

Singapore Technology

POSITIVE

[Unchanged]

Not Yet

Too early to switch out of chip shortage beneficiaries

We continue to be POSITIVE on the Singapore Tech sector on the back of robust end-demand. We continue to prefer beneficiaries of chip shortages (UMS, FRKN, and now AEM) over contract manufacturers with diverse end-markets (Aztech, VMS, VALUE) as chip shortages still appear a key earnings risk for the latter. Moreover, rotation from the former into the latter appears to have not yet begun. Our top picks are UMS and Frencken on a 3-6 months horizon, and AEM and VMS on a 12 months horizon.

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Supply challenges still key bottleneck

Supply side challenges remain the key earnings bottleneck in 2Q21. Several strategies to overcome these include: i) advanced procurement of inventories; ii) reaffirming delivery from suppliers; iii) redesigning components and parts; iv) accelerating vaccine-rates; and v) in the case of UMS and AEM, tapping into the supply chain capabilities of subsidiaries. Chip shortages are generally expected to extend into 2022.

Semicon equipment takeaways

Semicon equipment demand at leading and trailing nodes for logic/foundry are robust. In trailing nodes, this is powered by a cyclical recovery across multiple end-markets. The buildout in digital infrastructure is also a key demand driver for mature nodes, as sensing devices connected to such infrastructure are typically manufactured out of mature nodes. ASML, AMAT, and Lam Research expect outlook to remain robust through 2022. ASML/ AMAT expects governments' push for fab capacity regionalization in US/Europe to be a catalyst for equipment spend in 2023-24.

Takeaways from VMS' end-markets

VMS' life science and med-tech customers have launched several new products, particularly in liquid chromatography and mass spectrometry - an area where VMS is seeing growth. Other domains that customers are optimistic towards include in test & measurement and networking and comms (on strong demand from semicon, 5G-related, and cloud spending) and advanced industrial (infrastructure spending). Amid robust demand drivers, we believe supply side challenges from components shortages and/or capacity restrictions are key risks for the sector.

Stock	Bloomberg code	Mkt cap (USD'm)	Rating	Price (LC)	TP (LC)	Upside (%)	P/E (x)		P/B (x)		Div yld (%)	
							21E	22E	21E	22E	21E	22E
Venture	VMS SP	4,080	Buy	19.21	25.13	35	16.9	14.1	2.1	1.9	3.9	3.9
AEM Holdings	AEM SP	790	Buy	3.94	5.77	48	14.6	10.8	3.3	2.7	1.7	2.3
Frencken Group	FRKN SP	675	Buy	2.16	2.63	24	14.8	12.7	2.4	2.2	2.0	2.4
UMS Holdings	UMSH SP	645	Buy	1.64	2.10	31	13.1	11.7	3.0	2.5	2.4	2.4
Aztech Global	AZTECH SP	602	Buy	1.06	1.86	78	9.9	7.5	2.9	2.3	2.9	4.0
Valuetronics	VALUE SP	178	Hold	0.56	0.60	11	8.1	9.7	1.1	1.0	5.7	4.1

1. Still prefer beneficiaries of chip shortages

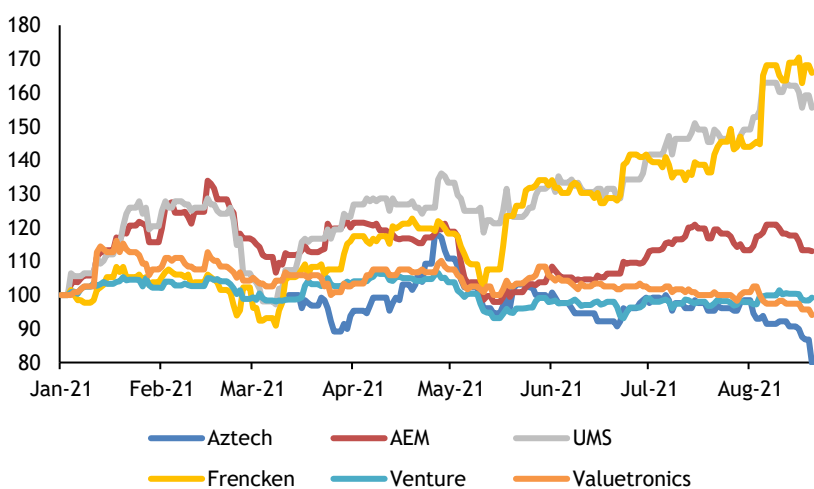
Following 2Q21 results season, we remain POSITIVE on the Singapore Tech hardware sector. We continue to prefer beneficiaries of chip shortages (e.g. UMS, Frencken, and now AEM) over contract manufacturers that have exposure to multiple end-markets (e.g. Venture, Aztech, Valuetronics).

We believe a material driver of Frencken and UMS' outperformance YTD (Fig 1) has been due to earnings momentum being stronger than expected (Fig 2). We continue to see potential for Frencken and UMS to positively surprise in the next 1-2 quarters, on the back of still strong demand momentum from customers. The outlook of semiconductor equipment customers (e.g. Applied Materials, ASML, etc) is still buoyant and is expected to remain so in 2022.

AEM has underperformed YTD, with a steep correction in May, particularly driven by guidance that disappointed the market. However, we favour AEM on a 12-month horizon as we expect the company to enter into a new earnings cycle, aided by i) new products and customers; ii) easier base effects in 2022 given the transitory weakness in 1H21; and iii) cyclical factors favouring increasing spend for test equipment.

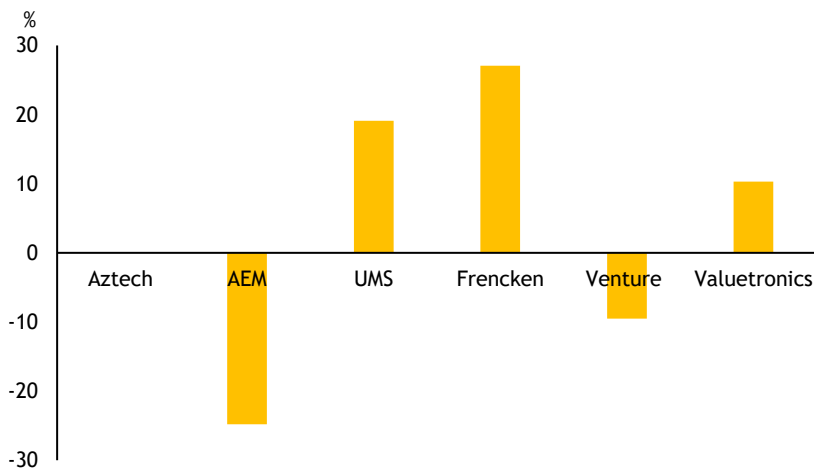
Thus far, we have not observed rotation from Frencken/ UMS into contract manufacturers like Venture, Aztech and Valuetronics, which may suggest investors are still adopting a "wait-and-see" attitude for the catalysts to manifest. We believe that key rerating catalysts for Aztech, Venture, and Valuetronics are i) delivery of earnings growth; and/ or ii) convincing beats against street estimates, coupled with iii) evidence that end-market outlook remains robust that iv) lead to positive EPS revisions. We see these as catalysts as these should prove that growth bottlenecks from chip shortages are over. Fig 3 shows that VMS' (largest SG-tech hardware stock) share price rallies have typically coincided with positive EPS revision cycles. In contrast, VMS' share price declines have typically led negative EPS revisions.

Fig 1: FRKN and UMS have outperformed YTD on strong semicon momentum; Rotation into contract manufacturers like VMS and Aztech has not yet begun



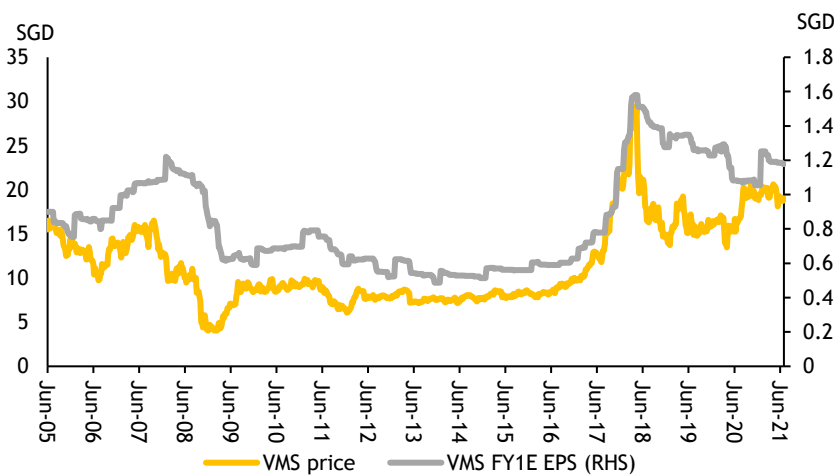
Source: FactSet

Fig 2: MKE FY21E (Valuetronics: FYMar22E) EPS revisions YTD



Source: Maybank Kim Eng

Fig 3: Historically, VMS' share price rallies have coincided with upward FY1E EPS revisions, while share price declines lead negative EPS revisions

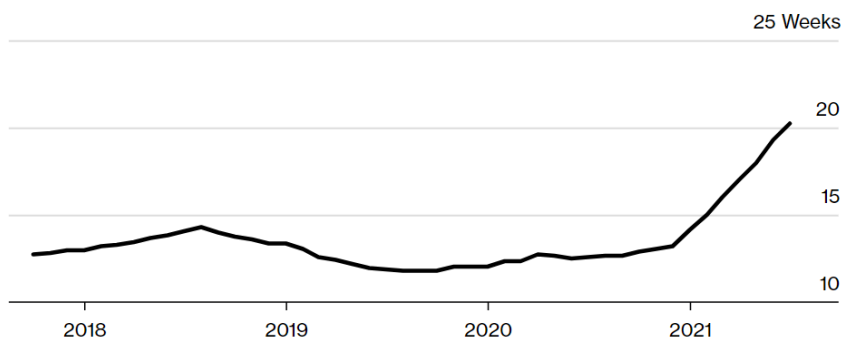


Source: Maybank Kim Eng

2. How are companies tackling supply side challenges

To minimize the adverse impact of supply side disruptions, companies are implementing strategies such as i) advanced procurement of inventories, ii) reaffirming suppliers' delivery commitments, iii) redesigning circuitry and using alternative components; iv) speeding up vaccinations; v) leveraging support from blue-chip customers, and in certain instances, vi) leveraging subsidiaries for capacity/ supply chain expertise.

Companies remain cautious on component availability. Aztech believes that the components shortage situation is unlikely to abate in the next 6-12 months. According to Susquehanna, chip wait times are now more than 20 weeks, the highest it has been since the firm tracked this metric since 2017.

Fig 4: Chip wait times have progressively lengthened this year


Source: Susquehanna Financial Group, Bloomberg

Fig 5: How are SG tech companies overcoming supply side challenges

	Key supply side challenge(s)	Mitigating measures/ factors
Venture	<ul style="list-style-type: none"> i) Components availability ii) Worker capacity restrictions in Malaysia 	<ul style="list-style-type: none"> i) Applying various strategies, e.g. going to stockists, advanced procurement of components, or using alternative components ii) Speeding up vaccination rates. VMS aims to have 80% of Malaysia-based employees receive 1st dose by 3Q21. iii) Implement additional shifts to get around worker capacity limits in Malaysia
AEM	<ul style="list-style-type: none"> i) Supply chain challenges as a result of Covid-19 situation in Malaysia 	<ul style="list-style-type: none"> i) AEM is working with suppliers to secure adequate parts and components. CEI also has a good supply chain team that helps during supply crunch. AEM has high confidence of being able to deliver customer requirements at least for 2H21. ii) Implement additional shifts to get around worker capacity limits in Malaysia
UMS	<ul style="list-style-type: none"> i) Production capacity, especially on the back of strong of strong demand, and worker capacity restrictions 	<ul style="list-style-type: none"> i) Acquisition of JEP provides capacity for semicon components ii) In Penang, worker capacity limits is now eased to 80% from 60%, which should alleviate some tightness. Implement additional shifts to get around worker capacity limits in Malaysia iii) UMS does not face inventory shortages, as distribution arm Starke is able to ensure sufficiency for UMS' needs.
Frencken	<ul style="list-style-type: none"> i) Sees components shortages impacting supply chains in quite a few end-markets it is exposed to 	<ul style="list-style-type: none"> i) Anticipating semiconductor and automotive revenue to be flat HoH in 2H21, with upside if components shortages ease in these supply chains. ii) Notwithstanding shortages in the supply chain, Frencken sees medical and analytical revenues to be stronger HoH in 2H21.
Aztech	<ul style="list-style-type: none"> i) Components availability ii) Worker capacity restrictions in Malaysia 	<ul style="list-style-type: none"> i) Secure delivery commitments of components for 2H21 requirements ii) Redesign parts and components for certain products iii) Advanced procurement where necessary iv) Transferred some of the allocation from Malaysia to China.

Source: Maybank Kim Eng

3. Semicon takeaways

3.1 AEM - Positive read-across from Intel’s actions

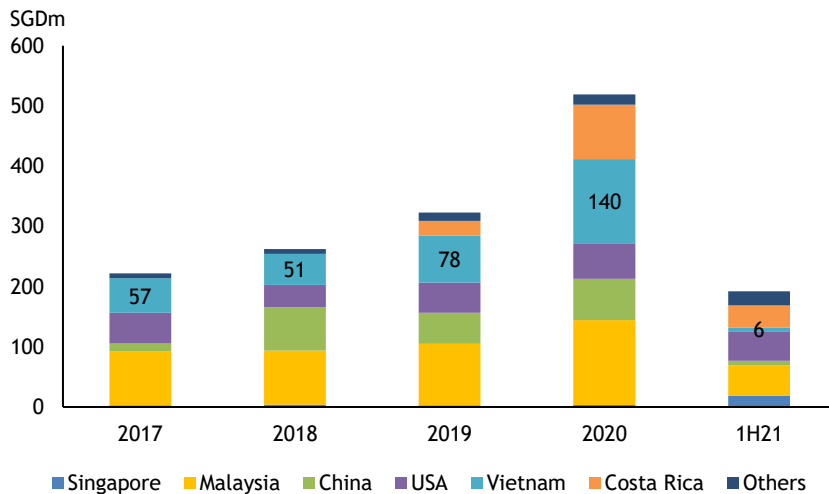
AEM reiterated that new generation tools for Intel will undergo mass production in late 3Q21 through 2022. In that regard, AEM expects 2H21 uptake to be strong following 1H21 transitory weakness. We are excited with AEM’s earnings prospects in 2022, given some of the corroborating factors below.

AEM believes its addressable market will benefit from additional investments in back-end test in the subsequent quarters, following strong capex from front-end players (e.g. Intel/ foundry players). To handle new demands by Intel’s customers and to speed up the ramp for assembly and test operations, Intel is investing USD600m in Costa Rica (up from USD350m in Dec-20). Separately, Buletin Mutiara (Penang government-affiliated news site) announced in Jun-21 that Intel will invest MYR4.4b (USD1.04b) in Penang.

In the 17 months leading up to Jan-21, Intel invested USD475m in Vietnam (assembly and test site). Coincidentally in 2020, AEM’s revenue from Vietnam rose 75% YoY to SGD140.2m, accounting for 27% of revenue. As we believe the proposition of AEM’s equipment remains very relevant to Intel, we do not rule out that the expansion of assembly and test capacity in Costa Rica and Penang are corroborative factors for AEM’s growth in the near term.

Fig 6: AEM’s revenue by geography

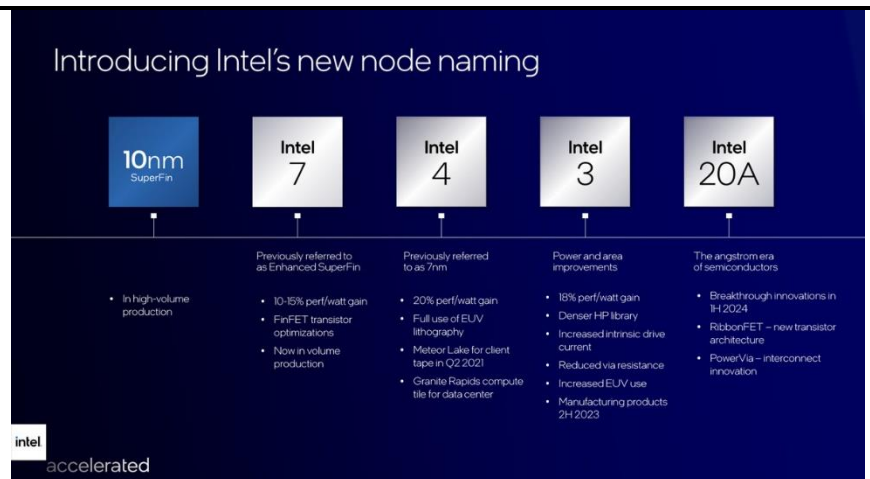
In 2020, amid Intel’s expansion in Vietnam, AEM’s Vietnam revenue rose 75% YoY



Source: Company

In the past, AEM’s growth has also coincided with Intel’s node migrations. For instance, in 2019, AEM’s revenue grew 23% as Intel transitioned to 10nm. The reason why we believe major node migrations at Intel are positive for AEM is because at new nodes, chips require more testing to ensure reliability, until such time that engineers are familiar with the node. Intel’s next major node migration is to Intel 4 (formerly “7nm”), with production set for 2H22 and the first four products planned for 2023 (Meteor Lake for consumer products, and Granite Rapids for data centres).

Fig 7: Intel's technology node roadmap



Source: Intel

In Intel's Jul-21 update on process and packaging innovations, it reiterated its commitment to advanced packaging technologies such as EMIB (embedded multi-die interconnect bridge), and Foveros 3D stack. We see this trend is beneficial for AEM as we do not rule out that in addition to current equipment, new generations of equipment from AEM could be used to address test complexities as a result of advanced packaging technologies. For instance, in the case of 3D logic stack, interconnects must be adequately tested for thermal reliability, and AEM believes it has the best active thermal control capability to accurately and speedily test for thermal reliability. Moreover, Intel's chips are often highly mission critical, with parts per billion requirements to ensure no product failure or recall.

3.2 Takeaways from wafer fab equipment (WFE) customers

ASML believes that the current shortages were in part result of supply chains' cautiousness at start of Covid-19 and sees the current cyclical catch up in chip demand to persist into next year. Meanwhile AMAT sees WFE spending being >USD80b (i.e. growth >30%) in 2021, and expects WFE to be higher in 2022, across logic/foundry, DRAM and NAND segments.

ASML and Applied Materials continue to note strong demand momentum in logic/ foundry. In memory, ASML notes tight supply-demand dynamics, while AMAT cites that DRAM/ NAND inventory levels are below normal/ normal respectively.

Several themes have also been mentioned:

- Long-term demand driven by digital infrastructure buildout: In logic/foundry, strength is observed in both leading and trailing nodes. In trailing nodes, ASML attributes the strength of long-term demand to the buildout of digital infrastructure as 5G and edge computing takes off. For instance, while compute at the edge is typically done on advanced chips, sensing devices that are connected to them are typically manufactured from mature nodes.
- Regionalisation of fab capacity: Amid the realization of over-reliance on North Asian fabs, countries are now pushing to regionalize fab capacity to diversify geographical risks. ASML and AMAT expects spending from such initiatives to take place more towards the 2023-24 timeframe. The implication of this is likely higher demand for semicon

equipment, as the regionalisation of fab capacity will likely create inefficiency in the semiconductor supply chain.

- Capacity expansion by WFE players and supply chain. ASML, AMAT, and Lam are actively expanding capacity. On the back of robust demand, ASML is actively working with the supply chain to increase capacity. We understand some of Frencken's (ASML is customer) capacity addition also caters for semicon. While ASML is expanding capacity in the immediate horizon and for the long-term, it specifies that its capacity expansion plans are focused on long-term demand. ASML also reiterates that it has long-term demand commitments from its customers. This is because tools built by ASML are highly specialized for semiconductor manufacturing, and overcapacity and high inventory levels could result in large obsolescence and losses unless capacity is managed with discipline. Lam Research have shipped out the first equipment built at the new Penang plant, and we continue to think Lam's supply chain buildout may benefit contract manufacturers and precision-engineering players in Malaysia/ Singapore. Meanwhile, UMS notes that the consolidation of JEP provides it access to capacity amid strong order flows from customer Applied Materials.

4. Takeaways from Venture's end-markets

VMS remains optimistic of the demand outlook over the next 12 months. Across seven domains, broad-based strength is observed, with the exception of one (i.e. financial technology). In particular, life-science and medical technology customers are benefitting from strong pharma and biotech end-markets amid the current battle against Covid-19.

VMS highlighted liquid chromatography and mass spectrometry as a key growth area. These were areas where customers like Agilent and Thermo Fisher are launching new products. VMS' customers were also optimistic in test & measurement, networking and communications, advanced industrials and semiconductor-related equipment verticals.

Fig 8: Overview of VMS' end-markets

Ecosystem domain	E.g. customers	Outlook from latest available earnings/ conference transcripts/ media	Customers' mentions of new products (VMS may or may not be involved)	Overall tone
<ul style="list-style-type: none"> Life Science & Instrumentation Medical Technology & Healthcare 	Agilent, Thermo Fisher, Illumina, Waters, PerkinElmer, Keysight, Fortive	<p>Life sciences and med tech - Many companies raised FY21 outlook. Broad-based strength observed across end-markets, with the strongest stemming from pharma and biotech (still driven by Covid-19-related demand). Academic and government, and industrial and applied markets are also robust. End-demand strength is driven by the industry's role in combating the pandemic and strong economic activity globally. Illumina is seeing the highest order volume for Novaseq since launch in 2017 (high-throughput). Demand momentum for mid and low throughput are also very robust. Illumina's NextSeq 2000 mid-throughput platform is enabling new applications in single cell analysis. Customers see conducive environment to launch new products.</p> <p>Instrumentation: Thermo Fisher, PerkinElmer and Keysight notes robust semicon activity. In particular, Keysight expects semicon capacity expansions to last into 2022, and upside to long-term forecasts would be regional fab capacity expansions in Europe and US. Keysight is also a beneficiary of global 5G deployments and the rollout of 5G chipsets, ORAN adoption, 400-gigabit and 800-gigabit ethernet for data centres.</p>	<p>Agilent: Launched 3 InfinityLab Bio - LC Systems (LC stands for liquid chromatography), LC/Q - TOF and LC -TOF solutions. LC/Q - TOF refers to quadropole time of flight liquid chromatography/ mass spectrometry.</p> <p>Thermo Fisher: Thermo Scientific Orbitrap IQX Tribrid mass spectrometer; Thermo Scientific Helios 5EXL wafer dual beam scanning electron microscope (for semicon), Invitrogen Bigfoot Spectral Sorter and Invitrogen Attune CytPix Flow Spectrometer for cell analysis.</p>	Positive
<ul style="list-style-type: none"> RF & Communication 	Broadcom, Marvell, Lumentum	<p>Broadband and networking bookings are strong, from hypercloud and service providers. Broadcom was also a beneficiary of 5G infrastructure rollout globally. Marvell expects strong 2H21 ramp as compared to 1H for its networking business, from own product ramps and increase in 5G adoption in US and other regions. Lumentum has high backlog from strong demand for its products as cloud datacentres transition to 200-gigabit and 400-gigabit speeds. Lumentum's book-to-bill was 1.2x in the most recent quarter.</p>		Positive
<ul style="list-style-type: none"> Financial Technology 	NCR, Ingenico	<p>NCR's 2Q21 standalone revenue rose 11% YoY, and hardware revenue grew 20.5% YoY. Retail hardware was strong in 2Q21, but that was due to a pull-in from a customer for a delivery otherwise slated for 3Q21. ATM hardware faced challenges. As hardware was severely impacted in 2020 amid Covid-19-related disruptions, NCR notes pent up demand.</p>		Cautiously optimistic
<ul style="list-style-type: none"> Consumer / Lifestyle 	Philip Morris	<p>Philip Morris to launch IQOS ILUMA, first in Japan, and subsequently in other markets in 2H21. Over time, Philip Morris intends to transition beyond a nicotine strategy to other inhalable products. Philip Morris believes recent acquisitions Fertin and Vectura would help with these.</p>	IQOS ILUMA	Positive
<ul style="list-style-type: none"> Advanced Industrial Others 	ABB, Honeywell, HP Inc	<p>ABB and Honeywell raised FY21 outlook. and observes that sourcing environment for direct materials and components has been very tight. Honeywell's buildings and infrastructure end-markets are a beneficiary of fiscal stimulus and infrastructure spending plans in the US and globally. Honeywell sees strong 2022 set-up and beyond.</p>		Positive

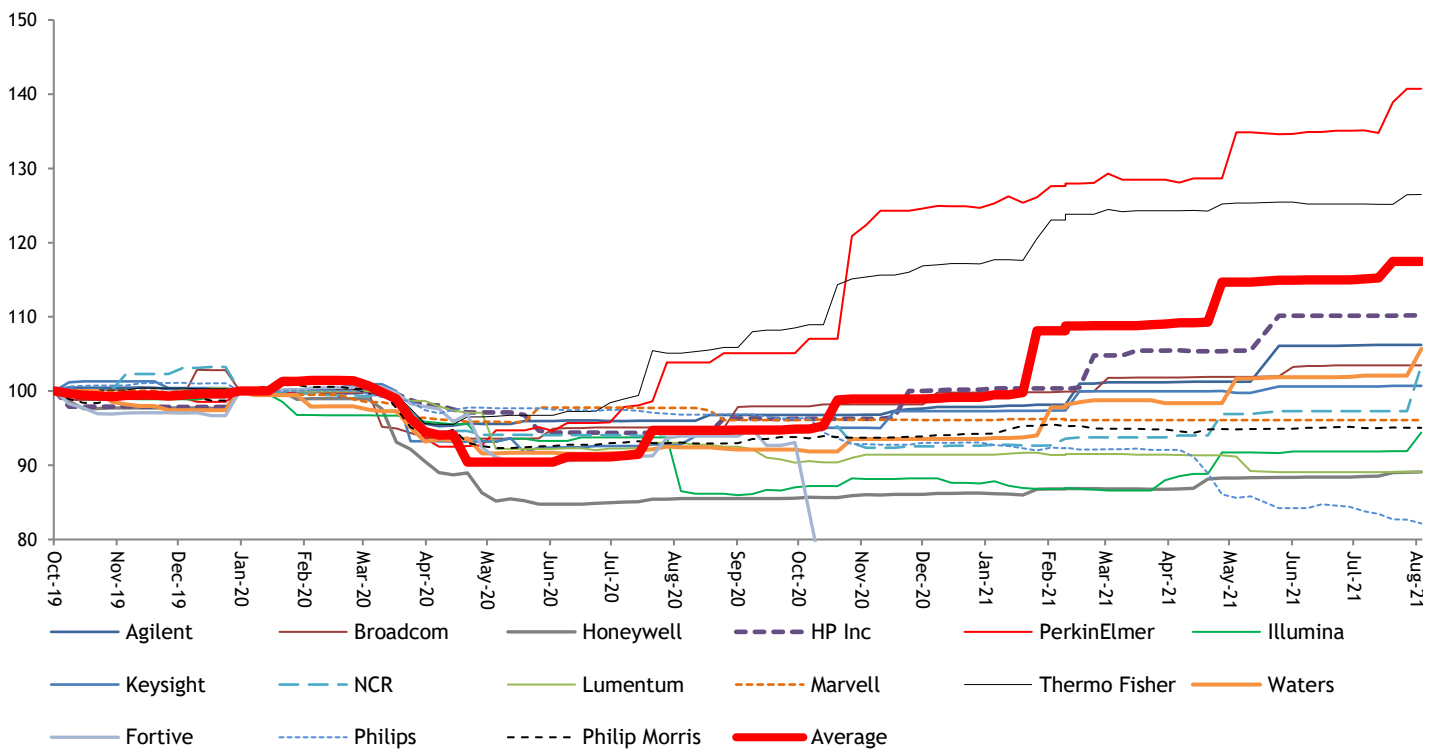
Source: Various companies, Maybank Kim Eng

Fig 9: Sales growth outlook of VMS' customers

	Sales growth (%)		
	CY21E	CY22E	CY23E
Venture (consensus)	7%	8%	4%
ABB	13%	5%	4%
Agilent	18%	7%	6%
Broadcom	14%	6%	4%
Honeywell	8%	8%	6%
Fortive	15%	5%	6%
HP Inc	12%	-1%	-1%
Illumina	33%	11%	14%
Keysight	16%	5%	6%
NCR	17%	12%	3%
Marvell	0%	42%	19%
Lumentum	-1%	0%	11%
Thermo Fisher	12%	0%	6%
Waters	16%	5%	5%
Philip Morris	9%	6%	6%
Royal Philips	-10%	7%	5%
PerkinElmer	21%	-14%	7%
Medtronic	0%	10%	5%
Average ex-VMS	11%	7%	7%

Source: Bloomberg

Fig 10: Consensus FY21E sales (indexed) of Venture's customers



Source: Bloomberg

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