipment Billings



Source: CEIC, Semiconductor Industry Association, Company, DBS Bank

Proportion of sales mix. AEM’s Consumables and Services have slightly higher margins as compared to its Tools and Machines segment. As such, a higher sales proportion of Consumables and Services would result in higher gross profit margins.

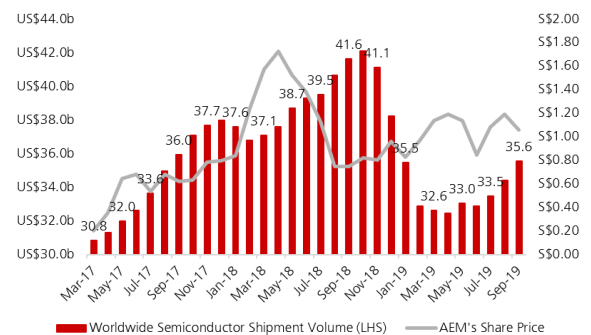
AEM’s Type of Revenue Stream and Gross Profit Margins



Source: Company, Bloomberg Finance L.P., DBS Bank

Expectations on the semiconductor cycle. Worldwide semiconductor shipment volumes are a proxy for the demand for semiconductors. As the demand for semiconductors increases, more chips would have to be manufactured and tested. As such, AEM’s earnings move in tandem with the semiconductor cycle and expectations of an uptrend in the cycle (shipment volume) will cause its share price to rise. Worldwide semiconductor shipment volumes bottomed in April 2019 and have been on a recovery trend since. With a positive outlook on semiconductor demand, especially in 5G, IoT, AI and quantum computing, which are Intel’s areas of focus, we are bullish on semiconductor shipment volumes and AEM.

Worldwide Semiconductor Shipment Volume

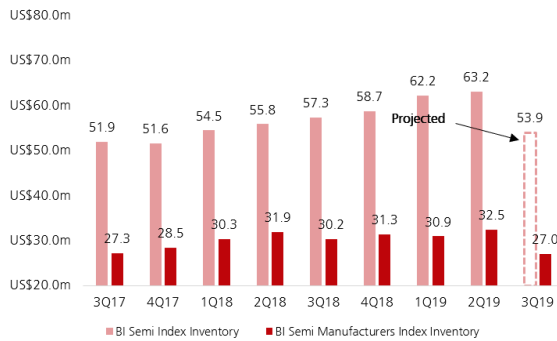


Source: CEIC, Semiconductor Industry Association, DBS Bank

Major semiconductors’ and semiconductor manufacturers’ inventory volume. Inventory levels are a function of both projected demand as well as current demand. Semiconductor companies build up their inventories mainly in anticipation of a surge in demand due to new technology. Other factors such as a possible escalation of US-China tariffs and weakening demand due to geopolitical issues also contributed to the build-up in inventory levels. However, in the most recent quarter, we are

beginning to see a drawdown in inventory levels for semiconductor manufacturers, indicating lower inventory levels and higher demand on the end of semiconductor companies.

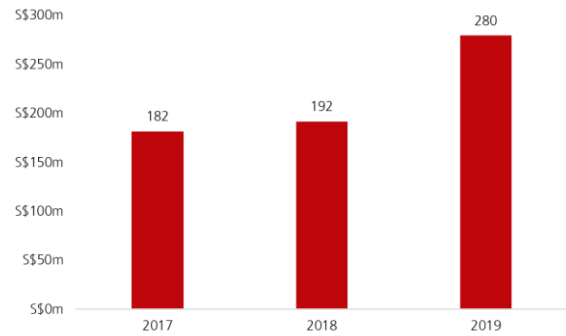
Major Semiconductors' and Semiconductor Manufacturers' Inventory



Source: Bloomberg Finance L.P., DBS Bank

The size of AEM's order book. AEM aims to provide guidance on its revenue to the best of its ability through its order book. The company will announce order wins as and when it has secured a contract with customers. The company's order wins are translated into revenue and in the last three years, AEM has managed to consistently increase its order book.

AEM's Order Book



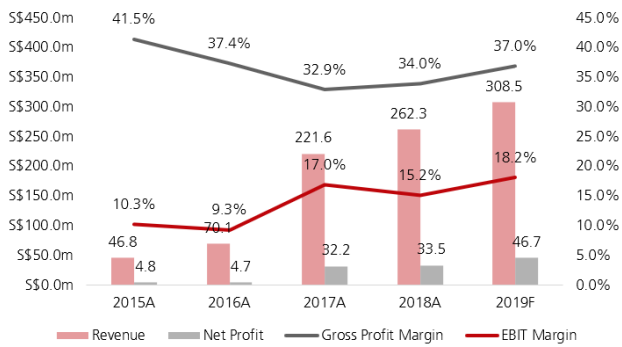
Source: Company, DBS Bank

Complexity of chip-testing requirements. The demand for its test handlers is affected by the total test time required by Intel, which is a function of 1) The test complexity of the semiconductors chips, and 2) The number of semiconductor chips it has to test. A product that requires more complex testing will require a longer test time, which will result in more test handlers in order to meet the same production levels. New technology will drive longer test times due to more complex and rigorous testing involved. In addition, as test handlers are utilised at a higher rate, the consumables will have to be replaced more frequently due to wear-and-tear.

Financials

Increasing sales, earnings, and profitability. In the past five years, AEM has grown its sales mainly organically through its key customer. As its key customer began to order more consumables for its test handlers which have higher margins, AEM’s gross profit margins rose in tandem. Moving forward, besides organic growth, we are anticipating sales to also be driven inorganically via M&A, and through new customers.

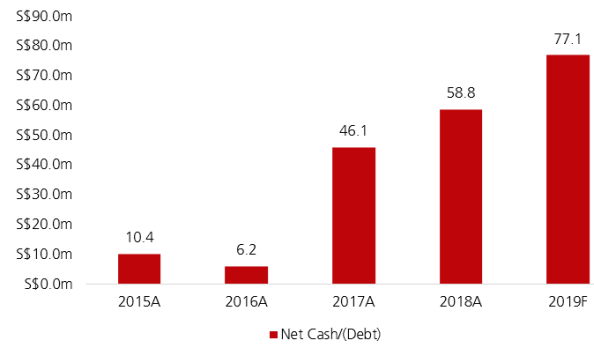
AEM’s Sales and Profitability



Source: Company, DBS Bank

Net cash position with no debt. As of 3Q19, AEM had no borrowings, and had a cash balance of S\$64.8m. In the last five years, AEM has had close to negligible debt levels and has been financing its operations and acquisitions through its own cash. AEM is currently on the lookout for potential acquisitions that will synergise with its business and we believe the company is maintaining its current level of cash for that purpose.

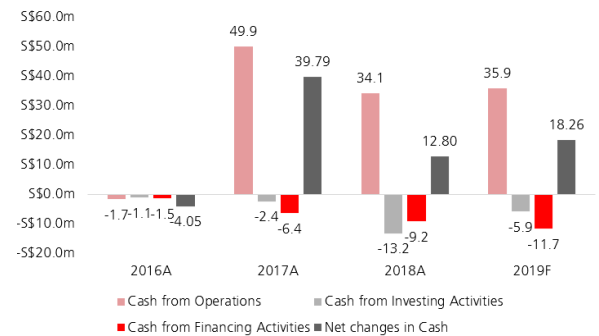
AEM’s Cash/(Debt) Level



Source: Company, DBS Bank

Strong cash flows. Since 2017, AEM has been generating positive cash flows which are attributable to its strong cash flow from operations and prudence in cash management.

AEM’s Cash/(Debt) Level



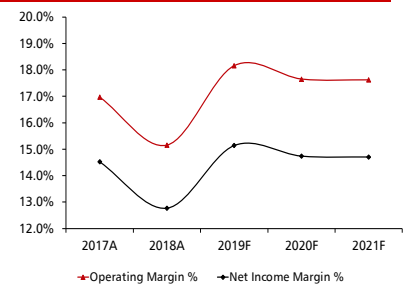
Source: Company, DBS Bank

Income Statement (\$\$m)

FY Dec	2016A	2017A	2018A	2019F	2020F	2021F
Revenue	70.1	222	262	308	361	394
Cost of Goods Sold	(43.9)	(149)	(173)	(194)	(229)	(250)
Gross Profit	26.2	73.0	89.1	114	132	144
Other Opng (Exp)/Inc	(19.7)	(35.4)	(49.4)	(58.1)	(68.1)	(74.4)
Operating Profit	6.55	37.6	39.8	56.0	63.8	69.4
Other Non Opg (Exp)/Inc	0.0	0.0	0.0	0.0	0.0	0.0
Associates & JV Inc	(0.5)	(0.1)	0.0	0.0	0.0	0.0
Net Interest (Exp)/Inc	0.0	0.04	0.26	0.26	0.39	0.39
Exceptional Gain/(Loss)	(0.1)	0.0	0.0	0.0	0.0	0.0
Pre-tax Profit	5.98	37.5	40.0	56.3	64.2	69.8
Tax	(1.3)	(5.4)	(6.5)	(9.6)	(10.9)	(11.9)
Minority Interest	0.0	0.0	0.0	0.0	0.0	0.0
Preference Dividend	0.0	0.0	0.0	0.0	0.0	0.0
Net Profit	4.66	32.2	33.5	46.7	53.3	57.9
Net Profit before Except.	4.77	32.2	33.5	46.7	53.3	57.9
EBITDA	6.95	38.2	41.6	60.6	69.3	76.6
Growth						
Revenue Gth (%)	49.8	216.0	18.4	17.6	17.2	9.0
EBITDA Gth (%)	14.0	449.5	8.9	45.7	14.4	10.6
Opg Profit Gth (%)	35.3	474.5	5.7	40.9	13.9	8.8
Net Profit Gth (Pre-ex)	(1.5)	575.3	4.1	39.4	14.1	8.8
Margins & Ratio						
Gross Margins (%)	37.4	32.9	34.0	37.0	36.5	36.5
Opg Profit Margin (%)	9.3	17.0	15.2	18.2	17.6	17.6
Net Profit Margin (%)	6.6	14.5	12.8	15.1	14.7	14.7
ROAE (%)	17.0	73.1	45.5	43.6	36.9	31.1
ROA (%)	10.9	39.0	26.5	29.0	25.4	22.3
ROCE (%)	17.1	72.4	44.7	42.6	36.3	30.8
Div Payout Ratio (%)	16.6	24.9	27.4	25.0	25.0	25.0
Net Interest Cover (x)	1,309.0	NM	NM	NM	NM	NM

Source: Company, DBS Bank

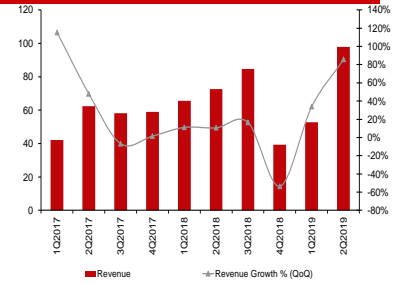
Margins Trend



Quarterly / Interim Income Statement (\$5m)

FY Dec	1Q2018	2Q2018	3Q2018	4Q2018	1Q2019	2Q2019
Revenue	65.7	72.7	84.7	39.4	52.7	97.9
Cost of Goods Sold	(43.2)	(49.8)	(57.5)	(22.8)	(32.6)	(62.8)
Gross Profit	22.4	22.9	27.2	16.6	20.2	35.2
Other Oper. (Exp)/Inc	(12.3)	(11.4)	(13.5)	(12.2)	(12.3)	(16.3)
Operating Profit	10.1	11.5	13.7	4.35	7.82	18.9
Other Non Opg (Exp)/Inc	0.0	0.0	0.0	0.0	0.0	0.0
Associates & JV Inc	(0.2)	0.0	0.0	0.25	0.09	0.05
Net Interest (Exp)/Inc	0.06	0.04	0.07	0.09	0.08	0.07
Exceptional Gain/(Loss)	0.0	0.0	0.0	0.0	0.0	0.0
Pre-tax Profit	10.0	11.5	13.8	4.68	7.98	19.0
Tax	(1.8)	(2.0)	(2.4)	(0.3)	(1.4)	(3.3)
Minority Interest	0.0	0.0	0.0	0.0	0.0	0.0
Net Profit	8.22	9.50	11.4	4.39	6.60	15.7
Net profit bef Except.	8.22	9.50	11.4	4.39	6.60	15.7
EBITDA	9.96	11.5	13.7	4.59	7.91	18.9

Revenue Trend



Mainly due to a reduction in orders from its main customer

Growth

Revenue Gth (%)	11.2	10.7	16.5	(53.5)	34.0	85.7
EBITDA Gth (%)	(5.8)	15.3	19.2	(66.4)	72.1	139.3
Opg Profit Gth (%)	(5.5)	13.4	19.1	(68.2)	79.8	141.4
Net Profit Gth (Pre-ex)	(15.4)	15.5	19.9	(61.4)	50.2	138.1

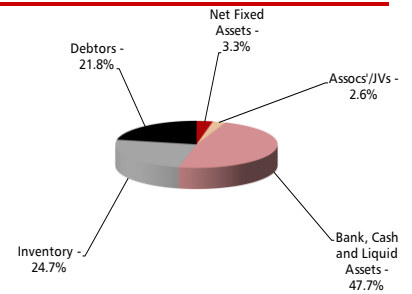
Margins

Gross Margins (%)	34.2	31.5	32.1	42.1	38.2	35.9
Opg Profit Margins (%)	15.4	15.8	16.2	11.0	14.8	19.3
Net Profit Margins (%)	12.5	13.1	13.5	11.2	12.5	16.0

Source: Company, DBS Bank

Balance Sheet (\$\$m)

FY Dec	2016A	2017A	2018A	2019F	2020F	2021F
Net Fixed Assets	2.23	3.62	5.73	5.26	6.89	6.93
Invt in Associates & JVs	4.50	4.13	4.15	4.15	4.15	4.15
Other LT Assets	0.14	3.45	17.8	19.6	20.4	21.2
Cash & ST Invt	6.31	46.1	58.9	77.2	109	150
Inventory	17.4	35.8	27.4	40.0	47.4	51.6
Debtors	17.8	23.6	18.0	35.2	41.3	46.6
Other Current Assets	0.0	0.0	4.49	4.49	4.49	4.49
Total Assets	48.4	117	136	186	234	285
ST Debt	0.08	0.01	0.0	0.0	0.0	0.0
Creditor	16.7	52.2	33.1	45.3	52.2	59.1
Other Current Liab	1.05	6.04	10.6	12.9	14.2	15.2
LT Debt	0.01	0.0	0.05	0.0	0.0	0.0
Other LT Liabilities	0.32	0.59	3.21	3.21	3.21	3.21
Shareholder's Equity	30.2	57.8	89.5	125	164	208
Minority Interests	0.0	0.0	0.0	0.0	0.0	0.0
Total Cap. & Liab.	48.4	117	136	186	234	285
Non-Cash Wkg. Capital	17.5	1.10	6.22	21.6	26.8	28.5
Net Cash/(Debt)	6.23	46.1	58.8	77.2	109	150
Debtors Turn (avg days)	73.3	34.0	28.9	31.4	38.6	40.7
Creditors Turn (avg days)	118.0	85.1	90.9	75.3	79.4	83.6
Inventory Turn (avg days)	111.7	65.7	67.4	64.9	71.2	74.3
Asset Turnover (x)	1.6	2.7	2.1	1.9	1.7	1.5
Current Ratio (x)	2.3	1.8	2.5	2.7	3.1	3.4
Quick Ratio (x)	1.4	1.2	1.8	1.9	2.3	2.7
Net Debt/Equity (X)	CASH	CASH	CASH	CASH	CASH	CASH
Net Debt/Equity ex MI (X)	CASH	CASH	CASH	CASH	CASH	CASH
Capex to Debt (%)	(4,125.9)	34,971.4	27,632.7	N/A	N/A	N/A

Asset Breakdown

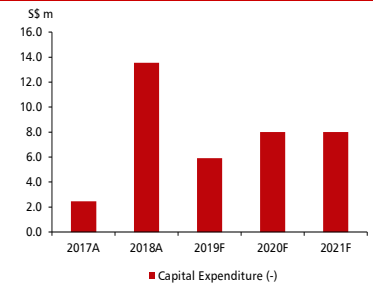
Source: Company, DBS Bank

Cash Flow Statement (\$Sm)

FY Dec	2016A	2017A	2018A	2019F	2020F	2021F
Pre-Tax Profit	5.98	37.5	40.0	56.3	64.2	69.8
Dep. & Amort.	0.86	0.70	1.87	4.56	5.52	7.22
Tax Paid	0.01	(0.3)	(5.2)	(7.3)	(9.6)	(10.9)
Assoc. & JV Inc/(loss)	0.45	0.11	0.04	0.0	0.0	0.0
Chg in Wkg.Cap.	(9.0)	10.1	(4.7)	(17.7)	(6.5)	(2.6)
Other Operating CF	0.01	1.74	2.02	0.0	0.0	0.0
Net Operating CF	(1.7)	49.9	34.1	35.9	53.6	63.5
Capital Exp.(net)	3.51	(2.5)	(13.5)	(5.9)	(8.0)	(8.0)
Other Invts.(net)	0.0	0.0	0.0	0.0	0.0	0.0
Invts in Assoc. & JV	(4.7)	0.0	0.0	0.0	0.0	0.0
Div from Assoc & JV	0.0	0.0	0.0	0.0	0.0	0.0
Other Investing CF	0.02	0.07	0.30	0.0	0.0	0.0
Net Investing CF	(1.1)	(2.4)	(13.2)	(5.9)	(8.0)	(8.0)
Div Paid	(0.7)	(4.5)	(8.4)	(11.7)	(13.3)	(14.5)
Chg in Gross Debt	(0.1)	(0.1)	(0.3)	(0.1)	0.0	0.0
Capital Issues	0.0	0.15	0.63	0.0	0.0	0.0
Other Financing CF	(0.8)	(2.0)	(1.2)	0.0	0.0	0.0
Net Financing CF	(1.5)	(6.4)	(9.2)	(11.7)	(13.3)	(14.5)
Currency Adjustments	0.29	(1.4)	1.17	0.0	0.0	0.0
Chg in Cash	(4.1)	39.8	12.8	18.3	32.3	41.0
Opg CFPS (S cts)	17.1	60.7	14.4	19.9	22.3	24.5
Free CFPS (S cts)	4.31	72.4	7.64	11.1	16.9	20.6

Source: Company, DBS Bank

Capital Expenditure



Company Background

Business Operations

AEM is a solutions provider for the back-end testing of the semiconductor manufacturing process. The company's key customer develops its own testers and AEM works with this customer by providing customised test handlers for burn-in tests, functional tests, and system-level tests.

Types of Back-end Semiconductor Tests

Types of Back-end Tests	Functional Purpose
Burn-in tests	<ul style="list-style-type: none"> To test for infant mortality
Functional tests	<ul style="list-style-type: none"> To test for the electrical characteristics of an integrated circuit
System-level tests	<ul style="list-style-type: none"> Loads the operating system and tests the IC in machine mode

Source: Company, DBS Bank

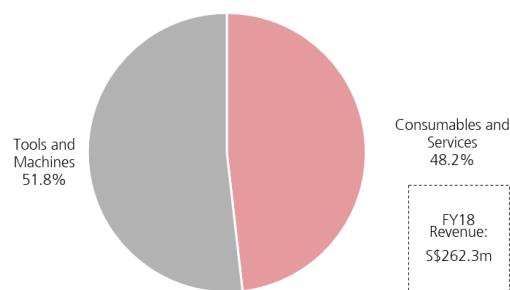
AEM works closely with its key customer in various stages to deliver test handlers. These various stages are packaged and termed "solutions". The early stages of the company's solutions include the designing and engineering of equipment and consumables. AEM then manufactures the equipment and consumables, and provides field support and post-sales replacements.

AEM's Solutions Lifecycle

Lifecycle Stage	Business	Revenue Model
1. Design	<ul style="list-style-type: none"> Automation research Automation design 	<ul style="list-style-type: none"> Services
2. Engineering	<ul style="list-style-type: none"> Tools engineering Kits development 	<ul style="list-style-type: none"> Services
3. Manufacturing	<ul style="list-style-type: none"> Equipment sales New kits and pans 	<ul style="list-style-type: none"> Equipment sales Services
4. Field Support	<ul style="list-style-type: none"> 24/7 site support Spares and RMA 	<ul style="list-style-type: none"> Recurring kit/consumable sales Services
5. Upgrades	<ul style="list-style-type: none"> Upgrade engineering 	<ul style="list-style-type: none"> Equipment sales Services
6. Replacement	<ul style="list-style-type: none"> Identify next-generation solution Start new equipment life cycle 	<ul style="list-style-type: none"> To capture next commercial life cycle

Source: Company, DBS Bank

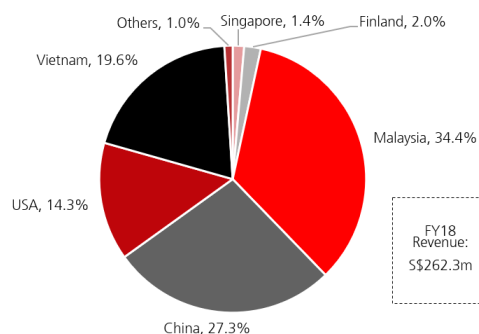
FY18 Revenue by Business Segments



Source: Company, DBS Bank

AEM has four manufacturing plants which are located in Singapore, Malaysia (Penang), China (Suzhou) and Finland (Lieto). Its network of sales and field service offices, associates and distributors allow it to have a global market presence, with Malaysia and China accounting for a total of 61.7% of its revenue in FY18.

FY18 Revenue by Geography



Source: Company, DBS Bank

Management & Strategy

Key Management Team

Name	Background & Experiences
Loke Wai San, 50	<p>Executive Chairman and Director. Mr. Loke Wai San has been the Chairman of AEM since 2011. He is also the founder and CEO of Novo Tellus Capital Partners, a private equity fund adviser. Mr. Loke has a Master’s degree in Business Administration from the University of Chicago and a Bachelor of Science degree in Electrical and Electronics Engineering from Lehigh University.</p> <p>Mr. Loke has over 25 years of experience in global technology management and investment. He has been working with the management team to strengthen AEM’s relationship with its key customer as well as provided leadership for the company’s acquisitions in 2017 and 2018. His previous working experience includes being a Managing Director and head of Baring Asia’s US office and co-head for Southeast Asia from 2000 to 2010; a Vice President at a venture capital fund H&Q Asia Pacific from 1999 to 2000; a Senior Manager at AT Kearney from 1995 to 1999; and an R&D engineer with Motorola from 1991 to 1993.</p>
Chok Yean Hung, 54	<p>Chief Executive Officer. Mr. Chok has been with AEM since 2012. He has a Bachelor of Electrical & Electronics Engineering degree from the National University of Singapore.</p> <p>Mr. Chok has more than 30 years of management and technical experience in the semiconductor industry. His previous working experience includes being part of the founding management team of Ellipsiz Test, EEMS Asia Pte. Ltd, and United Test and Assembly Center Pte. Ltd (UTAC); serving as Senior Vice President of Operations at EEMS, overseeing both the Singapore and Suzhou sites; the Vice President of Test Operation from 1998 to 2004, managing Memory IC and Mix Signal ICs Test’s manufacturing, engineering, and development; a Product and Test Engineer in Texas Instruments (S) Pte. Ltd in 1998 rising to a Product Engineering Manager and Senior Member of Technical Staff.</p>

Source: Company, DBS Bank

Business Strategy

R&D to keep up and grow with key customers in an expanded Total Addressable Market (TAM). Over the last few years, AEM’s key customer has pushed into new markets organically and through acquisitions. In addition, technological advancements have enabled IoT, AI, and autonomous driving, among others, thereby expanding Intel’s TAM. As such, AEM is continuing to invest in R&D to develop customised test handling solutions for its key customers for their wafer, package, panel, and interconnected system level test needs.

Expanding offerings in System Level Test and its value chain. As new technology is being adopted, semiconductor manufacturers have to meet increasingly high demand. System Level Tests, which are more comprehensive, are becoming increasingly required in safety-critical markets such as automotive, industrial, and medical equipment. AEM is seeking to capitalise on this trend by enhancing its capabilities as well as tapping on various areas in the supply chain through M&A.

Singapore Company Guide

Frencken Group Limited

Version 4 | Bloomberg: FRKN SP | Reuters: FREN.SI

Refer to important disclosures at the end of this report

DBS Group Research . Equity

29 Nov 2019

BUY

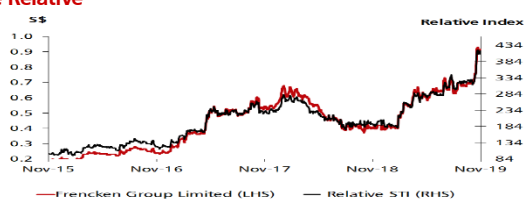
Last Traded Price (28 Nov 2019): S\$0.905 (STI : 3,200.61)

Price Target 12-mth: S\$1.06 (17% upside) (Prev S\$0.95)

Analyst

Lee Keng LING +65 6682 3703 leekeng@db.com

Price Relative



Forecasts and Valuation

FY Dec (S\$m)	2018A	2019F	2020F	2021F
Revenue	626	668	736	799
EBITDA	61.4	72.6	79.3	85.7
Pre-tax Profit	40.2	52.9	57.9	62.6
Net Profit	30.0	41.0	44.9	48.5
Net Pft (Pre Ex.)	33.9	41.0	44.9	48.5
Net Pft Gth (Pre-ex) (%)	47.7	20.7	9.5	8.1
EPS (S cts)	7.12	9.67	10.6	11.5
EPS Pre Ex. (S cts)	8.05	9.67	10.6	11.5
EPS Gth Pre Ex (%)	46	20	10	8
Diluted EPS (S cts)	7.12	9.67	10.6	11.5
Net DPS (S cts)	2.14	2.90	3.18	3.44
BV Per Share (S cts)	62.8	69.3	76.7	84.8
PE (X)	12.7	9.4	8.5	7.9
PE Pre Ex. (X)	11.2	9.4	8.5	7.9
P/Cash Flow (X)	15.2	5.5	8.0	7.0
EV/EBITDA (X)	6.3	4.9	4.4	3.9
Net Div Yield (%)	2.4	3.2	3.5	3.8
P/Book Value (X)	1.4	1.3	1.2	1.1
Net Debt/Equity (X)	0.0	CASH	CASH	CASH
ROAE (%)	11.3	14.0	13.8	13.5
Earnings Rev (%):		0	0	0
Consensus EPS (S cts):		9.3	9.7	10.1
Other Broker Recs:		B: 3	S: 0	H: 1

Source of all data on this page: Company, DBS Bank, Bloomberg Finance L.P

Semiconductor turnaround beneficiary

Benefitting from Semiconductor turnaround; Industrial Automation remains key.

We expect Frencken Group (FRKN) to benefit from the turnaround in the Semiconductor segment given its c.20% revenue exposure. Industrial Automation remains a key division, riding on the optimistic outlook of its key customer. FRKN's strong presence in a wide variety of industries and business segments - Automotive, Analytical & Life Science, Medical, Semiconductor and Industrial & Industrial Automation provides greater resilience and stability.

At 9.4x FY19F and 8.5x FY20F earnings, FRKN is trading at about 30% discount to its peers' average of c.12x price-to-earnings (PE). In our view, this discount is too steep. The stock is supported by a dividend yield of about 3.2%, based on a 30% payout ratio.

Where we differ: We use a lower PE multiple of 10x, which is at a 20% discount to its peers' average given FRKN's smaller scale.

Potential catalysts: 1) Positive outcome from US-China trade negotiations; 2) Better operational efficiency to improve margins

Valuation:

Maintain BUY with higher TP of S\$1.06. Our target price (TP) is raised accordingly to S\$1.06 (Prev S\$0.95), pegged to 10x FY20F PE, (up from 9x in line with the recent re-rating of technology stocks). We retain the 20% discount peg to peers' average given FRKN's smaller scale. Maintain BUY

Key Risks to Our View:

Dependence on global market conditions. FRKN has exposure to customers in the US, European Union (EU) and Asia. A broad global economic slowdown could impact demand and earnings.

At A Glance

Issued Capital (m shrs)	424
Mkt. Cap (S\$m/US\$m)	384 / 281
Major Shareholders (%)	
Thong Low Heang	6.3
Micro Compact Sdn Bhd	6.2
Precico Singapore Pte Ltd	6.2
Free Float (%)	67.6
3m Avg. Daily Val (US\$m)	1.5
GIC Industry : Industrials / Capital Goods	



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Live more, Bank less

Frencken Group Limited

CRITICAL DATA POINTS TO WATCH

Critical Factors

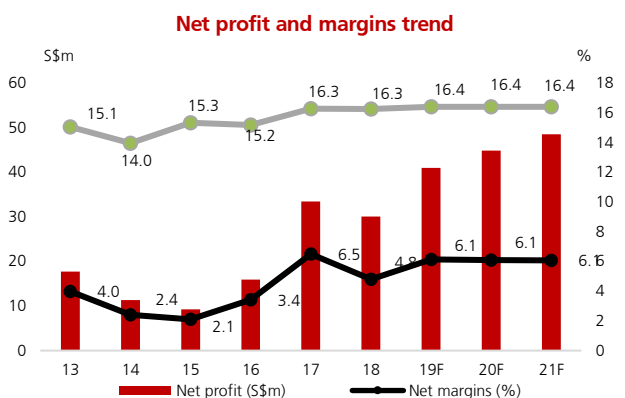
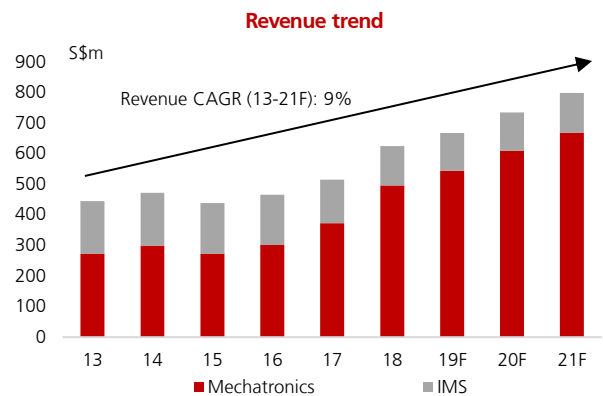
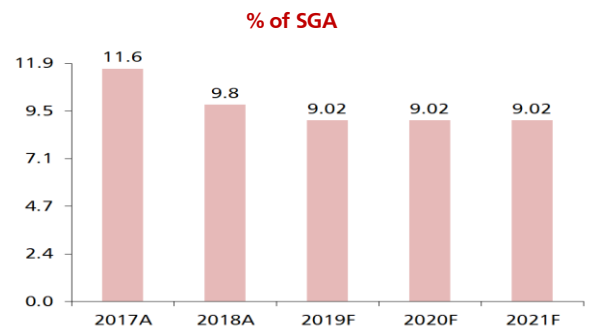
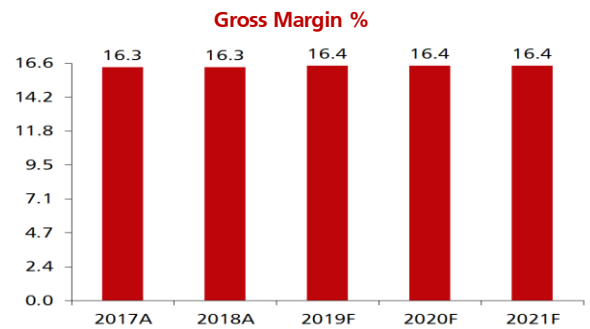
Technology advancements and rising transformation. The accelerating technological advancements and market trends in cloud computing, big data, artificial intelligence (AI), augmented reality (AR), virtual reality (VR), proliferation of connected devices and Internet of Things (IOT), as well as the transformation of the automotive industry and advances in the analysis of biotech and genomics are drivers for FRKN’s business. Among the rising trends are electric cars and connectivity technologies (e.g. smart Wi-Fi systems). FRKN collaborates closely with existing and new customers to develop the next generation of products and technology.

Exposure to high-growth segments. Among FRKN’s five key business segments, we expect the Analytical & Life Sciences, Industrial & Industrial Automotive and Automotive segments to be the main growth drivers in the long term. The proliferation and advancement of technology is giving rise to greater research and analysis, and demand for high-tech products to improve efficiencies and raise productivity. FRKN is in a sweet spot with its exposure to evolving technologies, especially in the Analytical & Life Sciences and Industrial & Industrial Automotive segments.

We turned positive on the semiconductor segment recently. Frencken should benefit as it has c.20% revenue exposure to this segment. SEMI forecasts the equipment market to jump 11.6% in 2020. The recovery is on the strength of memory spending and new projects in China.

Optimisation through leaner organisational structure. The strategic divestment of loss-making wholly-owned subsidiary Precico Group Sdn Bhd (PESB) in FY17 enabled FRKN to unlock the value of this business unit at a profit. In FY15, FRKN took a hit to wind up certain subsidiaries in Malaysia and China.

Operational efficiencies to drive margins. FRKN’s earnings recovered strongly in FY16, after a prolonged period of negative earnings growth from FY11-FY15. During this period, besides challenging market conditions, the group was also hit by impairment losses for subsidiaries and deferred development costs. An optimisation exercise was undertaken and some subsidiaries were wound up for a leaner structure. A sustainable and improvement of its earnings momentum should continue to re-rate the stock.



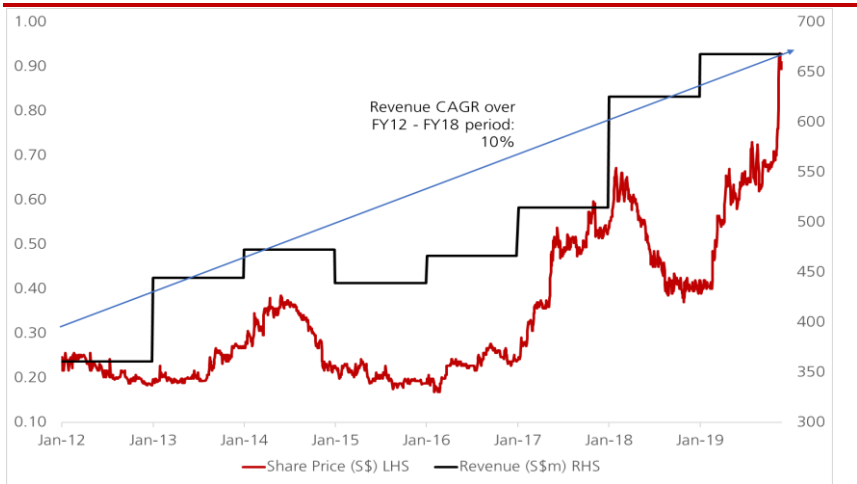
Source: Company, DBS Bank

Frencken Group Limited

Appendix 1: A look at Company's listed history – what drives its share price?

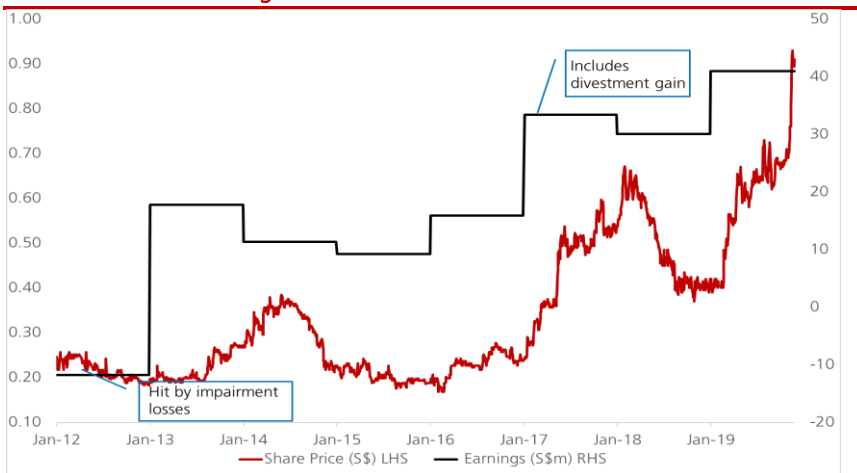
Remarks

Share Price vs Revenue



In the last seven years, FRKN's share price has tracked revenue quite closely, with a correlation of +0.84. The group has grown over the years, via organic and inorganic growth. We expect this uptrend to continue, as the group continues to gain wallet share from its existing customers and build market share through the acquisition of new customers and product segments.

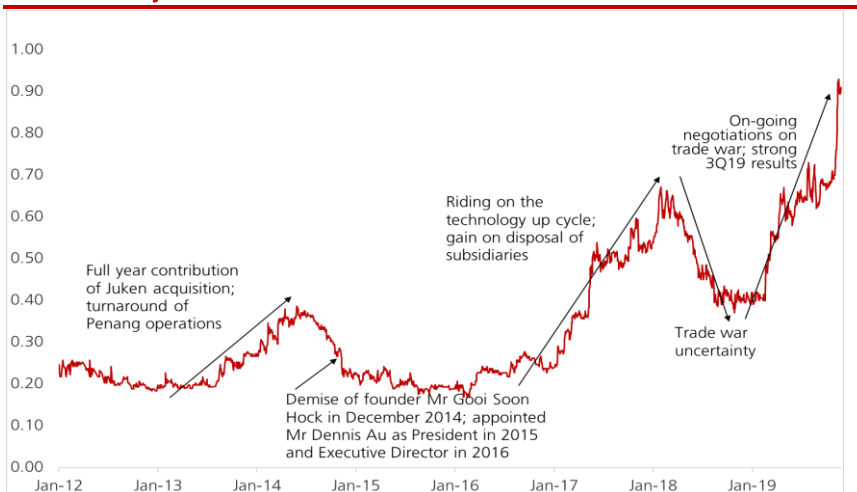
Share Price vs Net Earnings



Net earnings have been relatively more volatile compared to revenue (correlation +0.75), partly affected by impairment charges and gains/losses from disposal of subsidiaries. The group undertook several exercises to restructure/rationalise and build a stronger base.

Overall, we project a FY18-FY21 earnings CAGR of 17%.

Share Price Key Event Chart



Source: Company, DBS Bank

Frencken Group Limited

Balance Sheet:

Return to net cash position expected. The bulk of FRKN's borrowings is in the form of short-term borrowings and forms an integral part of the group's cash management. The borrowings are mainly denominated in Euro (EUR), US Dollar (USD), Singapore Dollar (SGD), Indonesian Rupiah (INR) and Malaysian Ringgit (MYR) at interest rates of 1.36-11.75% (for FY18). We expect the group to return to a net cash position in FY19F, barring any major capital expenditure (capex).

Share Price Drivers:

Revenue and earnings momentum. FRKN's revenue registered a CAGR of 10% in FY12-FY18. Earnings recovered strongly in FY16, after a prolonged period of negative earnings growth in FY11-FY15 due to challenging market conditions. The group was also hit by impairment losses for subsidiaries and deferred development costs. Optimisation exercises were undertaken and some subsidiaries were wound up for a leaner structure. A sustainable and improved earnings momentum should continue to re-rate the stock.

Key Risks:

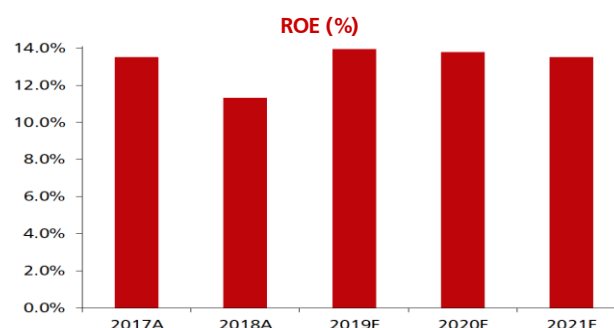
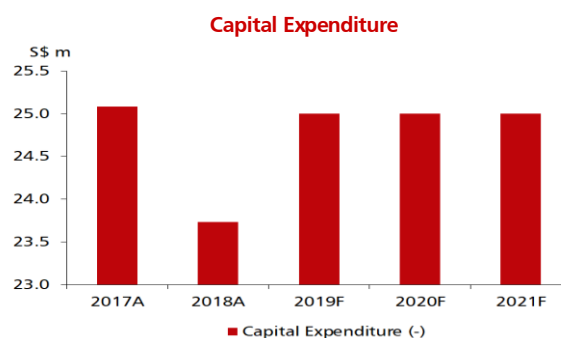
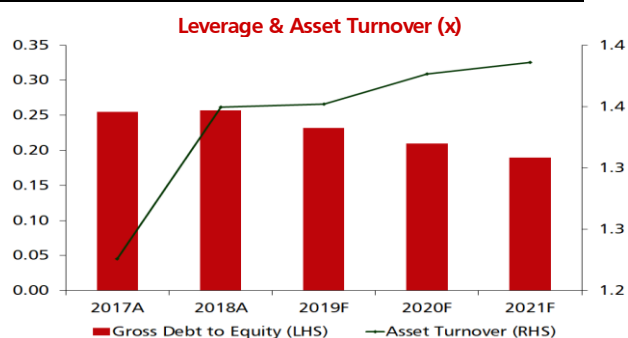
Dependence on global market conditions. FRKN has exposure to customers in the US, EU and Asia. A broad global economic slowdown could have an impact on FRKN's operations due to its vulnerability to business cycles. Political and policy risks could also affect FRKN's business in these regions. A case in point is the ongoing US-China trade war.

Forex exposure. A weakening USD against SGD, Renminbi (RMB) and MYR could impact FRKN's earnings, but should be minimal. Our sensitivity analysis shows that every 5% appreciation of USD against SGD, RMB and MYR will increase FRKN's net profit by 2%.

Vulnerable to industry cycles. Some industries that FRKN is exposed to, like the semiconductor industry, are cyclical in nature. A sudden swing in the cycle could affect FRKN's operations, especially its inventory level and profitability.

Company Background

Frencken Group Limited (FRKN) provides end-to-end solutions across the entire customer value chain. It offers comprehensive original design, original equipment and diversified integrated manufacturing solutions for world-class multinational companies in the automotive, healthcare, industrial, life sciences and semiconductor industries.



Source: Company, DBS Bank

Frencken Group Limited

Key Assumptions

FY Dec	2017A	2018A	2019F	2020F	2021F
Gross Margin %	16.3	16.3	16.4	16.4	16.4
% of SGA	11.6	9.80	9.02	9.02	9.02

Segmental Breakdown

FY Dec	2017A	2018A	2019F	2020F	2021F
Revenues (\$\$m)					
Mechatronics	373	497	545	609	669
IMS	142	129	123	126	130

Total	515	626	668	736	799
Operating profit (EBIT)					
Mechatronics	19.0	30.3	39.7	43.6	48.7
IMS	2.97	1.95	1.93	1.85	1.90

Total	21.9	32.3	41.7	45.4	50.6
Operating profit (EBIT)					
Mechatronics	5.1	6.1	7.3	7.2	7.3
IMS	2.1	1.5	1.6	1.5	1.5

Total	4.3	5.2	6.2	6.2	6.3
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Income Statement (\$\$m)

FY Dec	2017A	2018A	2019F	2020F	2021F
Revenue	515	626	668	736	799
Cost of Goods Sold	(431)	(524)	(558)	(615)	(668)
Gross Profit	83.9	102	110	121	131
Other Opng (Exp)/Inc	(59.9)	(61.3)	(60.2)	(66.4)	(72.1)
Operating Profit	23.9	40.4	49.3	54.3	59.0
Other Non Opg (Exp)/Inc	6.35	4.64	4.64	4.64	4.64
Associates & JV Inc	0.0	0.0	0.0	0.0	0.0
Net Interest (Exp)/Inc	(0.3)	(1.0)	(1.0)	(1.0)	(1.0)
Exceptional Gain/(Loss)	10.5	(3.9)	0.0	0.0	0.0
Pre-tax Profit	40.4	40.2	52.9	57.9	62.6
Tax	(6.6)	(9.8)	(11.6)	(12.7)	(13.8)
Minority Interest	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)
Preference Dividend	0.0	0.0	0.0	0.0	0.0
Net Profit	33.4	30.0	41.0	44.9	48.5
Net Profit before Except.	23.0	33.9	41.0	44.9	48.5
EBITDA	45.2	61.4	72.6	79.3	85.7
Growth					
Revenue Gth (%)	10.4	21.5	6.7	10.1	8.6
EBITDA Gth (%)	19.6	35.9	18.1	9.3	8.0
Opg Profit Gth (%)	52.0	68.8	21.9	10.1	8.6
Net Profit Gth (Pre-ex) (%)	44.5	47.7	20.7	9.5	8.1
Margins & Ratio					
Gross Margins (%)	16.3	16.3	16.4	16.4	16.4
Opg Profit Margin (%)	4.6	6.5	7.4	7.4	7.4
Net Profit Margin (%)	6.5	4.8	6.1	6.1	6.1
ROAE (%)	13.5	11.3	14.0	13.8	13.5
ROA (%)	8.0	6.5	8.3	8.4	8.4
ROCE (%)	7.1	9.6	10.8	10.9	10.9
Div Payout Ratio (%)	29.8	30.0	30.0	30.0	30.0
Net Interest Cover (x)	70.8	40.5	49.4	54.4	59.1

Gains from disposal of subsidiary

Impairment losses for goodwill attributable to its plant in Netherlands

Source: Company, DBS Bank

Frencken Group Limited
Quarterly / Interim Income Statement (\$\$m)

FY Dec	3Q2018	4Q2018	1Q2019	2Q2019	3Q2019
Revenue	164	176	159	164	170
Cost of Goods Sold	(139)	(146)	(134)	(136)	(143)
Gross Profit	25.2	29.3	25.1	28.0	27.0
Other Oper. (Exp)/Inc	(13.1)	(14.7)	(13.5)	(13.5)	(12.6)
Operating Profit	12.1	14.6	11.6	14.5	14.4
Other Non Opg (Exp)/Inc	0.0	0.0	0.0	0.0	0.0
Associates & JV Inc	0.0	0.0	0.0	0.0	0.0
Net Interest (Exp)/Inc	(0.2)	(0.4)	(0.4)	(0.4)	(0.3)
Exceptional Gain/(Loss)	(4.0)	0.14	0.0	0.0	0.0
Pre-tax Profit	7.83	14.4	11.2	14.1	14.1
Tax	(2.4)	(3.2)	(2.6)	(2.9)	(2.6)
Minority Interest	(0.1)	(0.1)	0.0	(0.1)	(0.1)
Net Profit	5.26	11.0	8.60	11.1	11.4
Net profit bef Except.	9.30	10.9	8.60	11.1	11.4
EBITDA	16.4	18.5	16.9	19.9	19.5

Growth

Revenue Gth (%)	11.2	7.2	(9.5)	3.3	3.5
EBITDA Gth (%)	18.8	13.2	(9.0)	17.8	(1.6)
Opg Profit Gth (%)	26.7	21.0	(20.5)	24.6	(0.7)
Net Profit Gth (Pre-ex) (%)	32.9	16.9	(20.9)	29.2	2.9

Margins

Gross Margins (%)	15.3	16.7	15.8	17.0	15.9
Opg Profit Margins (%)	7.4	8.3	7.3	8.8	8.4
Net Profit Margins (%)	3.2	6.3	5.4	6.8	6.7

Balance Sheet (\$\$m)

FY Dec	2017A	2018A	2019F	2020F	2021F
Net Fixed Assets	93.9	97.4	105	111	115
Invts in Associates & JVs	0.0	0.0	0.0	0.0	0.0
Other LT Assets	32.1	26.9	32.8	32.8	32.7
Cash & ST Invts	68.2	67.1	99.1	109	124
Inventory	112	145	130	143	156
Debtors	100	116	115	127	138
Other Current Assets	13.5	11.9	11.9	11.9	11.9
Total Assets	420	464	494	534	577
ST Debt	61.7	67.5	67.5	67.5	67.5
Creditor	61.9	79.2	73.4	80.9	87.8
Other Current Liab	39.9	42.8	49.9	51.0	52.0
LT Debt	1.87	1.21	1.21	1.21	1.21
Other LT Liabilities	5.25	5.47	5.47	5.47	5.47
Shareholder's Equity	247	265	294	325	359
Minority Interests	2.34	2.63	2.95	3.27	3.58
Total Cap. & Liab.	420	464	494	534	577
Non-Cash Wkg. Capital	124	150	134	150	166
Net Cash/(Debt)	4.55	(1.6)	30.4	40.0	55.0
Debtors Turn (avg days)	71.1	67.6	63.0	63.0	63.0
Creditors Turn (avg days)	54.3	56.9	49.7	49.6	49.6
Inventory Turn (avg days)	98.3	104.0	87.9	87.9	87.9
Asset Turnover (x)	1.2	1.3	1.4	1.4	1.4
Current Ratio (x)	1.8	1.8	1.9	2.0	2.1
Quick Ratio (x)	1.0	1.0	1.1	1.2	1.3
Net Debt/Equity (X)	CASH	0.0	CASH	CASH	CASH
Net Debt/Equity ex MI (X)	CASH	0.0	CASH	CASH	CASH
Capex to Debt (%)	39.4	34.5	36.4	36.4	36.4

Source: Company, DBS Bank

Frencken Group Limited

Cash Flow Statement (\$m)

FY Dec	2017A	2018A	2019F	2020F	2021F
Pre-Tax Profit	40.4	40.2	52.9	57.9	62.6
Dep. & Amort.	14.9	16.4	18.6	20.4	22.1
Tax Paid	(6.6)	(9.8)	(11.6)	(12.7)	(13.8)
Assoc. & JV Inc/(loss)	0.0	0.0	0.0	0.0	0.0
Chg in Wkg.Cap.	(5.6)	(26.8)	9.35	(17.4)	(16.4)
Other Operating CF	(8.3)	5.10	0.0	0.0	0.0
Net Operating CF	34.9	25.1	69.3	48.2	54.6
Capital Exp.(net)	(25.1)	(23.7)	(25.0)	(25.0)	(25.0)
Other Invt.(net)	0.0	0.0	0.0	0.0	0.0
Invt in Assoc. & JV	38.6	0.0	0.0	0.0	0.0
Div from Assoc & JV	0.0	0.0	0.0	0.0	0.0
Other Investing CF	0.70	0.56	0.0	0.0	0.0
Net Investing CF	14.2	(23.2)	(25.0)	(25.0)	(25.0)
Div Paid	(5.0)	(10.1)	(12.3)	(13.5)	(14.6)
Chg in Gross Debt	9.83	7.33	0.0	0.0	0.0
Capital Issues	1.91	0.95	0.0	0.0	0.0
Other Financing CF	0.0	0.0	0.0	0.0	0.0
Net Financing CF	6.77	(1.8)	(12.3)	(13.5)	(14.6)
Currency Adjustments	(1.3)	0.34	0.0	0.0	0.0
Chg in Cash	54.6	0.46	32.0	9.69	15.0
Opg CFPS (S cts)	9.72	12.3	14.1	15.5	16.7
Free CFPS (S cts)	2.35	0.32	10.5	5.47	6.98

Source: Company, DBS Bank

Target Price & Ratings History



S.No.	Date of Report	Closing Price	12-mth Target Price	Rating
1:	15 Apr 19	0.62	0.75	BUY
2:	10 May 19	0.62	0.75	BUY
3:	13 Aug 19	0.65	0.80	BUY
4:	07 Nov 19	0.74	0.95	BUY

Note: Share price and Target price are adjusted for corporate actions.

Source: DBS Bank

Analyst: Lee Keng LING

Singapore Company Guide

UMS Holdings

Version 19 | Bloomberg: UMSH SP | Reuters: UMSH.SI

Refer to important disclosures at the end of this report

DBS Group Research . Equity

29 Nov 2019

BUY

Last Traded Price (28 Nov 2019): S\$0.89 (STI : 3,200.61)

Price Target 12-mth: S\$1.08 (21% upside) (Prev S\$1.00)

Analyst

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Price Relative



Forecasts and Valuation

FY Dec (S\$m)	2018A	2019F	2020F	2021F
Revenue	128	129	148	163
EBITDA	51.6	42.9	49.7	56.1
Pre-tax Profit	45.5	37.2	44.4	50.9
Net Profit	43.1	34.7	41.3	47.3
Net Pft (Pre Ex.)	43.1	34.7	41.3	47.3
Net Pft Gth (Pre-ex) (%)	(17.2)	(19.5)	19.1	14.6
EPS (S cts)	8.03	6.47	7.70	8.82
EPS Pre Ex. (S cts)	8.03	6.47	7.70	8.82
EPS Gth Pre Ex (%)	(17)	(19)	19	15
Diluted EPS (S cts)	8.03	6.47	7.70	8.82
Net DPS (S cts)	4.50	3.50	3.50	3.50
BV Per Share (S cts)	42.6	45.6	49.8	55.1
PE (X)	11.1	13.8	11.6	10.1
PE Pre Ex. (X)	11.1	13.8	11.6	10.1
P/Cash Flow (X)	12.3	8.5	12.7	10.4
EV/EBITDA (X)	9.3	10.7	8.9	7.5
Net Div Yield (%)	5.1	3.9	3.9	3.9
P/Book Value (X)	2.1	2.0	1.8	1.6
Net Debt/Equity (X)	0.0	CASH	CASH	CASH
ROAE (%)	19.4	14.7	16.2	16.8
Earnings Rev (%)		0	0	0
Consensus EPS (S cts)		6.5	7.4	8.2
Other Broker Recs:		B: 1	S: 0	H: 1

Source of all data on this page: Company, DBS Bank, Bloomberg Finance L.P

Charging higher

Remain positive on semiconductor; maintain BUY on UMS with a higher TP of S\$1.08, on re-rating of peers. UMS is now witnessing signs of an upturn in the overall semiconductor industry as demand is picking up with chip inventories easing and new technological disruptors driving the growth of new products and capabilities. The successfully renewed integrated system business contract with its key customer, AMAT, for another three years helps to strengthen earnings visibility.

We remain positive on the turnaround for the semiconductor segment and expect the sales momentum to continue. Maintain BUY with a higher TP of S\$1.08, pegged to smaller peers' average of 14x PE (Prev 13x), in line of re-rating of peers.

Where we differ: We are more positive on the semiconductor outlook and expect UMS to trade in line with its smaller peers' PE of 14x on FY20F earnings.

Potential catalysts: Stronger recovery in semiconductor equipment sales, client diversification, earnings-accretive M&As.

Valuation:

Maintain BUY with higher TP of S\$1.08 pegged to 14x FY20F PE. We expect the growth momentum for UMS to continue. Our target price is raised to S\$1.08 (previously S\$1.00), pegged to smaller peers' average of 14x FY20F earnings.

Key Risks to Our View:

Key client risk. Historically, c.90% of UMS's revenues on average were attributed to Applied Materials (AMAT). Disruptions to the relationship or weakness in AMAT's end-demand could significantly weigh on UMS's performance.

At A Glance

Issued Capital (m shrs)	536
Mkt. Cap (S\$m/US\$m)	477 / 350
Major Shareholders (%)	
Andy Luong	20.6
Free Float (%)	79.4
3m Avg. Daily Val (US\$m)	2.8
GIC Industry : Information Technology / Semiconductors &	



UMS Holdings

CRITICAL DATA POINTS TO WATCH

Critical Factors

Positive on semiconductor outlook

The semiconductor market appears to be bottoming out, with the overall oversupply in the memory market expected to ease. SEMI expects recovery in the semiconductor industry in 2020. According to SEMI, global sales of semiconductor manufacturing equipment by original equipment manufacturers (OEMs) are projected to decline by 18.4% in 2019 from last year's historic high. Growth in equipment sales is expected to resume in 2020, with an 11.6% y-o-y jump on the strength of memory spending and new projects in China, while equipment sales in Japan should surge 46.4%.

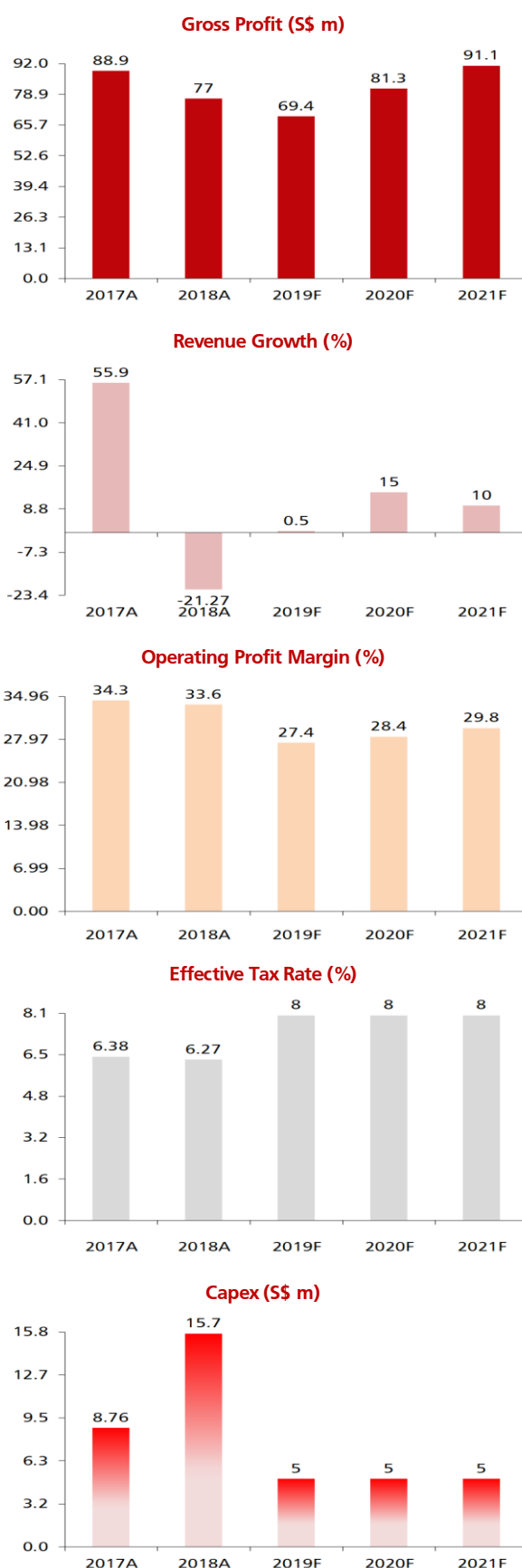
UMS is witnessing signs of an upturn in the overall semiconductor industry as demand is picking up with chip inventories easing and new technological disruptors driving the growth of new products and capabilities.

Leveraging on key customer Applied Materials (AMAT). As a long-standing manufacturing partner to AMAT in the manufacture of components for various semiconductor equipment, and as the main manufacturer and sub-assembler of AMAT's flagship Endura deposition system, UMS naturally depends on AMAT's performance.

Based on consensus numbers, AMAT is projected to register a 15% y-o-y drop in earnings for FY October 2019 (which is an improvement from the c.40% drop projection in August 2019) and to rebound 9% in FY20F followed by 18% in FY21F.

Expect lower dividends, in favour of M&A activities. DPS had fallen to 4.5 Scts in FY18, from an average of 6 Scts paid over the last five years. Going forward, we would not rule out the possibility of a lower dividend payout, as the group preserves cash for M&A opportunities. We are projecting a 3.5-Sct DPS for FY19F-21F.

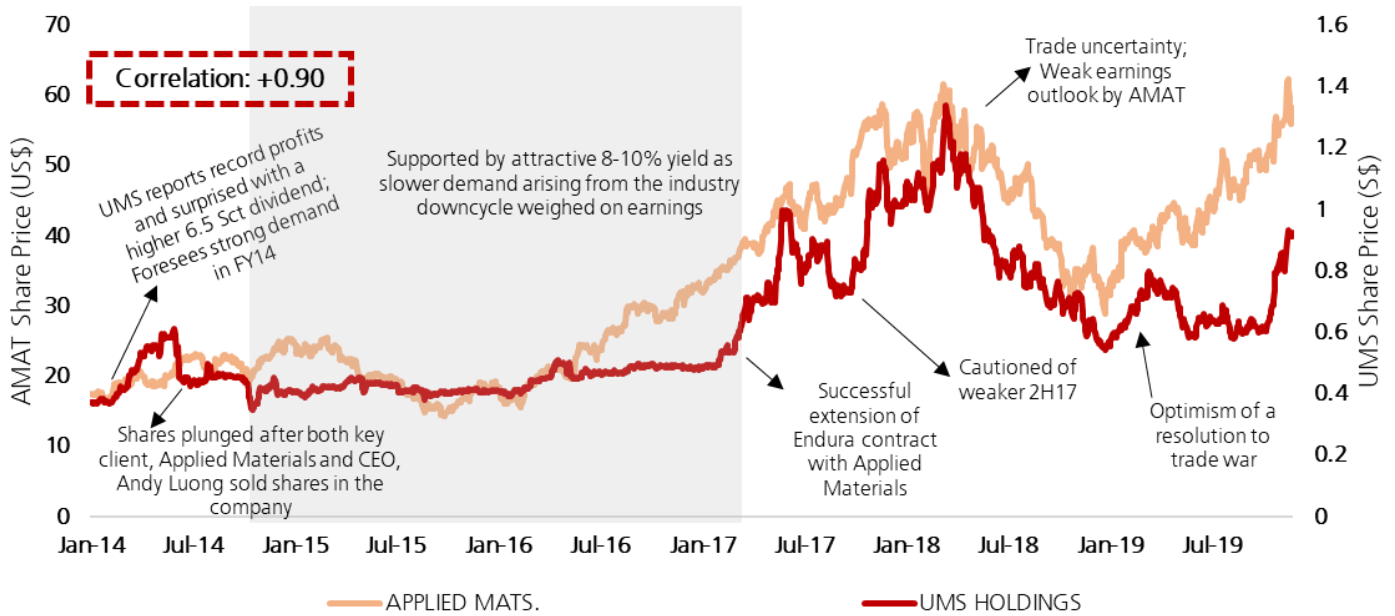
Diversification into other businesses could also bear fruit in the longer term. UMS recently increased its stake in JEP Holding, which is in the precision engineering business, to c. 40%. The group has acquired a 70% stake in Starke Singapore, a non-ferrous metal alloy specialist. In 2017, UMS acquired a 51% stake in water and chemical engineering solutions company, Kalf Engineering. And in 2016, the group diversified into aerospace components via a 10% stake in All Star Fortress Sdn Bhd. These investments should provide the group with alternative growth opportunities in the medium-to-long term and provide diversification away from the cyclical semiconductor business.



Source: Company, DBS Bank

UMS Holdings

Appendix 1: A look at Company's listed history – what drives its share price?



Source: Bloomberg Finance L.P., DBS Bank

UMS Holdings

Balance Sheet:

Healthy cash level. UMS invested S\$6.9m to raise its equity stake in JEP Holdings from 29% to 39% in 2Q19. Even after making an additional investment in JEP and paying dividends of S\$10.7m, the group's net cash rose to S\$7.6m as of end-3Q19, reversing from a net debt of S\$1.4m as at end-4Q18.

Share Price Drivers:

A sustainable recovery in semiconductor industry. Industry bodies like SEMI and Worldwide Semiconductor Trade Statistics (WSTS) are forecasting a return to growth for the semiconductor industry in 2020. UMS is witnessing signs of an upturn in the overall semiconductor industry. A sustainable recovery should drive earnings, and thus share price higher.

M&A opportunities. UMS continues to be on the lookout for diversification opportunities (outside of the semiconductor industry) with good long-term growth potential. New avenues of growth outside the semiconductor space could help drive re-rating of its share price.

Potential takeover target. UMS has only one large shareholder, with a 20% stake. With its entrenched relationship with AMAT, consistently strong cash flows and net cash position, we see UMS as an attractive takeover target.

Key Risks:

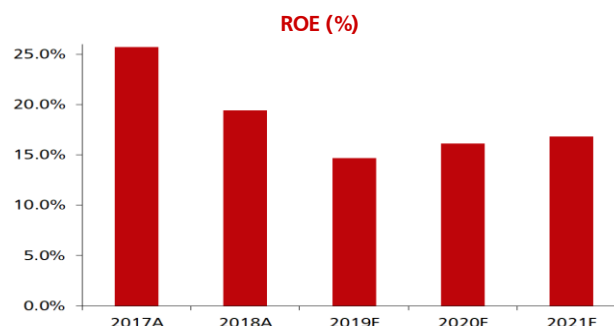
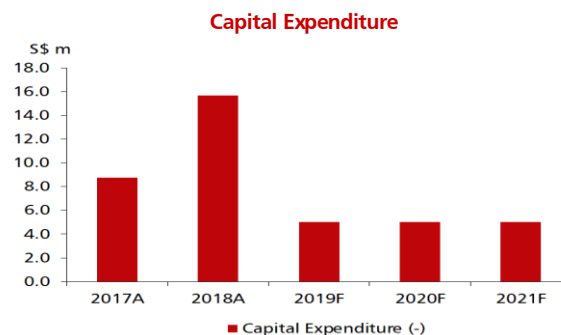
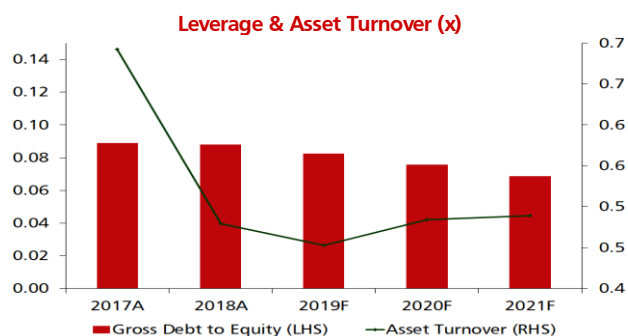
Key client risk – AMAT. UMS's performance is closely tied to that of AMAT. About 90% of UMS's revenues are attributable to AMAT.

Disruptions to the relationship (i.e. loss of market share) or weakness in AMAT's end-demand could significantly weigh on UMS's performance.

Underlying demand for semiconductor manufacturing equipment. As demand for semiconductor manufacturing equipment is largely driven by capex cycles of chipmakers and foundries, an extension of the life cycle of existing systems or a slowdown in the global economy could result in deferments in their planned capital investments.

Company Background

UMS Holdings (UMSH SP) is an integrated OEM for front-end semiconductor equipment manufacturing, providing both component manufacturing and sub-assembly services, primarily to key client, Applied Materials (AMAT).



Source: Company, DBS Bank

UMS Holdings

Key Assumptions

FY Dec	2017A	2018A	2019F	2020F	2021F
Gross Profit (\$\$ m)	88.9	77.0	69.4	81.3	91.1
Revenue Growth (%)	55.9	(21.3)	0.50	15.0	10.0
Operating Profit Margin	34.3	33.6	27.4	28.4	29.8
Effective Tax Rate (%)	6.38	6.27	8.00	8.00	8.00
Capex (\$\$ m)	8.76	15.7	5.00	5.00	5.00

Income Statement (\$\$m)

FY Dec	2017A	2018A	2019F	2020F	2021F
Revenue	162	128	129	148	163
Cost of Goods Sold	(73.6)	(50.9)	(59.1)	(66.5)	(71.6)
Gross Profit	88.9	77.0	69.4	81.3	91.1
Other Opng (Exp)/Inc	(33.2)	(34.0)	(34.2)	(39.3)	(42.6)
Operating Profit	55.7	43.0	35.2	42.0	48.5
Other Non Opg (Exp)/Inc	(0.4)	2.36	0.0	0.0	0.0
Associates & JV Inc	0.0	0.53	2.00	2.00	2.00
Net Interest (Exp)/Inc	0.0	(0.4)	0.0	0.43	0.48
Exceptional Gain/(Loss)	0.0	0.0	0.0	0.0	0.0
Pre-tax Profit	55.2	45.5	37.2	44.4	50.9
Tax	(3.5)	(2.9)	(3.0)	(3.6)	(4.1)
Minority Interest	0.32	0.42	0.43	0.44	0.46
Preference Dividend	0.0	0.0	0.0	0.0	0.0
Net Profit	52.0	43.1	34.7	41.3	47.3
Net Profit before Except.	52.0	43.1	34.7	41.3	47.3
EBITDA	59.6	51.6	42.9	49.7	56.1
Growth					
Revenue Gth (%)	55.9	(21.3)	0.5	15.0	10.0
EBITDA Gth (%)	98.4	(13.4)	(16.8)	15.8	13.0
Opg Profit Gth (%)	89.7	(22.7)	(18.1)	19.2	15.4
Net Profit Gth (Pre-ex) (%)	130.3	(17.2)	(19.5)	19.1	14.6
Margins & Ratio					
Gross Margins (%)	54.7	60.2	54.0	55.0	56.0
Opg Profit Margin (%)	34.3	33.6	27.4	28.4	29.8
Net Profit Margin (%)	32.0	33.7	27.0	27.9	29.1
ROAE (%)	25.7	19.4	14.7	16.2	16.8
ROA (%)	22.2	16.1	12.2	13.5	14.2
ROCE (%)	24.2	17.2	13.1	14.7	15.5
Div Payout Ratio (%)	57.7	56.0	54.1	45.4	39.7
Net Interest Cover (x)	NM	NM	NM	NM	NM

Source: Company, DBS Bank

UMS Holdings

Quarterly / Interim Income Statement (\$m)

FY Dec	3Q2018	4Q2018	1Q2019	2Q2019	3Q2019
Revenue	29.3	25.9	28.6	30.0	32.9
Cost of Goods Sold	(12.1)	(10.1)	(13.4)	(14.1)	(14.9)
Gross Profit	17.2	15.8	15.2	15.9	18.1
Other Oper. (Exp)/Inc	(9.3)	(8.3)	(8.1)	(7.9)	(8.9)
Operating Profit	7.88	7.46	7.06	7.98	9.18
Other Non Opg (Exp)/Inc	0.68	1.33	0.01	0.0	0.24
Associates & JV Inc	0.36	0.24	0.46	0.83	0.65
Net Interest (Exp)/Inc	(0.1)	(0.2)	(0.2)	(0.2)	(0.2)
Exceptional Gain/(Loss)	0.0	0.0	0.0	0.0	0.0
Pre-tax Profit	8.83	8.87	7.37	8.57	9.89
Tax	(1.1)	0.41	(0.6)	(0.6)	(0.8)
Minority Interest	(0.1)	0.31	0.23	0.15	0.05
Net Profit	7.59	9.59	7.05	8.09	9.18
Net profit bef Except.	7.59	9.59	7.05	8.09	9.18
EBITDA	10.5	10.7	9.22	10.5	11.8

Growth

Revenue Gth (%)	(17.0)	(11.5)	10.4	4.8	9.8
EBITDA Gth (%)	(38.4)	2.5	(14.1)	13.9	12.4
Opg Profit Gth (%)	(45.3)	(5.4)	(5.3)	13.0	15.0
Net Profit Gth (Pre-ex) (%)	(47.7)	26.3	(26.5)	14.7	13.4

Margins

Gross Margins (%)	58.7	60.9	53.2	53.1	54.9
Opg Profit Margins (%)	26.9	28.8	24.7	26.6	27.9
Net Profit Margins (%)	25.9	37.0	24.6	27.0	27.9

Balance Sheet (\$m)

FY Dec	2017A	2018A	2019F	2020F	2021F
Net Fixed Assets	38.8	53.4	52.7	52.0	51.4
Invts in Associates & JVs	0.0	29.5	41.5	43.5	45.5
Other LT Assets	87.7	87.6	87.6	87.6	87.6
Cash & ST Invts	59.6	18.9	41.0	55.0	76.9
Inventory	49.6	70.4	45.4	51.0	54.9
Debtors	23.4	15.1	24.7	28.4	31.2
Other Current Assets	0.0	0.0	0.0	0.0	0.0
Total Assets	259	275	293	318	348
ST Debt	19.0	20.3	20.3	20.3	20.3
Creditor	18.1	14.1	15.9	17.9	19.2
Other Current Liab	3.29	3.72	4.38	4.96	5.48
LT Debt	0.0	0.0	0.0	0.0	0.0
Other LT Liabilities	4.99	6.43	6.43	6.43	6.43
Shareholder's Equity	215	229	244	267	296
Minority Interests	(1.3)	1.91	1.48	1.04	0.58
Total Cap. & Liab.	259	275	293	318	348
Non-Cash Wkg. Capital	51.7	67.7	49.8	56.6	61.4
Net Cash/(Debt)	40.6	(1.4)	20.8	34.7	56.7
Debtors Turn (avg days)	49.8	55.0	56.5	65.4	66.8
Creditors Turn (avg days)	91.3	129.9	102.4	101.2	102.7
Inventory Turn (avg days)	214.4	484.3	395.2	289.1	293.4
Asset Turnover (x)	0.7	0.5	0.5	0.5	0.5
Current Ratio (x)	3.3	2.7	2.7	3.1	3.6
Quick Ratio (x)	2.1	0.9	1.6	1.9	2.4
Net Debt/Equity (X)	CASH	0.0	CASH	CASH	CASH
Net Debt/Equity ex MI (X)	CASH	0.0	CASH	CASH	CASH
Capex to Debt (%)	46.1	77.2	24.6	24.6	24.6
Z-Score (X)	9.0	8.5	9.0	8.9	8.8

Source: Company, DBS Bank

UMS Holdings

Cash Flow Statement (S\$m)

FY Dec	2017A	2018A	2019F	2020F	2021F
Pre-Tax Profit	55.2	45.5	37.2	44.4	50.9
Dep. & Amort.	4.32	5.67	5.67	5.67	5.67
Tax Paid	(2.1)	(3.6)	(2.3)	(3.0)	(3.6)
Assoc. & JV Inc/(loss)	0.04	(0.5)	(2.0)	(2.0)	(2.0)
Chg in Wkg.Cap.	(18.4)	(7.5)	17.3	(7.4)	(5.3)
Other Operating CF	0.02	(1.0)	0.0	0.0	0.0
Net Operating CF	39.2	38.7	55.9	37.7	45.7
Capital Exp.(net)	(8.8)	(15.7)	(5.0)	(5.0)	(5.0)
Other Invt.(net)	0.0	0.0	0.0	0.0	0.0
Invt in Assoc. & JV	(0.1)	(33.4)	(10.0)	0.0	0.0
Div from Assoc & JV	0.0	0.0	0.0	0.0	0.0
Other Investing CF	(2.1)	0.21	0.0	0.0	0.0
Net Investing CF	(11.0)	(48.8)	(15.0)	(5.0)	(5.0)
Div Paid	(26.8)	(29.5)	(18.8)	(18.8)	(18.8)
Chg in Gross Debt	18.8	(0.3)	0.0	0.0	0.0
Capital Issues	0.0	0.0	0.0	0.0	0.0
Other Financing CF	(0.4)	(0.6)	0.0	0.0	0.0
Net Financing CF	(8.5)	(30.5)	(18.8)	(18.8)	(18.8)
Currency Adjustments	(2.8)	0.0	0.0	0.0	0.0
Chg in Cash	17.0	(40.6)	22.1	14.0	21.9
Opg CFPS (S cts)	10.7	8.60	7.19	8.41	9.52
Free CFPS (S cts)	5.67	4.29	9.49	6.10	7.59

Source: Company, DBS Bank

Target Price & Ratings History



S. No.	Date of Report	Closing Price	12-mth Target Price	Rating
1:	26 Feb 19	0.73	0.55	FULLY VALUED
2:	14 May 19	0.65	0.55	FULLY VALUED
3:	16 May 19	0.63	0.45	FULLY VALUED
4:	16 Aug 19	0.60	0.49	FULLY VALUED
5:	24 Oct 19	0.74	0.87	BUY
6:	13 Nov 19	0.86	1.00	BUY

Note: Share price and Target price are adjusted for corporate actions.

Source: DBS Bank

Analyst: Lee Keng LING

Singapore Equity Explorer

Avi-Tech Electronics Ltd

Bloomberg: AVIT SP | Reuters: AVTH.SI

Refer to important disclosures at the end of this report

DBS Group Research . Equity

29 Nov 2019

NOT RATED S\$0.36 STI : 3,200.61

Closing price as of 28 Nov 2019

Return *: 1

Risk: Moderate

Potential Target 12-mth*: S\$ 0.47 (31% upside)

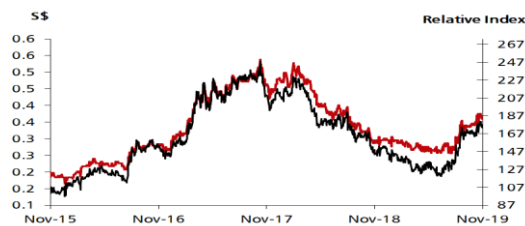
Analyst

Lee Keng LING +65 6682 3703

leekeng@db.com

Singapore Research Team

equityresearch@db.com..

Price Relative**Forecasts and Valuation**

FY Jun (S\$m)	2018A	2019A	2020F	2021F
Revenue	35.7	33.6	33.6	35.6
EBITDA	6.45	6.86	7.88	8.49
Pre-tax Profit	5.70	5.72	7.09	7.64
Net Profit	4.86	4.65	5.88	6.34
Net Pft (Pre Ex.)	4.86	5.02	5.88	6.34
EPS (S cts)	2.84	2.72	3.44	3.71
EPS Pre Ex. (S cts)	2.84	2.94	3.44	3.71
EPS Gth (%)	(31)	(4)	27	8
EPS Gth Pre Ex (%)	(30)	3	17	8
Diluted EPS (S cts)	2.84	2.72	3.44	3.71
Net DPS (S cts)	3.10	3.10	1.03	1.11
BV Per Share (S cts)	28.4	29.0	31.4	34.0
PE (X)	12.8	13.4	10.6	9.8
PE Pre Ex. (X)	12.8	12.4	10.6	9.8
P/Cash Flow (X)	8.3	10.3	8.3	9.3
EV/EBITDA (X)	4.6	4.1	3.0	2.4
Net Div Yield (%)	8.5	8.5	2.8	3.0
P/Book Value (X)	1.3	1.3	1.2	1.1
Net Debt/Equity (X)	CASH	CASH	CASH	CASH
ROAE (%)	10.0	9.5	11.4	11.3

Consensus EPS (S cts):

5.0

Other Broker Recs:

B: 1 S: 0 H: 0

GIC Industry : Information Technology

GIC Sector: Semiconductors & Semiconductor Equipment

Principal Business: Avi-Tech Electronics Limited is a total solutions provider for burn-in services, manufacturing and PCBA services, and engineering services for the semiconductor, electronics, and life sciences industries

Source of all data on this page: Company, DBS Bank, Bloomberg Finance L.P.

*This Equity Explorer report represents a preliminary assessment of the subject company, and does not represent initiation into DBSV's coverage universe. As such DBSV does not commit to regular updates on an ongoing basis. The rating system is distinct from stocks in our regular coverage universe and is explained further on the back page of this report.

An Avi(d) believer

- Well positioned to benefit from the structural change in the semiconductor automotive industry
- Key customers are major players in their respective industries
- Strong cash flows; no debt; healthy cash levels
- Fair value of S\$0.47 based on FY20F 2-year average PE of 13.5x

The Business

Semiconductor solutions provider. Avi-Tech provides burn-in tests and burn-in boards, printed circuit board assembly services, and engineering services for semiconductor equipment. Its customers operate in the semiconductor, electronics, and life science industries.

Structural changes in the automotive industry to drive demand for semiconductors. Smart automotive will require more semiconductor chips to be used in navigation control, advanced driver assistance systems, autonomous vehicles, and collision detection systems. In addition, electric vehicles will require c.2x more semiconductor value than the traditional internal combustion engine vehicle.

Key customers are major players in their respective space. We believe that two of its key customers' automotive semiconductor growth has outpaced the industry's.

The Stock

Target price of S\$0.47 based on FY20F PE of 13.5x. Valuation multiple is pegged to its 2-year average forward PE. Its currently trading at 10.6x FY20F PE which is at -0.4SD relative to its 2-year mean and we believe an uptrend in the semiconductor industry justifies an upward re-rating of its valuation multiple.

Potential catalysts: Uptick in global automotive sales, strong orders from key customers.

Key risks: Escalation or prolonging of key geopolitical events (US-China trade war, Japan-Korea trade feud, and the Hong Kong protests); downturn in semiconductor cycle.

At A Glance

Issued Capital (m shrs)	171
Mkt. Cap (S\$m/US\$m)	61 / 46
Major Shareholders (%)	
Lim Eng Hong	35.9
Loh Zee Lan Nancy	6.0
Free Float (%)	58.1
3m Avg. Daily Val (US\$m)	0.04



REVENUE DRIVERS

Automotive semiconductor sales. Part of Avi-Tech's business includes the provision of burn-in test services for microprocessors and automotive products, among other semiconductor products. More than 50% of Avi-Tech's revenue is derived from the automotive semiconductor industry. From FY16-FY19, total automotive semiconductor sales grew from US\$31bn to US\$39bn, at a CAGR of 7.9%. During the same period, Avi-Tech's revenue from its Burn-In Services and Manufacturing and PCBA Services grew from S\$22.3m to S\$29.4m, at a slightly higher CAGR of 9.0%.

Major customers' automotive semiconductor sales. In FY19, 55.5% of Avi-Tech's revenue was derived from two of its major customers, with an equal split. Furthermore, a significant portion of the company's revenue is derived from the automotive semiconductor industry. The main driver behind the higher-than-industry growth rate was due to its main customers' higher growth rates. From FY16-FY19, both customers' automotive sales grew at a CAGR of 9.0% and 10.8% respectively, beating the industry CAGR of 7.9%.

Semiconductor equipment billings. More than 90% of Avi-Tech's business involves providing semiconductor chip-testing services to its customers. As such, the value of semiconductor chips produced (or billed) translates into revenue for the Group. Avi-Tech's revenue lags the semiconductor billings by approximately one quarter.

COST STRUCTURE

Raw materials account for c.40-50% of revenue. Avi-Tech includes other overheads such as salary and depreciation in its cost of sales. Its total cost of sales is equivalent to c.65-75% of revenue. However, the main raw materials used in the manufacturing of printed circuit boards (PCBs) are copper, substrate and solder, and they account for the largest percentage of revenue – 41.1% of FY19's revenue.

Employees' salaries account for c.20-30% of revenue. Avi-Tech's second largest cost is employees' salaries. The wage split between its services and administrative expenses are approximately 70-30, accounting for 19.5% and 7.8% of FY19 revenue respectively.

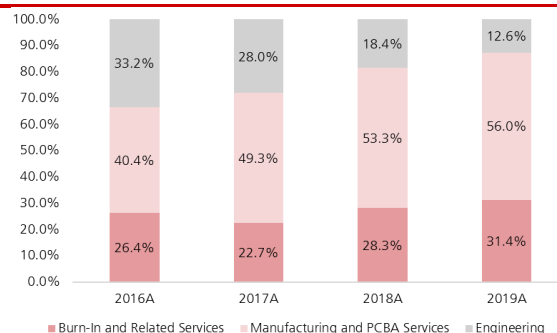
FINANCIALS

Zero borrowings, strong cash flows, healthy cash levels. Since FY18, Avi-Tech has been relying on its strong cash flows to fund its operations. It has no borrowings and has maintained healthy cash levels. As at 1Q20, it had cash and cash equivalents of S\$6m.

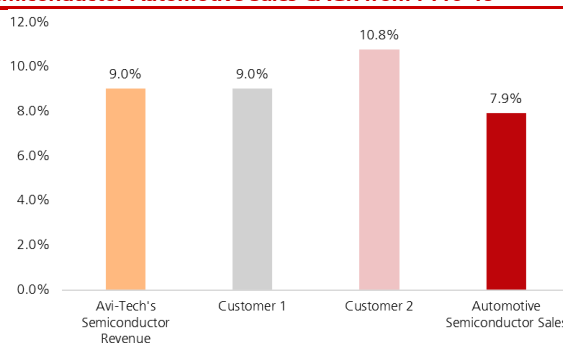
KEY OPERATING ASSETS

Headquarters and production facility in Singapore. Avi-Tech's headquarters and production facility are located in Singapore. The company supports its global customers in Malaysia, Thailand, the Philippines, Taiwan, China, Europe and the US through global branches.

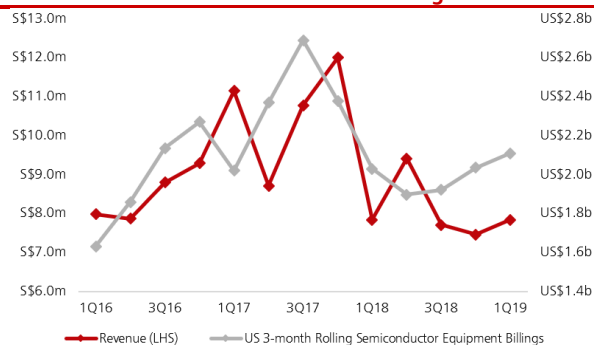
Revenue Contribution



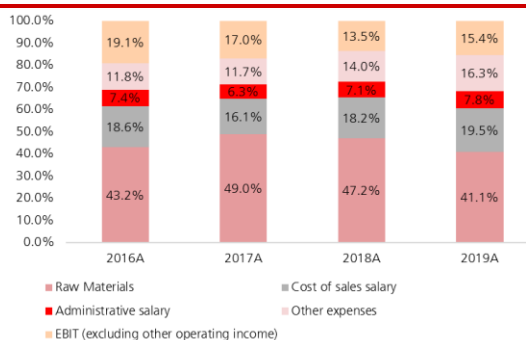
Semiconductor Automotive Sales CAGR from FY16-19



Avi-Tech's Revenue vs US Semiconductor Billings



Cost Breakdown as a % of Revenue



Source: Company, CEIC, Semiconductor Industry Association, International Data Corporation, DBS Bank

GROWTH PROSPECTS

Growing penetration of smart automotive. Enabled by advancements in technology in areas such as AI and 5G, the penetration of smart automotive will drive the demand for semiconductors used in automotive. Semiconductor ICs with different functionalities are used in various automotive products such as navigation control, infotainment systems, advanced driver assistance systems (ADAS), autonomous driving, and collision detection systems. Advanced driver assistance systems (ADAS) are electronic systems that assist the vehicle driver while driving. ADAS use microcontroller units and sensors, among other semiconductor products. Just Auto is forecasting sensors in ADAS to grow at a CAGR of 6.9% over the next three years, and Infineon is projecting revenue from the automotive segment to grow by 10% annually. This structural trend will drive the demand for burn-in tests for automotive semiconductor chips, benefitting Avi-Tech.

Global electric vehicle (EV) is expected to grow at a CAGR of 22.7% until 2030. EV sales – battery EVs (BEV) and plug-in hybrid vehicles (PHEV) – have grown at a CAGR of 53.5% from 2015 to 2018, almost reaching 2 million units sold in 2018. At their base case, International Energy Agency (IEA) is projecting this explosive growth to continue as EV sales grow at a CAGR of 22.7% to reach 23 million units sold annually by 2030. The main driving factors are governments increasing their focus on sustainability through policies and technological advancements substantially reducing the costs.

According to Infineon, the average semiconductor content in a hybrid/pure EV is double that of the traditional internal combustion engine. We believe Avi-Tech's top line will be a beneficiary with the semiconductor content doubling in automotive, as a higher volume of semiconductor chips will require testing.

- Why are semiconductors important in EVs?**

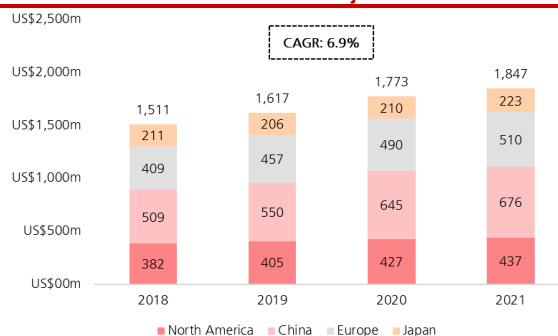
One of the core challenges surrounding EVs is the mileage they can cover (drive range), and semiconductors play a critical role in enabling the feasibility of EVs. More advanced semiconductor chips are able to handle more tasks and thus reduces the heat dissipated by the chips. This increases the efficiency of the electric vehicles as less energy is lost as heat.

MANAGEMENT & STRATEGY

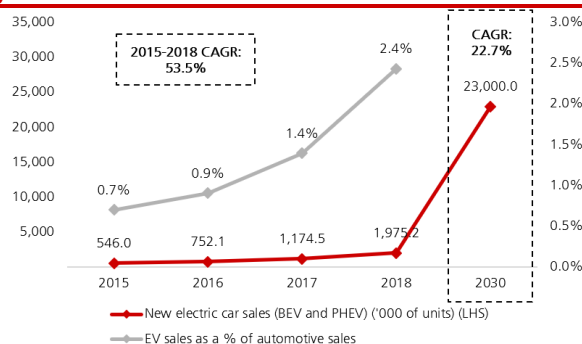
Founder-led company. Mr Lim Eng Hong, the founder and Chief Executive Officer (CEO) of Avi-Tech, has more than 40 years of experience in the semiconductor industry. He has led Avi-Tech's expansion and development of its existing business as well as diversification into other related business areas.

Automation remains a key priority. Avi-Tech's newly installed automated equipment as well as the adoption of smart manufacturing has enabled improvement in efficiencies, increased output, and greater cost control. As a result, the company was able to achieve a 6.6% increase in operating profit in FY19 while total salary increased 1.4%.

Global Auto Sensors in ADAS Sales Projection



Semiconductor Value in Traditional Combustion Engines vs Hybrid Electric Vehicles



Key Management Team

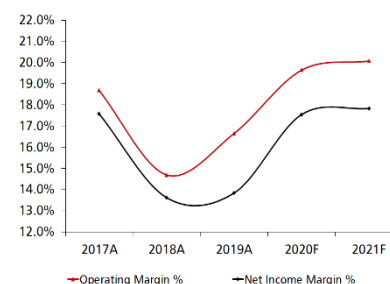
Mr Lim Eng Hong (Chief Executive Officer)	Mr Lim is the founder of Avi-Tech. He has more than 40 years of experience in the semiconductor industry and has been the main driving force behind the growth and business expansion of the Group. He oversees the Group's overall business activities and is particularly involved in the development of the strategies behind the Group's diversification into other related business areas.
Mr Lim Tai Meng, Alvin (Chief Operating Officer)	Mr Lim joined Avi-Tech in 2002 and is responsible for overseeing the Group's operations in the various business segments. He also develops the competitive positioning and strategies of the Group and manages the sales, marketing, and business development functions.
Mr Wang Nin Choon, Joseph (Chief Financial Officer)	Mr Wang has more than 23 years of finance, corporate treasury management, corporate banking, global market, and investment banking experience. He has held senior roles such as the Chief Financial Officer, Treasurer, and Vice President of Top Global, ST Engineering, PSA International, and Singapore Technologies. He also has strong banking experience, and has held senior roles at Barclays Capital, and Deutsche Bank as its Vice President for client management.

Source: Company, Just Auto, Infineon, DBS Bank

Income Statement (\$m)

FY Jun	2016A	2017A	2018A	2019A	2020F	2021F
Revenue	33.9	40.0	35.7	33.6	33.6	35.6
Cost of Goods Sold	(23.0)	(28.2)	(25.8)	(23.1)	(22.0)	(23.1)
Gross Profit	11.0	11.8	9.95	10.5	11.6	12.5
Other Opnq (Exp)/Inc	(3.5)	(4.3)	(4.7)	(5.0)	(5.0)	(5.3)
Operating Profit	7.51	7.47	5.24	5.59	6.59	7.14
Other Non Opq (Exp)/Inc	(0.2)	0.0	0.0	0.0	0.0	0.0
Associates & JV Inc	0.0	0.0	0.0	0.0	0.0	0.0
Net Interest (Exp)/Inc	0.37	0.45	0.45	0.50	0.50	0.50
Exceptional Gain/(Loss)	0.01	0.11	0.0	(0.4)	0.0	0.0
Pre-tax Profit	7.70	8.02	5.70	5.72	7.09	7.64
Tax	(1.5)	(1.0)	(0.8)	(1.1)	(1.2)	(1.3)
Minority Interest	0.0	0.0	0.0	0.0	0.0	0.0
Preference Dividend	0.0	0.0	0.0	0.0	0.0	0.0
Net Profit	6.23	7.03	4.86	4.65	5.88	6.34
Net Profit before Except.	6.22	6.92	4.86	5.02	5.88	6.34
EBITDA	8.35	8.56	6.45	6.86	7.88	8.49
Growth						
Revenue Gth (%)	19.5	17.8	(10.7)	(5.9)	(0.1)	6.0
EBITDA Gth (%)	125.1	2.5	(24.6)	6.3	14.8	7.8
Opq Profit Gth (%)	102.3	(0.5)	(29.8)	6.6	17.9	8.3
Net Profit Gth (Pre-ex) (%)	67.2	11.3	(29.7)	3.2	17.2	7.7
Margins & Ratio						
Gross Margins (%)	32.3	29.5	27.9	31.4	34.5	35.0
Opq Profit Margin (%)	22.1	18.7	14.7	16.6	19.6	20.1
Net Profit Margin (%)	18.3	17.6	13.6	13.8	17.5	17.8
ROAE (%)	14.0	14.9	10.0	9.5	11.4	11.3
ROA (%)	12.0	12.7	8.6	8.4	10.1	10.1
ROCE (%)	14.2	15.1	10.6	11.0	12.1	12.0
Div Payout Ratio (%)	77.1	48.6	109.0	114.1	30.0	30.0
Net Interest Cover (x)	NM	NM	NM	NM	NM	NM

Margins Trend



Impairment on Hyflux bonds

Margin improvements due to better utilisation of resources

Source: Company, DBS Bank

Quarterly / Interim Income Statement (\$\$m)

FY Jun	4Q2018	1Q2019	2Q2019	3Q2019	4Q2019	1Q2020
Revenue	7.46	7.84	7.67	7.38	10.7	8.12
Cost of Goods Sold	(5.7)	(5.6)	(5.5)	(5.4)	(6.6)	(5.1)
Gross Profit	1.81	2.24	2.14	2.01	4.16	3.06
Other Oper. (Exp)/Inc	(1.2)	(1.3)	(1.2)	(1.3)	(1.2)	(1.2)
Operating Profit	0.65	0.95	0.98	0.75	2.97	1.83
Other Non Opq (Exp)/Inc	0.0	0.0	0.0	0.0	0.0	0.0
Associates & JV Inc	0.0	0.0	0.0	0.0	0.0	0.0
Net Interest (Exp)/Inc	0.11	0.13	0.11	0.13	0.13	0.16
Exceptional Gain/(Loss)	0.32	0.0	0.08	(0.3)	(0.1)	0.08
Pre-tax Profit	1.08	1.06	1.17	0.54	2.96	2.07
Tax	(0.2)	(0.2)	(0.2)	(0.1)	(0.6)	(0.4)
Minority Interest	0.0	0.0	0.0	0.0	0.0	0.0
Net Profit	0.84	0.86	0.96	0.42	2.41	1.71
Net profit bef Except.	0.53	0.89	0.88	0.76	2.55	1.63
EBITDA	0.96	1.27	0.98	0.75	3.29	2.19

Growth

Revenue Gth (%)	(3.2)	5.1	(2.1)	(3.9)	45.2	(24.2)
EBITDA Gth (%)	13.2	31.6	(22.5)	(23.3)	337.2	(33.3)
Opq Profit Gth (%)	(23.7)	47.2	2.7	(23.3)	294.8	(38.3)
Net Profit Gth (%)	31.2	2.4	10.8	(56.0)	473.6	(29.1)

Margins

Gross Margins (%)	24.3	28.6	27.9	27.3	38.8	37.6
Opq Profit Margins (%)	8.7	12.2	12.8	10.2	27.7	22.6
Net Profit Margins (%)	11.3	11.0	12.4	5.7	22.5	21.0

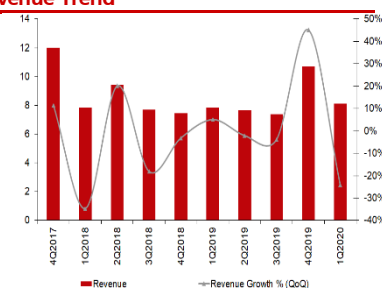
Source: Company, DBS Bank

Balance Sheet (\$\$m)

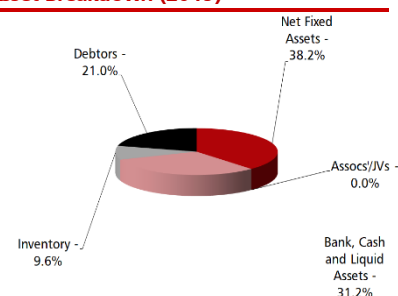
FY Jun	2016A	2017A	2018A	2019A	2020F	2021F
Net Fixed Assets	12.7	13.5	12.7	12.1	12.1	12.1
Invts in Associates & JVs	0.0	0.0	0.0	0.0	0.0	0.0
Other LT Assets	3.00	8.04	0.51	0.0	0.0	0.0
Cash & ST Invts	26.3	23.8	32.7	34.5	39.0	42.4
Inventory	3.07	3.88	3.39	3.04	3.21	3.41
Debtors	7.21	8.92	4.98	6.62	4.96	7.32
Other Current Assets	0.43	0.34	0.35	0.41	0.41	0.41
Total Assets	52.7	58.4	54.6	56.6	59.6	65.6
ST Debt	0.61	0.38	0.0	0.0	0.0	0.0
Creditor	2.59	4.91	1.91	2.95	1.77	3.23
Other Current Liab	2.86	3.00	3.17	3.17	3.24	3.33
LT Debt	0.38	0.0	0.0	0.0	0.0	0.0
Other LT Liabilities	0.95	1.18	1.00	0.97	0.97	0.97
Shareholder's Equity	45.3	48.9	48.5	49.5	53.7	58.1
Minority Interests	0.0	0.0	0.0	0.0	0.0	0.0
Total Cap. & Liab.	52.7	58.4	54.6	56.6	59.6	65.6
Non-Cash Wkq. Capital	5.27	5.23	3.65	3.95	3.57	4.58
Net Cash/(Debt)	25.3	23.4	32.7	34.5	39.0	42.4
Debtors Turn (avq days)	72.0	73.6	71.0	63.0	63.0	63.0
Creditors Turn (avq days)	46.6	50.5	50.6	40.7	41.6	41.9
Inventory Turn (avq days)	54.9	46.8	54.0	53.9	55.1	55.6
Asset Turnover (x)	0.7	0.7	0.6	0.6	0.6	0.6
Current Ratio (x)	6.1	4.4	8.2	7.3	9.5	8.2
Quick Ratio (x)	5.5	3.9	7.4	6.7	8.8	7.6
Net Debt/Equity (X)	CASH	CASH	CASH	CASH	CASH	CASH
Net Debt/Equity ex MI (X)	CASH	CASH	CASH	CASH	CASH	CASH
Capex to Debt (%)	100.3	413.8	N/A	N/A	N/A	N/A

Source: Company, DBS Bank

Revenue Trend



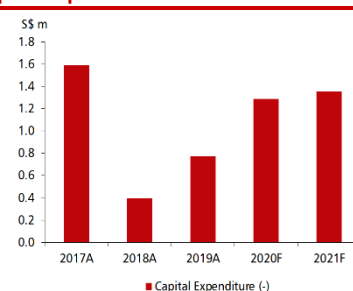
Asset Breakdown (2019)



Cash Flow Statement (S\$m)

FY Jun	2016A	2017A	2018A	2019A	2020F	2021F
Pre-Tax Profit	7.70	8.02	5.70	5.72	7.09	7.64
Dep. & Amort.	1.03	1.10	1.21	1.27	1.29	1.35
Tax Paid	(0.2)	(0.7)	(0.5)	(1.0)	(1.1)	(1.2)
Assoc. & JV Inc/(loss)	0.03	0.01	0.0	0.0	0.0	0.0
Chq in Wkq.Cap.	(0.1)	(0.7)	0.76	(0.6)	0.31	(1.1)
Other Operating CF	(0.5)	0.46	0.39	0.69	0.0	0.0
Net Operating CF	7.95	8.17	7.53	6.09	7.55	6.69
Capital Exp.(net)	(1.0)	(1.6)	(0.4)	(0.8)	(1.3)	(1.4)
Other Invt.(net)	(7.4)	(1.5)	2.27	(3.0)	0.0	0.0
Invt in Assoc. & JV	0.0	0.0	0.0	0.0	0.0	0.0
Div from Assoc & JV	0.0	0.0	0.0	0.0	0.0	0.0
Other Investing CF	0.0	0.0	0.0	0.0	0.0	0.0
Net Investing CF	(8.4)	(3.1)	1.88	(3.8)	(1.3)	(1.4)
Div Paid	(4.8)	(3.4)	(5.3)	(3.6)	(1.8)	(1.9)
Chq in Gross Debt	(0.6)	(0.6)	(0.4)	0.0	0.0	0.0
Capital Issues	(0.1)	0.0	0.0	0.0	0.0	0.0
Other Financing CF	0.07	(0.1)	(0.1)	0.0	0.0	0.0
Net Financial CF	(5.5)	(4.1)	(5.7)	(3.6)	(1.8)	(1.9)
Currency Adjustments	0.0	0.01	0.0	0.0	0.0	0.0
Chq in Cash	(5.9)	1.03	3.67	(1.3)	4.50	3.44
Opq CFPS (S cts)	4.73	5.20	3.96	3.90	4.23	4.55
Free CFPS (S cts)	4.07	3.85	4.17	3.11	3.66	3.12

Capital Expenditure



Source: Company, DBS Bank

VALUATION

Target price of S\$0.47, based on FY20F forward PE ratio of 13.5x. Avi-Tech is currently trading at 10.6x, which is -0.45D below its 2-year average forward PE. We believe that the semiconductor cycle is bottoming out and the stock's valuation multiple should re-rate as the cycle picks up. We like Avi-Tech for two reasons:

1. It is trading below its FY20F peer-average forward PE of 16.0x; and
2. It has customer exposure to two leading semiconductor companies in the automotive space.

Projected earnings growth of 26.7% in FY20F driven mainly by improvements in operating margins. In 1Q20, Avi-Tech's gross profit margins increased to 37.6% from 28.6% in 1Q19, as the company enhanced productivity and controlled costs, reducing its unit cost of production.

RISKS

Slowdown in demand for consumer products due to geopolitical issues. The US-China trade war, Japan-Korea trade feud, Hong Kong unrest, and Brexit have weighed on global growth by dampening business and investment activities, as well as consumer sentiment and demand. A further escalation could slow down or cut the semiconductor recovery cycle.

Peer Comparison Table

Bloomberg Ticker	Company Name	Market Data		Financial Data				Valuation				
		Primary Exchange	Market Cap (US\$m)	Sales (S\$m)	Net Profit (US\$m)	Net Profit Margin (%)	Debt (US\$m)	FY19F	FY20F	FY18	P/E FY19F	FY20F
Semiconductor Burn-in Test Providers												
AVIT SP Equity	Avi-Tech Electronics Ltd	Singapore	45.1	24.6	3.4	13.8%	0.1	7.7x	6.1x	12.8x	13.4x	10.6x
KESM MK Equity	Kesm Industries Bhd	Malaysia	90.7	74.4	1.5	2.0%	14.9	2.4x	2.2x	46.6x	20.1x	15.7x
AEHR US Equity	Aehr Test Systems	Nasdaq	43.4	21.1	-5.2	-24.9%	0.0	N/A	N/A	N/A	19.1x	9.6x
6961 JP Equity	Enplas Corp	Tokyo	602.3	282.2	3.0	1.1%	0.0	9.0x	8.4x	59.9x	20.7x	22.8x
Peer Average (Excluding Avi-Tech)		Tokyo	584.6	125.9	-0.2	-7.3%	5.0	5.7x	5.3x	53.2x	20.0x	16.0x

Source: Company, Bloomberg Finance L.P, DBS Bank

Risk Assessment: Moderate

Category	Risk Rating 1 (Low) - 3 (High)	Wgt	Wgtd Score
Earnings	2	40%	0.8
Financials	1	20%	0.2
Shareholdings	1	40%	0.4
Overall			1.4

12-month Forward PE Ratio



Source: Company, Bloomberg Finance L.P, DBS Bank

Report contributed by: CHUNG Wei Le

Singapore Equity Explorer

Micro-Mechanics Holdings Ltd

Bloomberg: MMH SP | Reuters: MMEC.SI

Refer to important disclosures at the end of this report

DBS Group Research . Equity

29 Nov 2019

NOT RATED S\$1.80 STI : 3,200.61

Closing price as of 28 Nov 2019

Return *: 2

Risk: Moderate

Potential Target 12-mth* : 12-Month S\$ 2.13 (18% upside)

Analyst

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Price Relative**Forecasts and Valuation**

FY Jun (\$m)	2019A	2020F	2021F	2022F
Revenue	60.3	63.2	70.6	80.3
EBITDA	23.6	25.5	27.6	30.3
Pre-tax Profit	17.1	19.2	21.4	24.2
Net Profit	13.0	15.0	16.7	18.9
Net Pft (Pre Ex.)	13.0	15.0	16.7	18.9
EPS (S cts)	9.31	10.8	12.0	13.6
EPS Pre Ex. (S cts)	9.31	10.8	12.0	13.6
EPS Gth (%)	(24)	16	11	13
EPS Gth Pre Ex (%)	(24)	16	11	13
Diluted EPS (S cts)	9.31	10.8	12.0	13.6
Net DPS (S cts)	10.0	10.0	10.0	10.0
BV Per Share (S cts)	42.0	42.7	44.7	48.3
PE (X)	19.3	16.7	15.0	13.2
PE Pre Ex. (X)	19.3	16.7	15.0	13.2
P/Cash Flow (X)	13.0	11.6	11.4	10.5
EV/EBITDA (X)	9.7	8.9	8.1	7.3
Net Div Yield (%)	5.6	5.6	5.6	5.6
P/Book Value (X)	4.3	4.2	4.0	3.7
Net Debt/Equity (X)	CASH	CASH	CASH	CASH
ROAE (%)	21.8	25.4	27.4	29.2

Consensus EPS (S cts):

10.0 11.0 N/A

Other Broker Recs:

B: 0 S: 0 H: 1

GIC Industry : Industrials

GIC Sector: Commercial & Professional Serv

Principal Business: Micro-Mechanics (MMH) produces consumables used in the chip testing and assembly process of semiconductors and contract manufactures precision parts used in critical processes during wafer fabrication.

Rewing the machine

- Major beneficiary of bottoming semiconductor industry
- Relatively low risk counter with no debt and strong cash flow generating ability
- Attractive dividend yield of c.5.6%
- Fair value of S\$2.13 based on 19.8x FY20F PE

The Business

Semiconductor equipment components maker. Micro-Mechanics Holdings (MMH) is a manufacturer of consumable parts and tools used in fabrication, chip testing and assembly of semiconductors. The company has one factory each in the US, China, Singapore, the Philippines and Malaysia.

Potential turnaround ahead coupled with structural industry changes. The semiconductor industry appears to be reaching the tail end of the downcycle. This combined with technological advancements such as the Internet of Things, cloud data storage and a transition to 10-nanometer and below geometries should drive demand for MMH's components and tools going forward.

Zero debt; high operating cash flows. MMH has no borrowings, enabling the group to weather downturns better than most. In addition, the group is able to generate strong cash flows, enabling it to fully fund capital expenditure even during a slowdown to boost production quickly when the cyclical semiconductor industry rebounds.

The Stock

Fair value of S\$2.13. The fair value of S\$2.13 implies 19.8x FY20F PE which is +1SD from its 2-year historical mean. We think this is justified given the potential upswing in the semiconductor cycle and MMH's high FY20F dividend yield of c.4.7% at its fair value.

Potential catalysts: Formal end to US-China trade war; higher dividend payouts; M&A activity.

Potential risks: Resurgence of US-China trade war which could dampen manufacturing confidence; sudden downturn in semiconductor industry.

At A Glance

Issued Capital (m shrs)	139
Mkt. Cap (S\$m/US\$m)	250 / 184
Major Shareholders (%)	
Sarcadia Ltd	27.2
Borch Christopher Reid	24.8
Low Ming Wah	5.1
Free Float (%)	42.9
3m Avg. Daily Val (US\$m)	0.05

*This Equity Explorer report represents a preliminary assessment of the subject company, and does not represent initiation into DBSV's coverage universe. As such DBSV does not commit to regular updates on an ongoing basis. The rating system is distinct from stocks in our regular coverage universe and is explained further on the back page of this report.



Micro-Mechanics Holdings Ltd

REVENUE DRIVERS

Key parts and tools maker for semiconductor fabrication and assembly processes. Micro-Mechanics Holdings (MMH) plays a crucial role in the semiconductor fabrication and assembly process. The group produces consumables, such as rubber pick-up tips used in the chip testing and assembly process of semiconductors. MMH also contract manufactures high-precision parts and tools used in critical processes during wafer fabrication.

Global customer base with over 600 active customers. China (28.7%), the US (20.7%) and Malaysia (18.6%) were the three largest contributors to MMH’s top line in FY19, accounting for c.68% of total revenue. That said, MMH’s sales are very broad-based with Singapore (5.3%), Europe (4.3%) and Taiwan (7.3%) contributing significant sales as well. In addition, there has been an increasing shift towards the US and China with share of revenue increasing from 15% to 21% for the former and 26% to 29% for the latter from FY15 to FY19.

Semiconductor industry rebound to drive revenue turnaround. As of end-Sep 19, average capacity utilisation for FY19 stood at 57%, leaving room for MMH to increase production once a recovery in the semiconductor industry takes place. In particular, we have noted that quarterly worldwide semiconductor shipments are highly correlated with MMH’s revenue (r = 0.84). With semiconductor shipments appearing to have rebounded, MMH may see a turnaround in revenue soon.

COST STRUCTURE

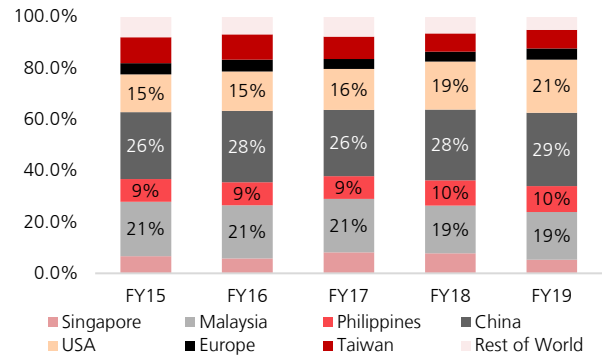
Staff costs and depreciation the main cost components. Staff costs and depreciation were the top cost items in FY19, constituting 44.6% and 13.6% of total costs, respectively. Staff costs have remained stable over the years, hovering at around c.44% of total costs or c.35% of revenue. However, depreciation has crept up as MMH has increased capital expenditure, increasing from 11.2% to 13.6% of total costs from FY15 to FY19.

Diversified exposure to raw materials. As a parts and tools maker, MMH uses a wide range of raw materials including stainless steel, brass, tungsten and rubber. Among the raw materials, we believe that rubber is MMH’s top raw material exposure.

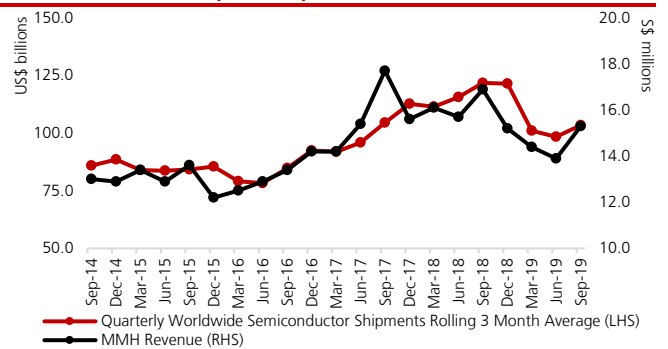
KEY OPERATING ASSETS

Five manufacturing facilities across the world. MMH has five factories with one each in China, the US, Singapore, Malaysia and the Philippines. The group’s China and US factories are well sited with the former located in Suzhou Industrial Park (a park that has semiconductor heavyweights such as Applied Materials) and the latter at Silicon Valley. With both China and the US at the forefront of the semiconductor industry, the factories are well situated to tap on any opportunities.

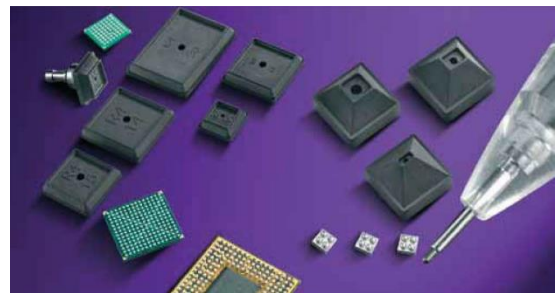
China’s and US’ share of revenue has been on an uptrend



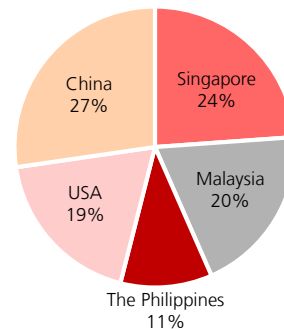
Quarterly worldwide semiconductor shipments highly correlated with MMH’s revenue (r = 0.84)



Sample products from MMH (rubber pick-up tips)



Revenue contribution by factory (FY19)



Source: Company, CEIC, DBS Bank

GROWTH PROSPECTS

Plethora of opportunities in the semiconductor industry. The semiconductor industry is expected to be buoyed by a wave of growth driven by trends that include the Internet of Things, 5G networks, cloud data centers and automotive technologies. After a dip in 2019, World Semiconductor Trade Statistics (WSTS) is forecasting semiconductor sales to grow 4.8% in 2020. As adoption of these new advanced technologies become more commonplace, growth is likely to accelerate further beyond 2020.

Industry transition to 10-nanometer and below device geometries to create demand for more sophisticated tools. As the semiconductor industry shifts towards smaller device geometries, chip fabrication has become increasingly difficult. MMH has developed proprietary materials and processes required for the increasingly complex manufacturing of tools and parts used in the semiconductor value chain. The SEMI association forecasts that global sales of semiconductor manufacturing equipment will grow 11.6% y-o-y to US\$58.8bn for 2020F from US\$52.7bn in 2019. This would represent 9.3% CAGR from 2016.

Zero debt a mark of stability. MMH has a history of having no debt which we believe is positive for the group's financial stability. Having zero borrowings provides MMH with the option to borrow and expand. That said, we believe MMH will maintain its zero-debt policy at this juncture. The lack of interest payments and lower solvency risk will allow the group to weather the troughs of the cyclical semiconductor industry better.

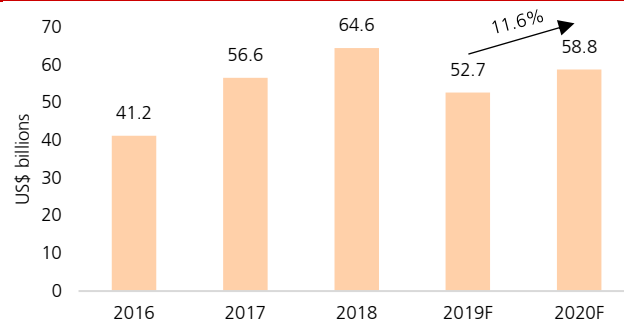
High operating cash flows underpin debt-free capital expenditure. MMH's high operating cash flows enables the group to expand manufacturing capacity even during semiconductor downcycles. This was evident in FY18 where MMH spent a record S\$12.1m on new equipment to increase capacity. Notably, a sizable amount was focused in the US, China, and Singapore. Spending during downcycles creates opportunities for MMH to meet demand when the industry recovers.

MANAGEMENT

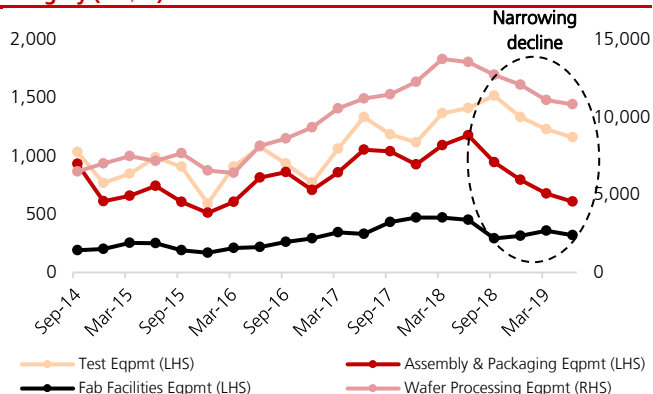
Experienced leadership team. MMH's leadership team comprises of founder Christopher Reid Borch (CEO) and long serving members of the group - Low Ming Wah (COO) and Chow Kam Wing (CFO). The former two are veterans of the semiconductor industry with each having over 35 years of experience. Similarly, Mr Chow has accumulated a wealth of experience in finance having worked in audit and accounting for more than 15 years.

Corporate governance. MMH has consistently been recognised for its high standards of corporate governance, quality of disclosure and investor relations. The company ranked 17 on the Singapore Governance and Transparency Index and has received a total of 31 awards since its listing in 2003. In addition, Mr Borch's interest is likely to be aligned to investors considering that dividends make up c.87.9% of his total income from MMH.

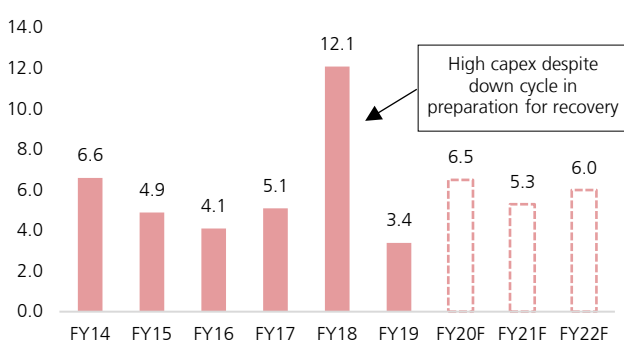
Semiconductor manufacturing equipment sales may rebound



Global total semiconductor equipment manufacturer billings by category (US\$m)



MMH capital expenditure trend (S\$m)



Mr Borch's est. total income from MMH (FY19)

	Absolute (S\$m)	%
Remuneration	1.0	12.1%
Dividend	7.2	87.9%
Total	8.2	100%

Source: Company, SEMI, CEIC, DBS Bank

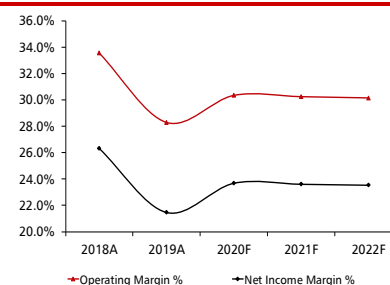
Income Statement (\$m)

FY Jun	2017A	2018A	2019A	2020F	2021F	2022F
Revenue	57.2	65.1	60.3	63.2	70.6	80.3
Cost of Goods Sold	(24.4)	(28.0)	(28.0)	(28.5)	(31.8)	(36.1)
Gross Profit	32.9	37.1	32.4	34.8	38.8	44.2
Other Opnq (Exp)/Inc	(14.4)	(15.2)	(15.3)	(15.6)	(17.5)	(20.0)
Operating Profit	18.5	21.9	17.1	19.2	21.4	24.2
Other Non Opq (Exp)/Inc	0.0	0.0	0.0	0.0	0.0	0.0
Associates & JV Inc	0.0	0.0	0.0	0.0	0.0	0.0
Net Interest (Exp)/Inc	0.0	0.0	0.0	0.0	0.0	0.0
Exceptional Gain/(Loss)	0.0	0.0	0.0	0.0	0.0	0.0
Pre-tax Profit	18.5	21.9	17.1	19.2	21.4	24.2
Tax	(3.7)	(4.7)	(4.1)	(4.2)	(4.7)	(5.3)
Minority Interest	0.0	0.0	0.0	0.0	0.0	0.0
Preference Dividend	0.0	0.0	0.0	0.0	0.0	0.0
Net Profit	14.8	17.1	13.0	15.0	16.7	18.9
Net Profit before Except.	14.8	17.1	13.0	15.0	16.7	18.9
EBITDA	22.8	27.8	23.6	25.5	27.6	30.3
Growth						
Revenue Gth (%)	11.7	13.8	(7.3)	4.8	11.7	13.8
EBITDA Gth (%)	13.5	21.5	(15.0)	8.0	8.2	10.0
Opq Profit Gth (%)	17.9	18.1	(21.9)	12.4	11.3	13.4
Net Profit Gth (Pre-ex) (%)	24.2	16.1	(24.5)	15.6	11.3	13.4
Margins & Ratio						
Gross Margins (%)	57.4	57.0	53.7	55.0	55.0	55.0
Opq Profit Margin (%)	32.3	33.6	28.3	30.3	30.2	30.2
Net Profit Margin (%)	25.8	26.3	21.5	23.7	23.6	23.5
ROAE (%)	28.1	29.8	21.8	25.4	27.4	29.2
ROA (%)	23.3	24.4	18.1	21.1	22.6	24.0
ROCE (%)	27.0	28.3	20.7	24.2	26.1	27.9
Div Payout Ratio (%)	75.3	81.1	107.4	92.9	83.4	73.6
Net Interest Cover (x)	NM	NM	NM	NM	NM	NM

Source: Company, DBS Bank

Assume dividend of
S\$0.10 per share is
maintained

Margins Trend



Quarterly / Interim Income Statement (\$\$m)

FY Jun	4Q2018	1Q2019	2Q2019	3Q2019	4Q2019	1Q2020
Revenue	15.7	16.9	15.2	14.4	13.9	15.3
Cost of Goods Sold	(7.1)	(6.8)	(7.2)	(7.3)	(6.6)	(7.2)
Gross Profit	8.57	10.0	7.95	7.08	7.30	8.19
Other Oper. (Exp)/Inc	(3.6)	(4.1)	(3.9)	(3.7)	(3.7)	(3.8)
Operating Profit	4.99	5.99	4.10	3.41	3.57	4.42
Other Non Opq (Exp)/Inc	0.0	0.0	0.0	0.0	0.0	0.0
Associates & JV Inc	0.0	0.0	0.0	0.0	0.0	0.0
Net Interest (Exp)/Inc	0.0	0.0	0.0	0.0	0.0	0.0
Exceptional Gain/(Loss)	0.0	0.0	0.0	0.0	0.0	0.0
Pre-tax Profit	4.99	5.99	4.10	3.41	3.57	4.42
Tax	(1.0)	(1.5)	(1.0)	(0.8)	(0.9)	(1.2)
Minority Interest	0.0	0.0	0.0	0.0	0.0	0.0
Net Profit	3.96	4.51	3.12	2.61	2.71	3.27
Net profit bef Except.	3.96	4.51	3.12	2.61	2.71	3.27
EBITDA	6.54	7.61	5.75	5.03	5.21	6.07

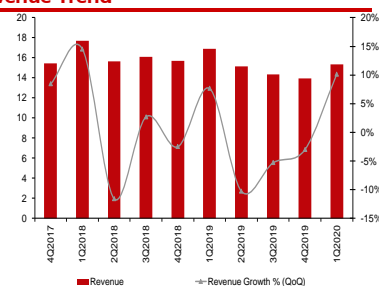
Growth

Revenue Gth (%)	(2.5)	7.7	(10.2)	(5.3)	(3.0)	10.1
EBITDA Gth (%)	(2.9)	16.3	(24.5)	(12.4)	3.5	16.5
Opq Profit Gth (%)	(4.6)	20.1	(31.6)	(16.9)	4.7	23.8
Net Profit Gth (%)	(3.7)	13.9	(30.7)	(16.4)	3.6	20.9

Margins

Gross Margins (%)	54.6	59.5	52.4	49.3	52.4	53.4
Opq Profit Margins (%)	31.8	35.5	27.1	23.7	25.6	28.8
Net Profit Margins (%)	25.2	26.7	20.6	18.2	19.4	21.3

Revenue Trend



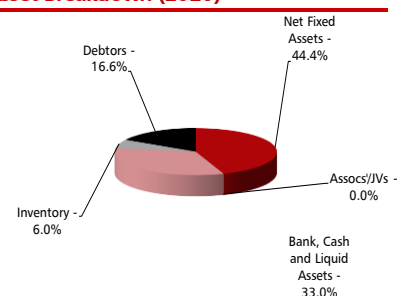
Semiconductor downturn begins to affect earnings

Source: Company, DBS Bank

Balance Sheet (\$\$m)

FY Jun	2017A	2018A	2019A	2020F	2021F	2022F
Net Fixed Assets	26.2	33.3	30.8	31.0	30.1	30.0
Invts in Associates & JVs	0.0	0.0	0.0	0.0	0.0	0.0
Other LT Assets	2.32	2.46	2.29	2.29	2.29	2.29
Cash & ST Invts	23.4	21.1	21.9	23.0	25.8	29.6
Inventory	3.67	4.58	4.51	4.19	4.68	5.32
Debtors	11.9	11.9	10.4	11.6	12.9	14.7
Other Current Assets	0.0	0.0	0.0	0.0	0.0	0.0
Total Assets	67.5	73.3	69.9	72.1	75.7	81.9
ST Debt	0.0	0.0	0.0	0.0	0.0	0.0
Creditor	7.81	7.08	6.44	7.56	8.44	9.60
Other Current Liab	2.24	2.55	2.04	2.04	2.04	2.04
LT Debt	0.0	0.0	0.0	0.0	0.0	0.0
Other LT Liabilities	2.65	3.36	3.05	3.05	3.05	3.05
Shareholder's Equity	54.8	60.3	58.4	59.4	62.2	67.2
Minority Interests	0.0	0.0	0.0	0.0	0.0	0.0
Total Cap. & Liab.	67.5	73.3	69.9	72.1	75.7	81.9
Non-Cash Wkq. Capital	5.52	6.85	6.42	6.15	7.11	8.36
Net Cash/(Debt)	23.4	21.1	21.9	23.0	25.8	29.6
Debtors Turn (avq days)	70.9	66.7	67.4	63.3	63.2	62.7
Creditors Turn (avq days)	125.4	122.9	115.1	115.3	114.3	109.7
Inventory Turn (avq days)	63.3	68.1	77.4	71.7	63.3	60.8
Asset Turnover (x)	0.9	0.9	0.8	0.9	1.0	1.0
Current Ratio (x)	3.9	3.9	4.3	4.0	4.1	4.3
Quick Ratio (x)	3.5	3.4	3.8	3.6	3.7	3.8
Net Debt/Equity (X)	CASH	CASH	CASH	CASH	CASH	CASH
Net Debt/Equity ex MI (X)	CASH	CASH	CASH	CASH	CASH	CASH
Capex to Debt (%)	N/A	N/A	N/A	N/A	N/A	N/A

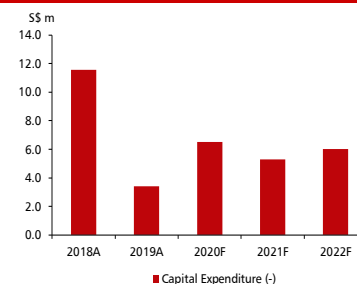
Asset Breakdown (2020)



Source: Company, DBS Bank

Cash Flow Statement (S\$m)

FY Jun	2017A	2018A	2019A	2020F	2021F	2022F
Pre-Tax Profit	18.5	21.9	17.1	19.2	21.4	24.2
Dep. & Amort.	4.34	5.91	6.53	6.30	6.23	6.12
Tax Paid	(3.9)	(3.8)	(4.6)	(4.2)	(4.7)	(5.3)
Assoc. & JV Inc/(loss)	0.0	0.0	0.0	0.0	0.0	0.0
Chq in Wkq.Cap.	(0.7)	0.42	0.33	0.27	(1.0)	(1.3)
Other Operating CF	(0.2)	(2.0)	(0.1)	0.0	0.0	0.0
Net Operating CF	18.1	22.4	19.3	21.5	21.9	23.8
Capital Exp.(net)	(5.0)	(11.6)	(3.4)	(6.5)	(5.3)	(6.0)
Other Invts.(net)	0.0	0.0	0.0	0.0	0.0	0.0
Invts in Assoc. & JV	0.0	0.0	0.0	0.0	0.0	0.0
Div from Assoc & JV	0.0	0.0	0.0	0.0	0.0	0.0
Other Investing CF	0.13	0.16	0.23	0.0	0.0	0.0
Net Investing CF	(4.9)	(11.4)	(3.2)	(6.5)	(5.3)	(6.0)
Div Paid	(9.7)	(12.5)	(13.9)	(13.9)	(13.9)	(13.9)
Chq in Gross Debt	0.0	0.0	0.0	0.0	0.0	0.0
Capital Issues	0.0	0.0	0.0	0.0	0.0	0.0
Other Financing CF	0.0	(1.1)	(1.1)	0.0	0.0	0.0
Net Financial CF	(9.7)	(13.6)	(15.0)	(13.9)	(13.9)	(13.9)
Currency Adjustments	(0.2)	0.27	(0.3)	0.0	0.0	0.0
Chq in Cash	3.35	(2.3)	0.80	1.14	2.74	3.83
Opq CFPS (S cts)	13.5	15.8	13.6	15.3	16.5	18.0
Free CFPS (S cts)	9.43	7.80	11.4	10.8	12.0	12.8

Capital Expenditure

Source: Company, DBS Bank

VALUATIONS

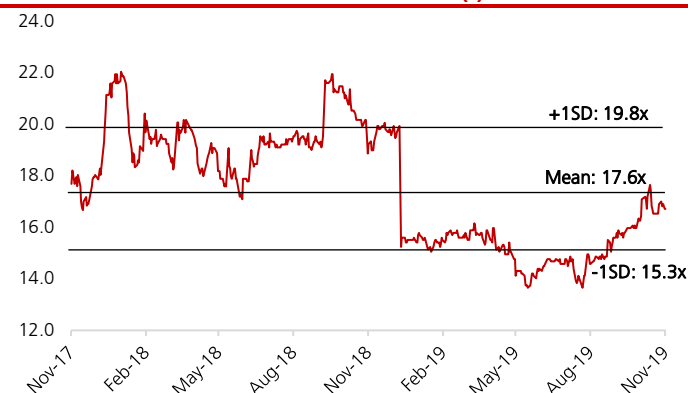
Trading at average valuation. MMH currently trades at 16.7x FY20F PE which is below its two-year historical 12M forward PE mean of 17.6x. Using a multiple of 19.8x FY20F PE pegged to +1SD of its two-year historical mean, we derive a fair value of S\$2.13 for MMH. We believe this is justified due to 1) upswing in semiconductor cycle which has historically led to MMH trading at +1SD; 2) valuation still represents a 10% discount from the historical high of 22x in terms of 12M forward PE ; 3) high FY20F dividend yield of c.4.7% at its fair value of S\$2.13.

Risk Assessment: Moderate

Category	Risk Rating 1 (Low) - 3 (High)	Wgt	Wgtd Score
Earnings	2	40%	0.8
Financials	1	20%	0.2
Shareholdings	1	40%	0.4
Overall			1.4

FY19 earnings lower but dividend was stable. FY19 earnings was down 24.5% y-o-y as the semiconductor downturn and higher depreciation from a record high capital expenditure in FY18 took their toll. That said, MMH endured the year well and was in a net cash position of S\$21.9m despite paying a dividend of S\$0.10 per share, the same as in FY18.

Poised to ride the semiconductor upcycle. The semiconductor industry has shown signs of bottoming with MMH's earnings increasing 20.9% q-o-q in 1Q20. Going forward, we expect earnings to rise 15.6% in FY20F after worldwide semiconductor shipments rose in the quarter of Sep-19, the first time it has increased since the decline began in 2018.

Chart 1: Historical 12-month forward PE ratio (x)

Source: DBS Bank, Bloomberg Finance L.P.

Report contributed by: YONG Woon Bing

Report contributed by: CHUNG Wei Le

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STRONG BUY (>20% total return over the next 3 months, with identifiable share price catalysts within this time frame)

BUY (>15% total return over the next 12 months for small caps, >10% for large caps)

HOLD (-10% to +15% total return over the next 12 months for small caps, -10% to +10% for large caps)

FULLY VALUED (negative total return, i.e., > -10% over the next 12 months)

SELL (negative total return of > -20% over the next 3 months, with identifiable share price catalysts within this time frame)

*Share price appreciation + dividends

Completed Date: 29 Nov 2019 08:03:33 (SGT)

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Sources for all charts and tables are DBS Bank unless otherwise specified.

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