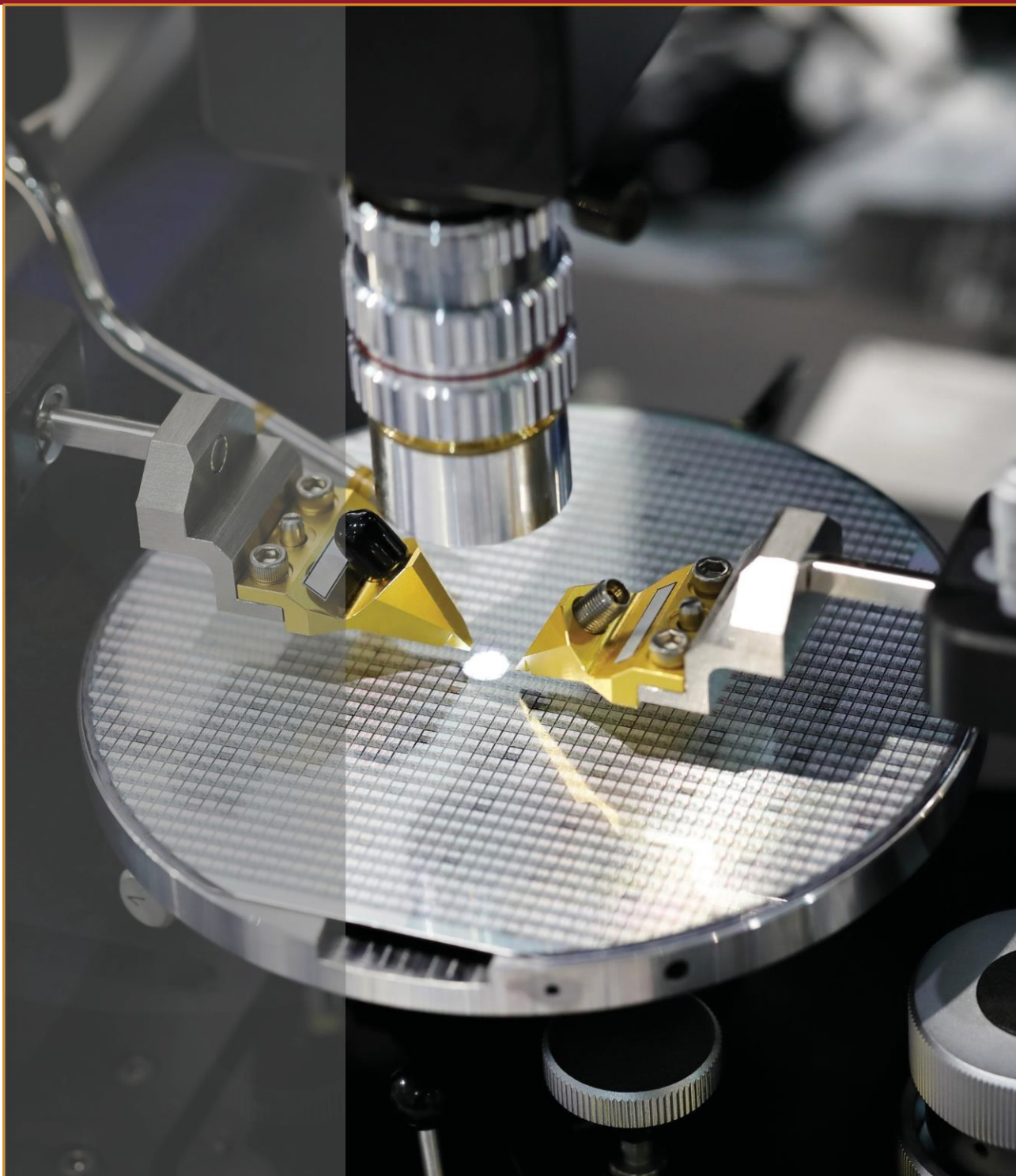


Semiconductors and Advanced Materials

INDUSTRY REPORT

Spring 2021

CREATING
M&A STRATEGIES
FOR BUSINESS OWNERS
SINCE 1956



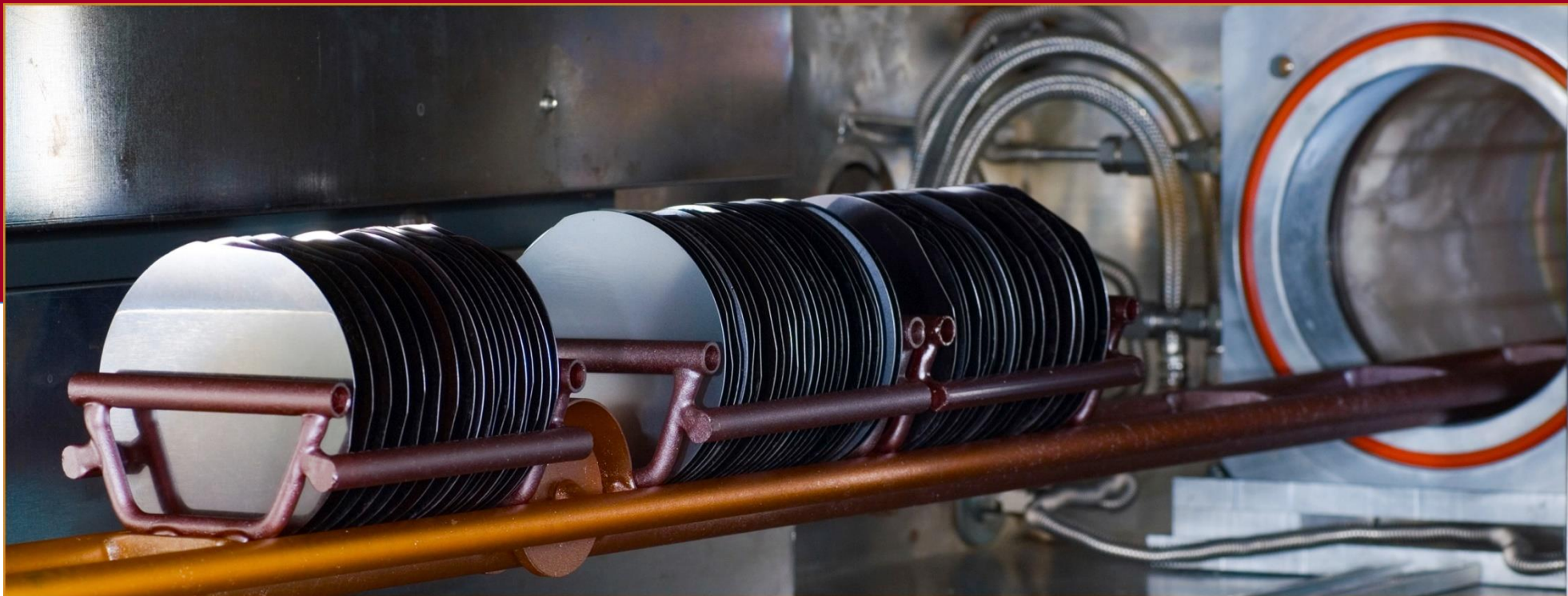


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Market Observations

Market Summary

Semiconductor Market

The semiconductor market registered a revenue growth of 6.5% in 2020 despite the impact of COVID-19 on the global economy as per research published by KPMG. The semiconductor industry will continue to grow due to the mainstream adoption of IoT, 5G and the increasing semiconductor needs of the automotive sector. The industry is expected to register a CAGR of over 6% during 2021-2025 as per research published by ResearchAndMarkets.com. According to the Semiconductor Industry Association, first-quarter sales of \$123.1 billion were 17.8% more than the total from the first quarter of 2020 and 3.6% higher than the total from fourth quarter of 2020. International Data Corporation (IDC) forecasts the semiconductor market to reach \$476 billion in 2021, a 7.7% year-over-year growth rate as the COVID-19 vaccines are circulated and global economies begin to gradually recover.

Public Company Valuations

The CFA Select Semiconductor Index was up 9.6% in the first quarter of 2021, and the 12 months return on the Index was 99.8%. Our index for Semiconductor Equipment as well as Integrated Device and Memory all increased by more than 12% in the first quarter of 2021, with Equipment showing the highest growth with 24.1%. EDA/Engineering Software revenue multiples were exceeding 10x, for some companies - like Ansys and Autodesk - they were significantly higher at 17.5x and 16.1x respectively. Multiples for Semiconductor Equipment were hovering around 6.1x revenue, and 25.1x EBITDA. With revenue multiples of 7.4x and EBITDA multiples of 27.9x, Fabless semiconductor companies were being valued higher than integrated device manufacturers with 5.6x to 17.7x, respectively. There were a few outliers, with Intel having a modest 3.5x revenue multiple and 7.9x EBITDA multiple, whereas NVIDIA comes in with a 19.6x revenue multiple and an EBITDA multiple of 57.3x.

“
The public semiconductor market continued its growth in the first quarter of 2021 after a strong 2020...

Mergers and Acquisitions

The semiconductor market will have major consolidation in 2021 as per research published by Deutsche Bank. A significant increase in the capital spending of the semiconductor industry is forecasted for 2021 as TSMC and Samsung are moving to expand their respective 7nm and 5nm manufacturing capacity. Semiconductor acquisitions in 2020 were driven by large IC companies looking to sharpen their positions in emerging and high-growth market opportunities. This trend is likely to continue in 2021, however the list of potential targets is decreasing as a number of significant mergers happened in 2020.

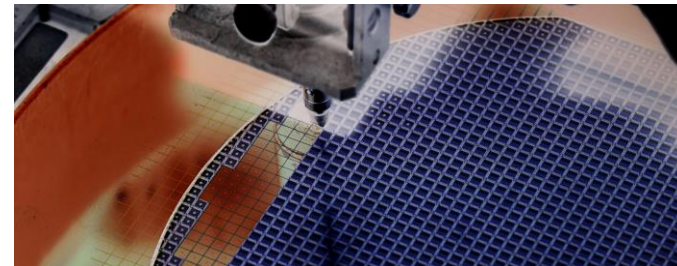
Industry Trends

Growing Wireless and Wired communications Segment

The Wireless and wired communications segment is poised for faster growth in 2021. A delayed recovery from Covid-19 would result in higher growth as remote work and homeschooling will increase the demand for this segment as per research published by Mckinsey. The three converging wireless technologies which are 5G, Wi-Fi 6 and Connected Home Over IP (CHIP) will combine to increase the demand for Smart Home Segment in the future. 5G fixed wireless access (FWA) will bring multi-gigabit speeds, low latency and greater capacity to the Smart Home Segment. Wi-Fi 6 then takes that 5G performance and helps in enhancing the speed of the home network with less congestion. Ultimately, the Connected Home Over IP (CHIP) will provide interoperability, making it easier to expand and refine the home network. As these three technologies converges in 2021, it will be a turning point for Smart Home. There will be more engaging experiences within the home and the network itself will be easier to install and expand.

Emergence of AI Chips

The semiconductor industry is poised for a big technological shift with AI chips. Artificial intelligence (AI) chips are specialized silicon chips, which incorporate AI technology and are used for machine learning. The emergence of AI chips started to have an impact on data centers that are run by cloud providers. Previously, artificial intelligence training and inference tasks were handled by mega data centers. However, with the latest advancements, AI chips can not only work in data centers but also enable edge devices which includes assisted driving vehicles and portable MRI machines. The major players in this field include Intel and Nvidia. AI chips or IP is necessary when low-latency performance is mission-critical, such as in many AR/VR, facial and voice recognition, pattern detection, data filtering and sensor fusion use cases. AI-enabled applications such as computer vision and natural language processing (NLP) are being extensively used across industries. These require high processing speeds and dedicated components for performing complex mathematical computations. Ultimately, this is enabling the growth of AI application-specific integrated circuits (ASICs).



Growth in Automotive Segment

The automotive segment is estimated to have a year-on-year growth of 28% to 36% in 2021 due to the possibility of incentives provided by the government to the car buyers as per research published by Mckinsey. The global automotive semiconductor market was valued at USD 48.13 billion in 2020 and is expected to reach a value of USD 129.17 billion by 2026, at a CAGR of 17.9% from 2021-2026 as per research published by Mordor Intelligence. In 2020, Automotive segment accounted for 20% of the total Texas Instruments revenue. The major factor fueling the demand for electric vehicles is the growing environmental awareness. In addition, vehicles are incorporating vehicle electrical systems that require power diodes and voltage regulators of exceptional reliability. Also, ADAS (Advanced Driver Assistance Systems) sales are expected to increase due to rising demand for safety features, designed to avoid collisions and accidents by offering technologies that alert the driver about potential problems.

Significant News

Global Chip Shortage to Boost Semiconductors' 2021 Performance

Fitch Ratings, March 4, 2021

Heightened demand and a global shortage of microchips will boost cash flow from operations (CFO) for foundries and outsource assembly and testing (OSAT) companies in 2021, but the impact on integrated device manufacturers (IDM) will depend on company-specific factors, says Fitch Ratings. Any rating action on respective companies would depend on the sustainability of improvements in cash generation, M&A activity and shareholder return policies.

[Read More >](#)

Worldwide Semiconductor Revenue Grew 5.4% in 2020 Despite COVID-19 and Further Growth Is Forecast in 2021

IDC, February 2, 2021

Despite the impact of COVID-19 on the global economy, the semiconductor market performed better than expected in 2020, fueled by the growth in cloud computing and demand for devices to support remote work and learning. Worldwide semiconductor revenue grew to \$442 billion in 2020, an increase of 5.4% compared to 2019, according to the Semiconductor Applications Forecaster (SAF) from International Data Corporation (IDC). The DRAM and NAND markets also recovered after a poor 2019, growing 4% and 32.9%, respectively. IDC forecasts the semiconductor market will reach \$476 billion in 2021, a 7.7% year-over-year growth rate as the various COVID-19 vaccines are disseminated and economies begin to open and gradually recover.

[Read More >](#)

Global Semiconductor Shortage Causes Ford and Nissan to Cut Vehicle Production

CNBC, January 8, 2021

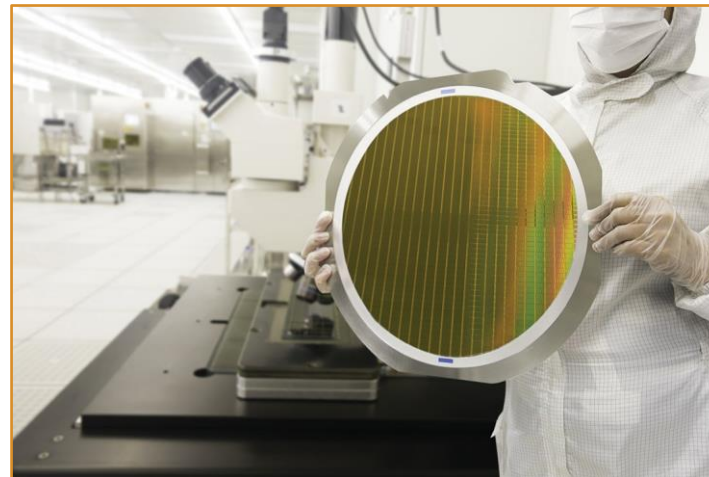
Ford Motor and Nissan Motor confirmed that they are cutting vehicle production at plants in the U.S. and Japan due to a shortage of semiconductors, highlighting a growing concern for the global automotive industry in 2021. Ford will idle an SUV plant in Kentucky next week, while Nissan is reducing production at a plant in Japan. Both companies said they are working closely with suppliers to resolve and monitor the situation for any additional impacts. Automakers and parts suppliers began warning of a semiconductor shortage late last year after demand for vehicles was increasing faster than expected following a two-month shutdown of production plants due to the coronavirus pandemic.

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M&A Metrics

Semiconductor Industry

The number of M&A transactions increased from 18 in Q2 2020 to 26 and 52 in Q3 2020 and Q4 2020, respectively. However, the number of M&A transactions decreased to 33 in Q1 2021. The number of large deals increased in the first quarter of 2021. The number of sub-\$50 million transactions decreased from 40 in Q4 2020 to 22 in Q1 2021, whereas the number of transactions above \$100 million increased from 8 in Q4 2020 to 10 in Q1 2021. The total number of M&A transactions increased 6.45% year on year from 31 in Q1 2020 to 33 in Q1 2021. A potential reason for the urgency in M&A activity in 2020 is due to large IC companies who are looking to sharpen their positions in emerging and high-growth market opportunities, such as embedded machine-learning and AI capabilities, self-driving cars, all-electric vehicles, data centers for cloud-computing services and proliferation of the sensors and systems connected to Internet of Things.



M&A Deal Summary Table | Count by Deal Size over Time

Transaction Value	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Not Disclosed	6	9	14	7	15	6	8	18	9	10	14	12
Under \$10 MM	4	7	7	5	4	6	4	3	2	4	11	5
\$10 - \$25 MM	3	4	1	1	3	1	2	1	3	2	5	3
\$25 - \$50 MM	3	2	2	3	3	2	2	2	3	2	10	2
\$50 - \$100 MM	2	3	3	4	1	2	4	2	NM	1	4	1
\$100 - \$500 MM	3	5	6	2	2	1	5	5	1	3	4	3
\$500 MM+	1	3	1	3	3	1	1	NM	NM	4	4	7
Total Transactions	22	33	34	25	31	19	26	26	18	26	52	33

Source: FactSet

Industry Metrics

Industry Financial Data and Ratios

NAICs 334413 - Semiconductor and Related Device Manufacturing

Financial Metric	Last 12 Mo	2020	2019
Current Ratio	2.56	2.49	3.17
Gross Profit Margin	42.25%	43.71%	41.37%
Net Profit Margin	-10.76%	9.39%	1.28%
Accounts Receivable Days	50.86	55.59	49.73
Accounts Payable Days	47.2	45.82	43.95
Debt-to-Equity Ratio	0.76	1.06	1.21
Return on Equity	24.83%	22.96%	17.15%
Sales per Employee	--	--	--
Profit per Employee	--	--	--
Sales Growth	-5.03%	-4.52%	3.25%
Profit Growth	27.39%	18.42%	-23.40%

NAICs 511210 - Software Publishers

Financial Metric	Last 12 Mo	2020	2019
Current Ratio	3.37	3.47	2.37
Gross Profit Margin	69.72%	72.79%	76.82%
Net Profit Margin	2.18%	-0.18%	-3.59%
Accounts Receivable Days	58.3	62.41	67.89
Accounts Payable Days	92.02	95.01	109.42
Debt-to-Equity Ratio	1.71	1.68	2.32
Return on Equity	13.08%	11.99%	24.13%
Sales per Employee	--	--	\$284,257
Profit per Employee	--	--	\$52,775
Sales Growth	15.10%	16.79%	19.09%
Profit Growth	11.48%	21.20%	19.42%

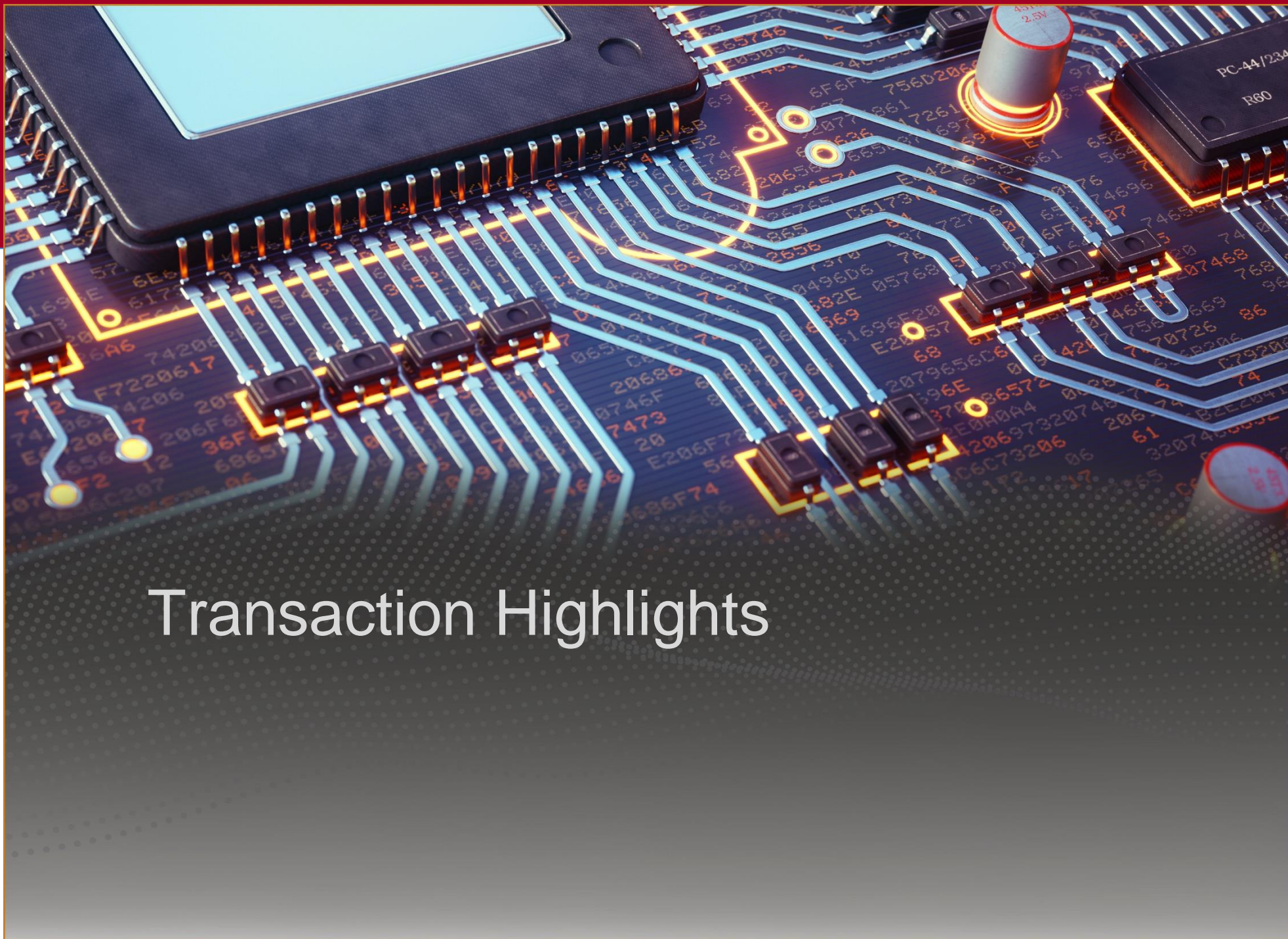
Source: Profit Cents

NAICs 333242 - Semiconductor Machinery Manufacturing

Financial Metric	Last 12 Mo	2020	2019
Current Ratio	1.89	2.53	4.48
Gross Profit Margin	40.66%	44.44%	43.81%
Net Profit Margin	11.97%	17.50%	16.24%
Accounts Receivable Days	42.79	43	57.4
Accounts Payable Days	43.87	32.41	47.59
Debt-to-Equity Ratio	1.05	1.35	0.9
Return on Equity	27.65%	28.84%	30.19%
Sales per Employee	--	--	--
Profit per Employee	--	--	--
Sales Growth	--	--	-7.15%
Profit Growth	--	--	-57.09%

NAICs 334515 - Instrument Mfg for Measuring & Testing Electricity

Financial Metric	Last 12 Mo	2020	2019
Current Ratio	2.08	2.05	1.97
Gross Profit Margin	90.32%	87.09%	82.98%
Net Profit Margin	17.88%	15.91%	9.80%
Accounts Receivable Days	48.44	51.79	42.17
Accounts Payable Days	22.27	23.11	24.35
Debt-to-Equity Ratio	0.54	0.6	1.19
Return on Equity	19.06%	18.86%	12.09%
Sales per Employee	--	--	--
Profit per Employee	--	--	--
Sales Growth	4.94%	4.94%	-24.47%
Profit Growth	168.23%	168.23%	-28.30%



Transaction Highlights

Notable Transactions

SC Health

In March, **SC Health Corp** entered into a definitive agreement to acquire **Rockley Photonics Ltd** for GBP832.9 million (US\$1.2 billion) in stock. Under the terms of transaction, SC Health Corp will issue 114,811,411.3 shares to shareholders of Rockley Photonics Ltd. The transaction expands Rockley Photonics Ltd's health and monitoring services. Rockley Photonics Ltd is located in Oxford, London & South East, United Kingdom and manufactures integrated optics, cmos electronics, software and computer networking with silicon photonics.

Rockley
PHOTONICS

CANTOR
Fitzgerald

In February, **CF Finance Acquisition Corp III** amended its definitive merger agreement to acquire **AEye Inc** for a consideration of US\$1.52 billion in stock, via reverse takeover. Following the transaction, combined company will be operated as AEye Holdings, Inc and is expected to be publicly listed on Nasdaq. AEye Inc is located in Dublin, California, United States and develops vision hardware, software and algorithms that act as the eyes and visual cortex of autonomous vehicles.

AEYE

II-VI

In February, **II-VI Inc** entered into a definitive agreement to acquire **Coherent Inc** for US\$6.9 billion in cash and stock. Under the terms of the agreement, II-VI Inc will pay US\$220 in cash and issue 0.91 shares for every share in Coherent Inc. Upon completion, Coherent Inc shareholders will hold 20.5% stake in the combined company. Founded in 1966, Coherent Inc is located in Santa Clara, California, United States and manufactures and supplies laser diodes and other laser equipment.

COHERENT

RENESAS

In February, **Renesas Electronics Corp** entered into an agreement to acquire **Dialog Semiconductor Plc** for GBP4.3 billion (US\$5.9 billion) in cash, via scheme of arrangement. Under the terms of transaction, Renesas Electronics Corp would pay GBP59.1 (US\$81.17) cash per share sought. The transaction represents a 20.3% premium to the closing price of Dialog Semiconductor Plc on February 5, 2021. The acquisition would strengthen product offerings and embedded solutions of both the companies. Dialog Semiconductor Plc is located in Reading, Berkshire, the United Kingdom and designs, develops and supplies customized integrated circuit products.

dialog
SEMICONDUCTOR

ACEV

In January, **ACE Convergence Acquisition Corp** entered into a definitive agreement to acquire **Achronix Semiconductor Corp** for US\$2 billion in cash, stock and contingent payout, via reverse takeover. Under the terms of transaction, ACE Convergence Acquisition Corp will pay US\$50 million in cash, issue 169,355,555 shares and will issue additional 3,500,000 common shares in contingent payout to the shareholders of Achronix Semiconductor Corp. Achronix Semiconductor Corp is located in Santa Clara, California, United States and offers high-density and high-performance application-targeted field programmable gate arrays.

Achronix
Data Acceleration

Note: SC Health Corp's acquisition of Rockley Photonics Ltd, CF Finance Acquisition Corp III's acquisition of AEye Inc and ACE Convergence Acquisition Corp's acquisition of Achronix Semiconductor Corp are all SPAC mergers.

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Select M&A Transactions

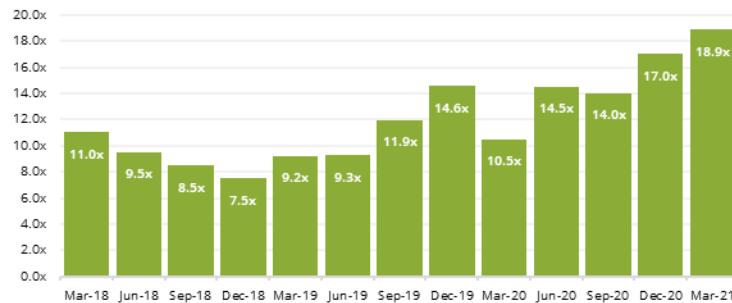
Date	Target Name	Acquirer Name	Enterprise Value(MM)	Revenue	EBITDA
03-31-21	SilTerra Malaysia Sdn. Bhd.	Dagang NeXchange Bhd.; Beijing Shengshi Hongming Investment Fund Management Co. Ltd.; Silterra Malaysia Sdn. Bhd. /Private Group/	66	-	-
03-29-21	Beijing Kehua Microelectronic Material Co., Ltd.	Shanghai Tongcheng Electronic Materials Co., Ltd.	99	14	-
03-26-21	MagnaChip Semiconductor Corp.	Wise Road Capital Ltd.	1,150	506	42
03-19-21	Rockley Photonics Ltd.	SC Health Corp.	1,161	-	-
03-01-21	International Test Solutions, Inc.	CMC Materials, Inc.	125	-	-
02-24-21	Kingston Digital Europe Co. LLP /HyperX Gaming Division/	HP, Inc.	425	-	-
02-17-21	AEye, Inc.	CF Finance Acquisition Corp. III	1,520	-	-
02-12-21	Coherent, Inc.	II-VI, Inc.	6,873	1,234	114
02-07-21	Dialog Semiconductor Plc	Renesas Electronics Corp.	5,396	1,376	250
01-07-21	Achronix Semiconductor Corp.	ACE Convergence Acquisition Corp.	2,071	-	-
(\$ in millions) Source: Factset					



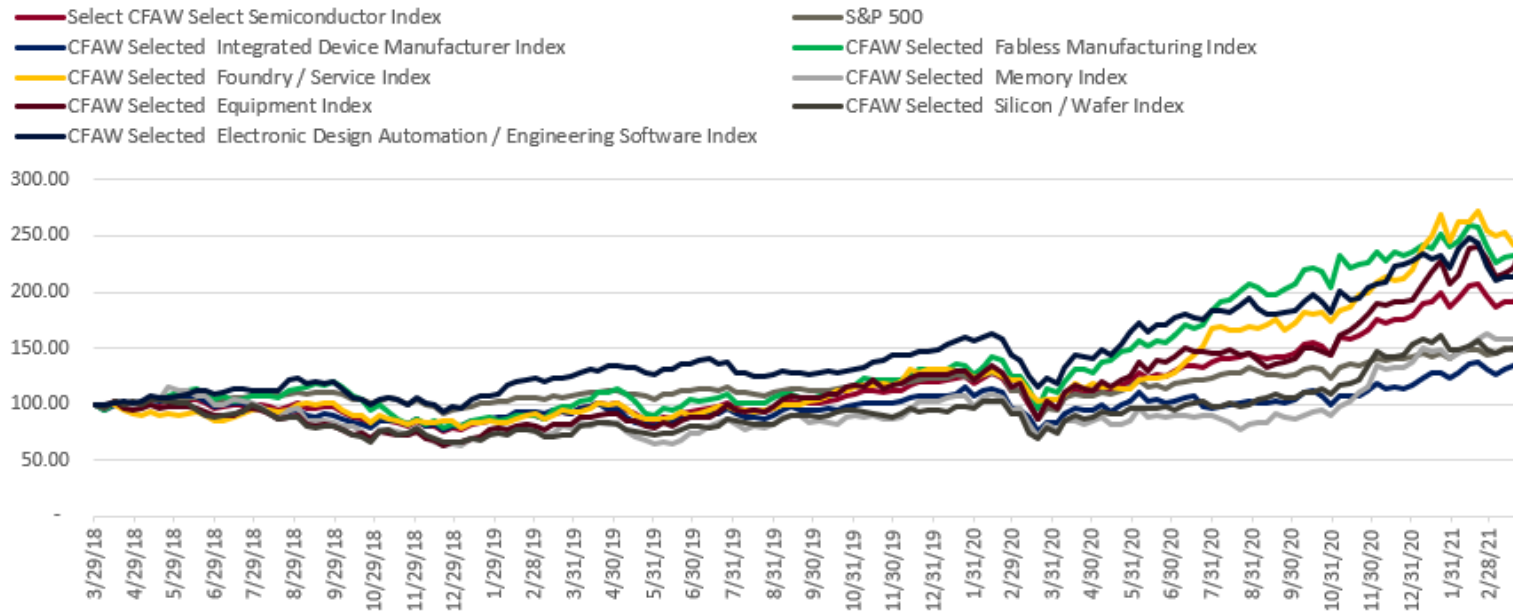
Public Companies

Industry Performance

CFAW Select Semiconductor Index | Median EBITDA Multiples



CFAW Select Semiconductor Index | Median Revenue Multiples

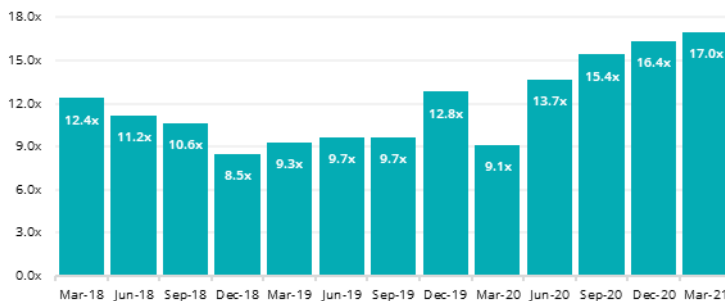


Source: FactSet

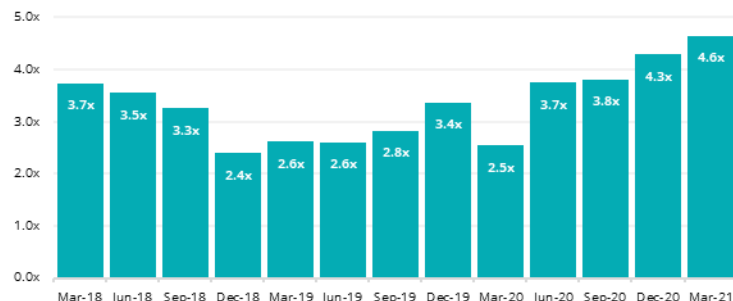
Public Comparables

Integrated Device Manufacturer

Integrated Device Manufacturer | Median EBITDA Multiples



Integrated Device Manufacturer | Median Revenue Multiples



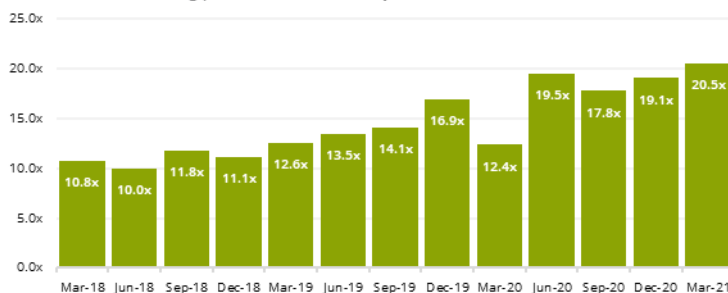
Company \$USD in Millions	Share Price	Shares O/S	Market Cap	Enterprise Value	Revenues (LTM)	EBITDA (LTM)	Enterprise Value /	
							Revenues	EBITDA
ams AG	\$20.02	274	\$5,491	\$7,206	\$3,051	\$655	2.4x	11.0x
Analog Devices, Inc.	\$155.08	369	\$57,208	\$61,307	\$5,858	\$2,556	10.5x	24.0x
Infineon Technologies AG	\$42.49	1,306	\$55,492	\$61,237	\$10,581	\$2,248	5.8x	27.2x
Intel Corporation	\$64.00	4,038	\$258,432	\$271,919	\$77,712	\$34,465	3.5x	7.9x
Microchip Technology Incorporated	\$155.22	269	\$41,795	\$50,603	\$5,298	\$2,053	9.6x	24.6x
NXP Semiconductors NV	\$201.34	276	\$55,520	\$62,249	\$9,158	\$2,694	6.8x	23.1x
ON Semiconductor Corporation	\$41.61	427	\$17,768	\$19,714	\$5,459	\$1,178	3.6x	16.7x
Qorvo, Inc.	\$182.70	113	\$20,693	\$21,208	\$3,730	\$1,230	5.7x	17.2x
Renesas Electronics Corporation	\$10.86	1,733	\$18,820	\$22,587	\$6,703	\$1,976	3.4x	11.4x
Rohm Co., Ltd.	\$97.83	103	\$10,076	\$7,141	\$3,254	\$650	2.2x	11.0x
STMicroelectronics NV	\$38.19	911	\$34,770	\$33,729	\$11,004	\$2,171	3.1x	15.5x
Texas Instruments Incorporated	\$188.99	924	\$174,537	\$174,048	\$15,421	\$7,593	11.3x	22.9x
Mean							5.6x	17.7x
Median							4.6x	17.0x

Source: FactSet

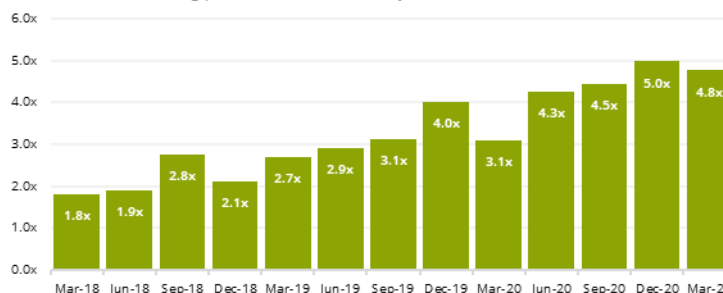
Public Comparables

Fabless Manufacturing

Fabless Manufacturing | Median EBITDA Multiples



Fabless Manufacturing | Median Revenue Multiples



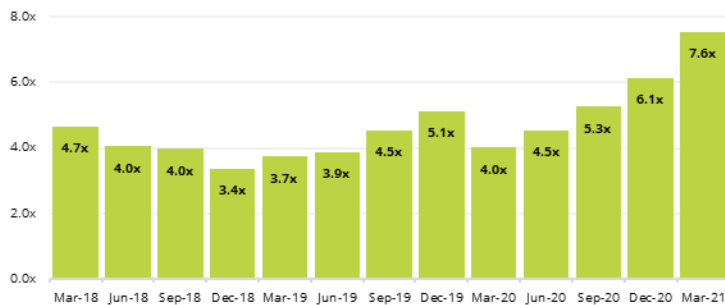
Company \$USD in Millions	Share Price	Shares O/S	Market Cap	Enterprise Value	Revenues (LTM)	EBITDA (LTM)	Enterprise Value /	
							Revenues	EBITDA
Advanced Micro Devices, Inc.	\$78.50	1,215	\$95,379	\$92,813	\$11,422	\$2,233	8.1x	41.6x
Broadcom Inc.	\$463.66	408	\$189,313	\$221,719	\$24,685	\$12,107	9.0x	18.3x
Cirrus Logic, Inc.	\$84.79	58	\$4,922	\$4,571	\$1,355	\$285	3.4x	16.0x
Dialog Semiconductor plc	\$75.48	77	\$5,788	\$4,900	\$1,376	\$250	3.6x	19.6x
Marvell Technology, Inc.	\$48.98	680	\$33,287	\$33,820	\$2,969	\$599	11.4x	56.4x
MediaTek Inc	\$33.96	1,590	\$54,006	\$47,213	\$10,941	\$1,804	4.3x	26.2x
Novatek Microelectronics Corp.	\$20.15	609	\$12,263	\$11,304	\$3,090	\$706	3.7x	16.0x
NVIDIA Corporation	\$533.93	622	\$332,309	\$327,194	\$16,675	\$5,714	19.6x	57.3x
Qualcomm Inc	\$132.59	1,128	\$149,562	\$153,903	\$29,409	\$10,374	5.2x	14.8x
Realtek Semiconductor Corp	\$17.31	511	\$8,842	\$7,744	\$2,641	\$361	2.9x	21.5x
Skyworks Solutions, Inc.	\$183.48	165	\$30,291	\$29,423	\$4,375	\$1,729	6.7x	17.0x
Mean							7.1x	27.7x
Median							5.2x	19.6x

Source: FactSet

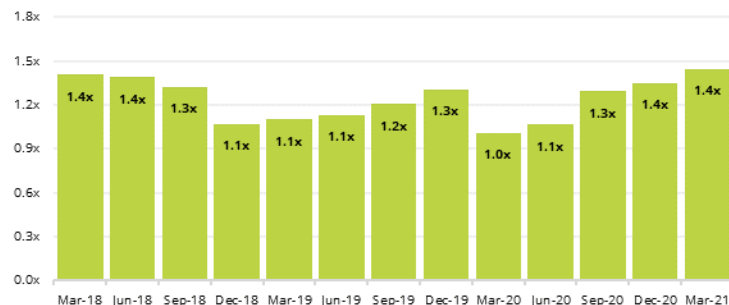
Public Comparables

Foundry / Service

Foundry / Service | Median EBITDA Multiples



Foundry / Service | Median Revenue Multiples



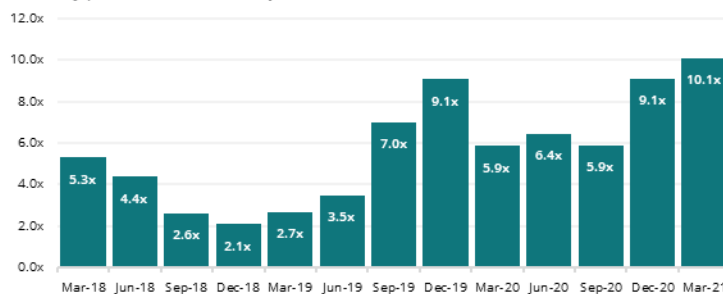
Company \$USD in Millions	Share Price	Shares O/S	Market Cap	Enterprise Value	Revenues (LTM)	EBITDA (LTM)	Enterprise Value /	
							Revenues	EBITDA
Amkor Technology, Inc.	\$23.71	244	\$5,790	\$6,232	\$5,224	\$1,060	1.2x	5.9x
ASE Technology Holding Co., Ltd.	\$3.77	4,379	\$16,500	\$22,089	\$16,199	\$2,925	1.4x	7.6x
Powertech Technology Inc.	\$3.70	779	\$2,881	\$3,743	\$2,587	\$833	1.4x	4.5x
Taiwan Semiconductor Manufacturing Co., Ltd.	\$20.57	25,930	\$533,457	\$518,473	\$45,483	\$30,490	11.4x	17.0x
United Microelectronics Corp.	\$1.76	12,422	\$21,855	\$20,029	\$6,276	\$2,345	3.2x	8.5x
Mean							3.7x	8.7x
Median							1.4x	7.6x

Source: FactSet

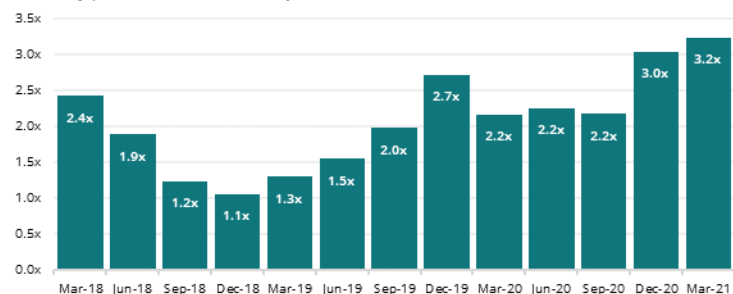
Public Comparables

Memory

Memory | Median EBITDA Multiples



Memory | Median Revenue Multiples

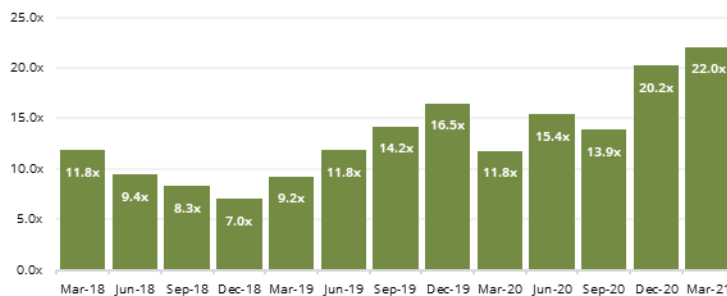


Company \$USD in Millions	Share Price	Shares O/S	Market Cap	Enterprise Value	Revenues (LTM)	EBITDA (LTM)	Enterprise Value /	
							Revenues	EBITDA
Macronix International Co., Ltd.	\$1.55	1,856	\$2,885	\$3,019	\$1,382	\$340	2.2x	8.9x
Micron Technology, Inc.	\$88.21	1,121	\$98,920	\$98,848	\$23,503	\$9,799	4.2x	10.1x
Nanya Technology Corporation	\$3.22	3,096	\$9,973	\$8,132	\$2,072	\$777	3.9x	10.5x
SK hynix Inc	\$117.08	728	\$85,231	\$87,414	\$27,037	\$12,542	3.2x	7.0x
Winbond Electronics Corp.	\$1.03	3,980	\$4,115	\$4,655	\$2,061	\$373	2.3x	12.5x
Mean							3.2x	9.8x
Median							3.2x	10.1x

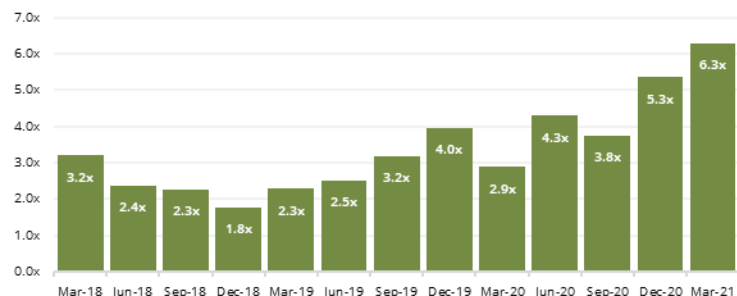
Public Comparables

Equipment

Equipment | Median EBITDA Multiples



Equipment | Median Revenue Multiples



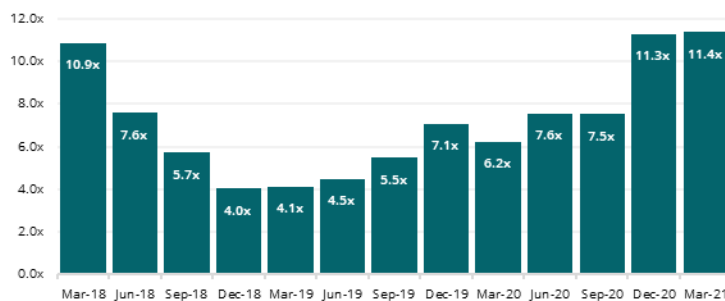
Company \$USD in Millions	Share Price	Shares O/S	Market Cap	Enterprise Value	Revenues (LTM)	EBITDA (LTM)	Enterprise Value /	
							Revenues	EBITDA
Advantest Corp.	\$87.60	199.6	\$17,482	\$15,965	\$2,720	\$634	5.9x	25.2x
Applied Materials, Inc.	\$133.60	917.7	\$122,599	\$121,675	\$18,200	\$5,125	6.7x	23.7x
ASM International N.V.	\$291.47	49.8	\$14,515	\$13,583	\$1,628	\$515	8.3x	26.4x
ASM Pacific Technology Limited	\$12.74	410.8	\$5,234	\$5,251	\$1,895	\$232	2.8x	22.6x
ASML Holding NV	\$607.63	419.5	\$254,899	\$250,031	\$18,530	\$6,596	13.5x	37.9x
Coherent, Inc.	\$252.89	24.5	\$6,187	\$6,179	\$1,234	\$114	5.0x	54.4x
Disco Corporation	\$314.48	36.1	\$11,340	\$10,347	\$1,558	\$507	6.6x	20.4x
IPG Photonics Corporation	\$210.94	53.6	\$11,315	\$9,942	\$1,201	\$326	8.3x	30.5x
KLA Corporation	\$330.40	153.3	\$50,644	\$51,769	\$6,454	\$2,593	8.0x	20.0x
Lam Research Corporation	\$595.24	142.6	\$84,893	\$84,916	\$13,273	\$4,216	6.4x	20.1x
SCREEN Holdings Co., Ltd	\$88.14	50.8	\$4,477	\$4,152	\$2,938	\$258	1.4x	16.1x
Teradyne, Inc.	\$121.68	166.6	\$20,268	\$19,304	\$3,121	\$1,024	6.2x	18.9x
Tokyo Electron Ltd.	\$423.44	157.2	\$66,569	\$63,047	\$12,019	\$2,935	5.2x	21.5x
Ultra Clean Holdings, Inc.	\$58.04	43.8	\$2,542	\$2,423	\$1,399	\$168	1.7x	14.4x
Mean							6.1x	25.1x
Median							6.3x	22.0x

Source: FactSet

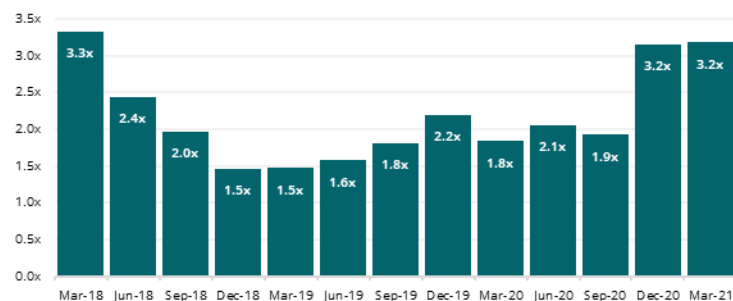
Public Comparables

Silicon / Wafer

Silicon / Wafer | Median EBITDA Multiples



Silicon / Wafer | Median Revenue Multiples



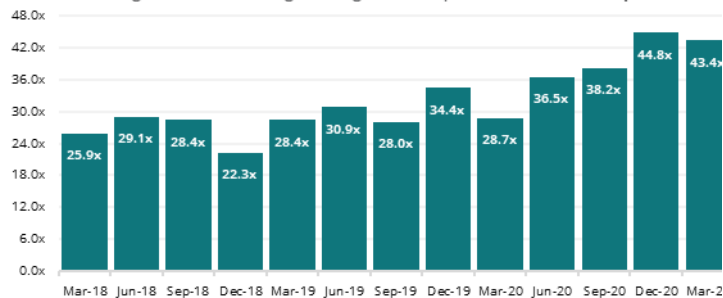
Company \$USD in Millions	Share Price	Shares O/S	Market Cap	Enterprise Value	Revenues (LTM)	EBITDA (LTM)	Enterprise Value /	
							Revenues	EBITDA
Elkem ASA	\$4.36	639	\$2,787	\$3,442	\$2,792	\$358	1.2x	9.6x
GlobalWafers Co., Ltd.	\$26.29	437	\$11,493	\$10,815	\$1,880	\$707	5.8x	15.3x
Shin-Etsu Chemical Co Ltd	\$170.10	417	\$70,874	\$60,449	\$13,833	\$4,832	4.4x	12.5x
Siltronic AG	\$158.67	30	\$4,760	\$4,373	\$1,376	\$384	3.2x	11.4x
Sino-American Silicon Products Inc.	\$5.92	586	\$3,472	\$3,630	\$2,085	\$716	1.7x	5.1x
Soitec SA	\$204.85	33	\$6,797	\$6,823	\$664	\$159	10.3x	42.8x
SUMCO Corporation	\$22.86	290	\$6,633	\$7,691	\$2,729	\$793	2.8x	9.7x
Mean							4.2x	15.2x
Median							3.2x	11.4x

Source: FactSet

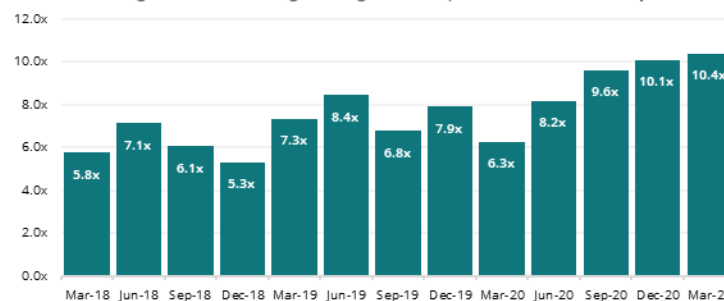
Public Comparables

Electronic Design Automation / Engineering Software

Electronic Design Automation / Engineering Software | Median EBITDA Multiples



Electronic Design Automation / Engineering Software | Median Revenue Multiples



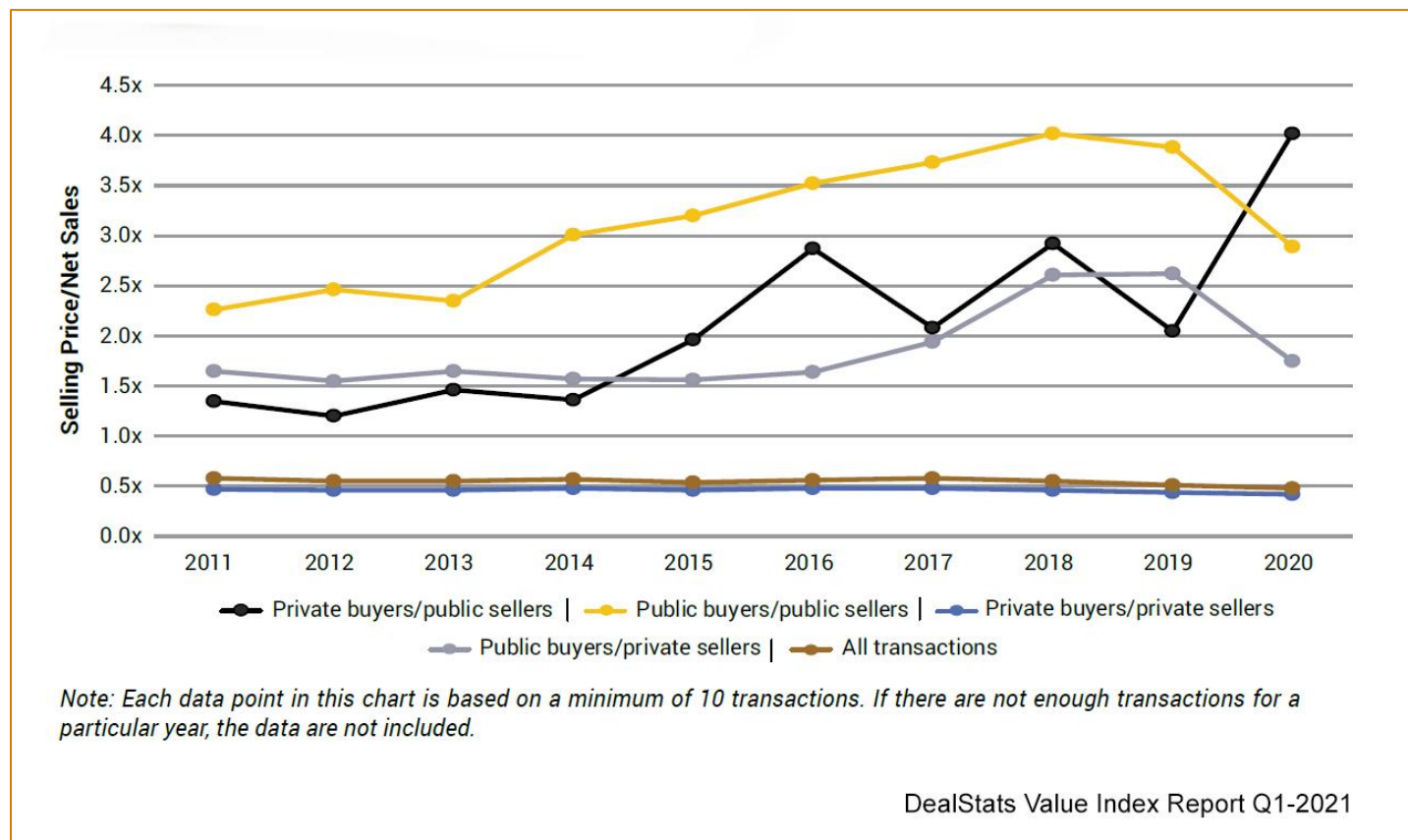
Company \$USD in Millions	Share Price	Shares O/S	Market Cap	Enterprise Value	Revenues (LTM)	EBITDA (LTM)	Enterprise Value /	
							Revenues	EBITDA
ANSYS, Inc.	\$339.56	87.1	\$29,588	\$29,426	\$1,681	\$608	17.5x	48.4x
Autodesk, Inc.	\$277.15	219.6	\$60,860	\$61,107	\$3,791	\$763	16.1x	80.1x
AVEVA Group plc	\$47.21	301.2	\$14,219	\$9,487	\$987	\$268	9.6x	35.4x
Cadence Design Systems, Inc.	\$136.99	278.3	\$38,120	\$37,778	\$2,801	\$871	13.5x	43.4x
Dassault Systemes SA	\$214.37	265.4	\$56,900	\$57,576	\$5,233	\$1,612	11.0x	35.7x
PDF Solutions, Inc.	\$17.78	36.9	\$657	\$515	\$88	(\$9)	5.8x	NM
PTC Inc.	\$137.65	116.8	\$16,079	\$17,463	\$1,531	\$375	11.4x	46.5x
Rambus Inc.	\$19.44	112.5	\$2,187	\$1,850	\$243	\$3	7.6x	649.9x
Synopsys, Inc.	\$247.78	152.4	\$37,755	\$37,391	\$3,820	\$918	9.8x	40.7x
Zuken Inc.	\$25.57	23.3	\$595	\$339	\$267	\$34	1.3x	10.0x
Mean							10.4x	110.0x
Median							10.4x	43.4x

Public Vs. Private Comparables

Valuation Premiums Can Be Considerable

Regardless of industry, publicly traded companies often trade at premium valuations to privately held companies. This is reflected in M&A transactions and can lead to unrealistic value expectations for some business owners. The chart below illustrates this variance and shows that the variance has been both long term and growing.

Transactions between private buyer and private seller tend to be small by comparison and thus do not benefit from a “size” premium that is associated with transactions in general. While this chart does not breakout private equity transactions, our analysis indicates those transactions usually fall between public and private and move closer to public as size increases.





CFA Overview

About CFA

Who We Are / What We Do

Corporate Finance Associates (CFA) is an independent international investment banking firm serving middle-market businesses. For over 60 years Corporate Finance Associates has been advocating on behalf of business owners who are restructuring a company, either through divestiture, merger, acquisition or recapitalization. Combining the knowledge and leverage of a larger bank with the customer focused detail of a boutique firm, from inception to completion, our senior principals provide hands-on expertise to clients buying, selling or recapitalizing a business.

This Semiconductors and Advanced Materials Industry Practice Group was established to draw on the experience of CFA advisors, many of whom as former business owners and CEOs, have first-hand knowledge and have completed many transactions in this industry. Working with your local CFA representative, you can be sure that the collective wealth of knowledge is available to every CFA client.



Sell-Side Advisory

Whether as a divestiture strategy or a recapitalization strategy selling all or part of a business requires equal parts creative thinking, critical analysis, expert advice, sound planning and flawless execution. Having the right team of investment banking professionals working for you is critical to ensure success.



Capital Markets

Our commitment to remaining independent from any investment or lending affiliates ensures that we deliver unbiased guidance. It also promotes maximum competition among lending sources, helping to fully leverage value for our clients. Our role is to help you raise the type of capital that best fits your needs.



Buy-Side Advisory

Growth through acquisition is a complex process. It involves strategy, planning, critical analysis, coordination and negotiation. When you want to take advantage of the fast growth offered by a consolidation or roll-up, CFA's broad reach, sources of financing and efficient closings can help you achieve your business growth goals.



Financial Advisory

Now that you have made the decision to raise capital for your business, choosing the right investment banker is critical. Whether you are buying out a partner, financing an acquisition or seeking growth capital, CFA is the right choice to help you achieve your financing goals.



Exit Planning

Every business will ultimately undergo a transfer via sale or merger, a charitable donation, a transfer to a child or relative or even bankruptcy, liquidation or death. Every ownership transfer carries with it a unique set of consequences and the best consequences usually begin with a clearly defined exit plan.



Business Valuation

"What is my business worth" is a question we often hear from business owners contemplating a business sale, merger or recapitalization. Answering this question depends on many factors, including the business valuation methods that are employed in the calculation.

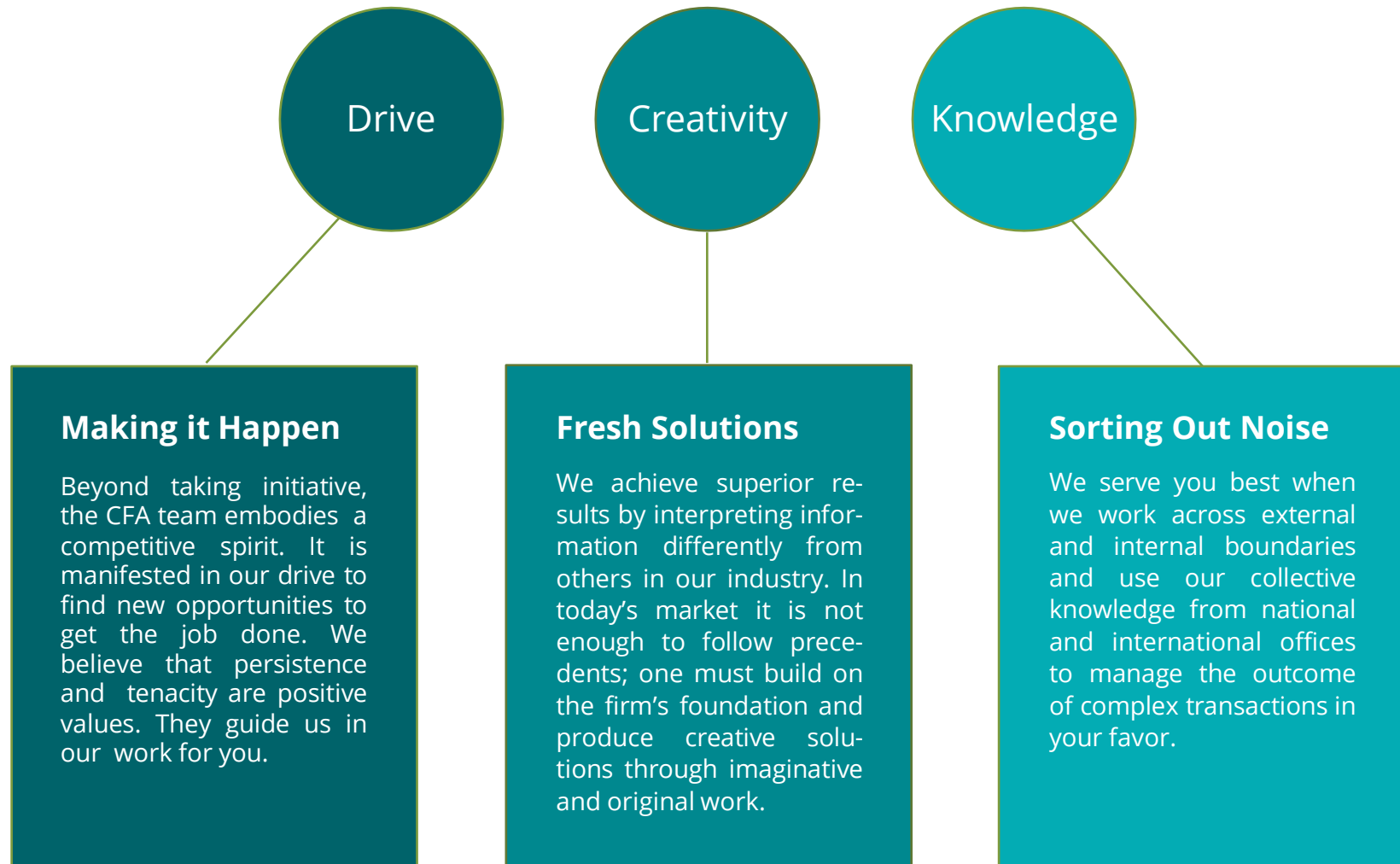
Local Service, Global Reach

Where We Are

With offices across the USA and in Mexico, India, Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Portugal, Switzerland and the United Kingdom providing middle-market companies with a wide range of M&A, financial advisory services and access to capital resources.

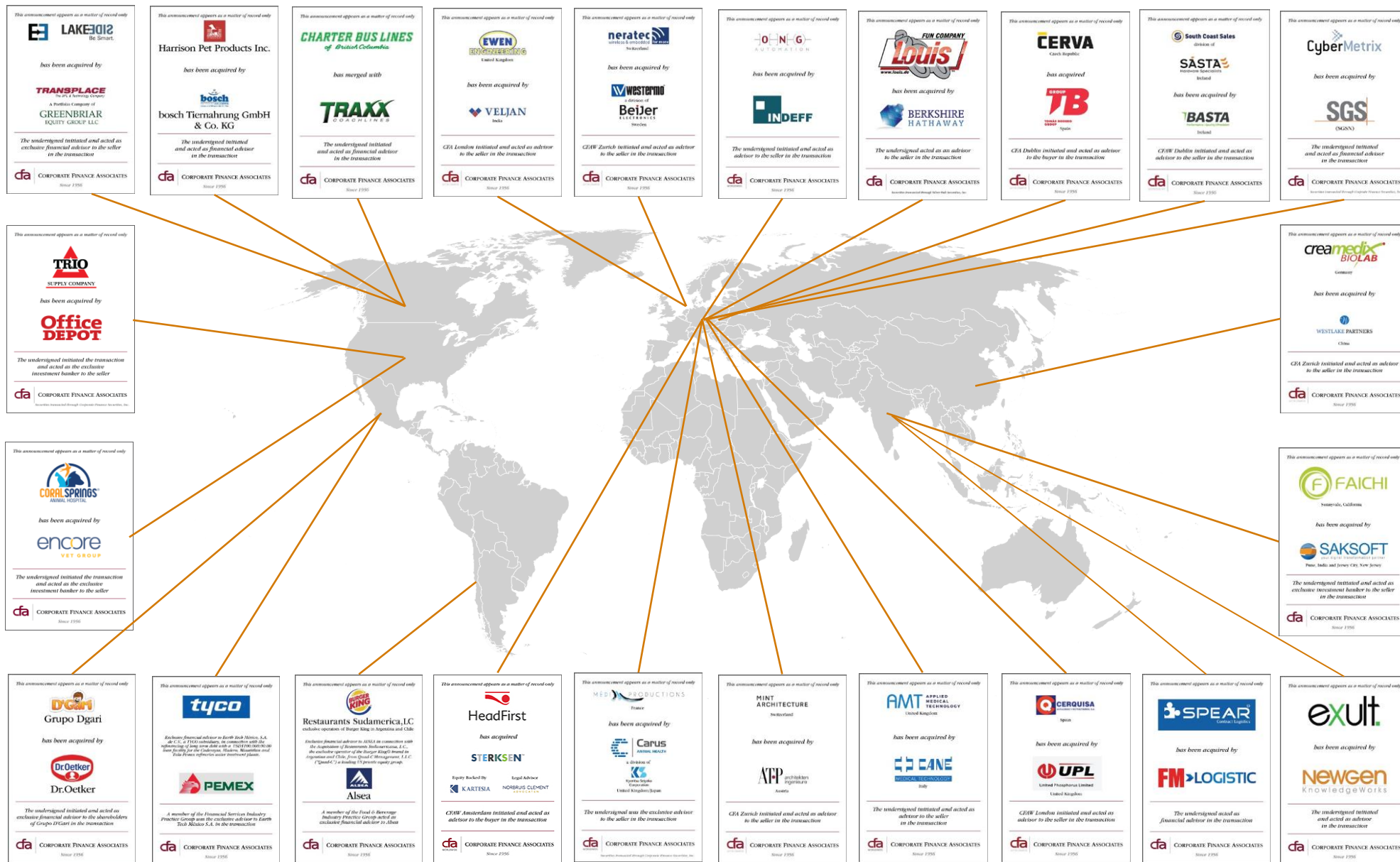


Delivering Results



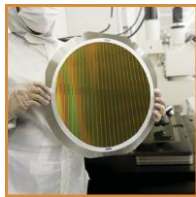
Founded in 1956 • 70 Managing Directors • 37 Offices Worldwide • \$10+ Billion in M&A Transactions

Worldwide Transactions



Industry Practice Groups

Semiconductors and Advanced Materials



The Semiconductors and Advanced Materials practice group is comprised of accomplished dealmakers with extensive experience in advising both public and private companies in the industry. These dealmakers offer expert service in acquisitions, divestitures, financing, and strategic planning to a wide range of companies operating in multiple subsectors including:

- Semiconductor Equipment
- Fabless Semiconductor Companies
- Integrated Device Manufacturers
- Electronic Design Automation
- Advanced Materials, Chemicals and Consumables
- Micro-Electro-Mechanical Systems (MEMS)
- Photonics
- Discrete Devices
- Renewable Energy Technology

Whether you want to acquire, merge, sell, or finance, let CFA's industry knowledge, international resources and proven dealmaking skills work for you. We research, identify, qualify, advocate, negotiate and help steer you through the mine fields of due diligence to maximize your value and secure your objective.

Agriculture
Aerospace/Defense/Government
Business Services
Commercial Real Estate
Consumer Retail
Energy
Engineering/Construction
Equipment
Financial Services
Food/Beverage
Healthcare
Hospitality/Leisure
Industrials
Metal Fabrication
Plastics/Rubber
Print/Packaging
Semi Conductor
Technology/Media/Telecom
Transportation/Logistics/Supply Chain
Wholesale Distribution

Recent Industry Transactions

<p><i>This announcement appears as a matter of record only</i></p> <p>IC ENABLE Semiconductor Layout and Design Services</p> <p><i>has been acquired by</i></p> <p>SYNERGUS</p> <p><i>The undersigned initiated the transaction and acted as the exclusive investment banker to the seller</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Securities transacted through Corporate Finance Securities, Inc.</small></p>	<p><i>This announcement appears as a matter of record only</i></p> <p>\$22,000,000</p> <p>Semiconductor Systems, Inc.</p> <p><i>has been acquired by</i></p> <p>International, Inc. (NASDAQ: FSID)</p> <p><i>A CFA Managing Director acted as exclusive financial and strategic advisor to Semiconductor Systems, Inc. and managed this transaction</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>	<p><i>This announcement appears as a matter of record only</i></p> <p>\$42,500,000</p> <p>NOAH PRECISION, INC.</p> <p><i>has been acquired by</i></p> <p>ADVANCED ENERGY (NASDAQ: AEIS)</p> <p><i>A CFA Managing Director acted as exclusive financial and strategic advisor to Noah Precision, Inc. and managed this transaction</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>	<p><i>This announcement appears as a matter of record only</i></p> <p>rodel, Inc.</p> <p><i>has licensed certain technology from and entered into a joint venture with</i></p> <p>CLARIANT (SWL: CH; CLN)</p> <p><i>A CFA Managing Director acted as exclusive financial and strategic advisor to rodel, Inc. and managed this transaction</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>	<p><i>This announcement appears as a matter of record only</i></p> <p>\$25,000,000</p> <p>Supercritical Systems, Inc.</p> <p><i>has been acquired by</i></p> <p>TOKYO ELECTRON LIMITED (OTN: TOELF)</p> <p><i>A CFA Managing Director acted as exclusive financial and strategic advisor to Supercritical Systems, Inc. and managed this transaction</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>
<p><i>This announcement appears as a matter of record only</i></p> <p>\$45,000,000</p> <p>Ion Systems, Inc.</p> <p><i>has received an investment from</i></p> <p>Thomas Weisel Partners</p> <p><i>A CFA Managing Director acted as exclusive financial and strategic advisor to Ion Systems, Inc. and managed this transaction</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>	<p><i>This announcement appears as a matter of record only</i></p> <p>Sumitomo Heavy Industries, Ltd.</p> <p><i>has sold the assets and electron beam technology of its subsidiary RPC Industries, Inc. to</i></p> <p>INTEVAC (NASDAQ: IVAC)</p> <p><i>A CFA Managing Director acted as exclusive financial advisor to Sumitomo Heavy Industries, Ltd. and managed this transaction</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>	<p><i>This announcement appears as a matter of record only</i></p> <p>PLANAR SEMICONDUCTOR AG</p> <p><i>Provided strategic and financial advisory services</i></p> <p><i>A CFA Managing Director acted as exclusive strategic and financial advisor</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>	<p><i>This announcement appears as a matter of record only</i></p> <p>MICRONIC LASER SYSTEMS</p> <p><i>has entered into an alliance for joint development of new lithography tools, including direct write systems, and has received a convertible loan from</i></p> <p>ASML (NASDAQ: ASML)</p> <p><i>A CFA Managing Director acted as exclusive financial advisor to Micronic Laser Systems and managed this transaction</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>	<p><i>This announcement appears as a matter of record only</i></p> <p>Semifab, Inc.</p> <p><i>has been acquired by</i></p> <p>ASYST ASYST TECHNOLOGIES, INC. (NASDAQ: ASYT)</p> <p><i>A CFA Managing Director acted as exclusive financial and strategic advisor to Semifab, Inc. and managed this transaction</i></p> <p>cfa CORPORATE FINANCE ASSOCIATES <small>Since 1956</small></p>