

Seale & Associates

SEMICONDUCTOR INDUSTRY
Q1 2023
VALUATION UPDATE

Introduction

We are pleased to share our Semiconductor Industry Multiples Valuation Update for Q1 2023.

At Seale & Associates, we are committed to providing process-driven solutions designed to optimize value and achieve our clients' strategic objectives in a range of transactions including Mergers, Acquisitions, Divestitures and Carve-Outs, Business Sales, Recapitalizations, and Joint Ventures, among other corporate finance and strategy consulting services.

Over the course of 23+ years, we have successfully served clients all over the world, and we are delighted to continue providing investment banking advisory services to our Semiconductor Industry clients that are looking to grow through acquisitions or optimize their portfolios through strategic divestitures.

Seale has extensive experience advising leading multinational companies, private equity firms and family-owned businesses across a wide range of industries.



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Semiconductor Industry Growth Opportunities in Mexico

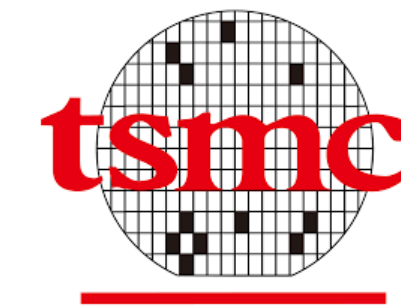
The global semiconductor industry is experiencing strong growth, driven by the increasing demand for semiconductors in various applications such as automotive, healthcare, consumer electronics, and telecommunications.

Top players in the global semiconductor industry include companies such as Intel, Samsung Electronics, TSMC, NXP and Broadcom, among others. These companies have a significant market share and are continually expanding their manufacturing capabilities to meet the increasing demand for semiconductors.

Mexico's domestic semiconductor industry has been experiencing growth as well, and nearshoring has played a significant role in this development. Nearshoring, the practice of moving operations closer to the primary market, has become increasingly attractive to U.S. companies seeking to reduce supply chain risk and costs. With the ongoing U.S.-China trade war, many U.S. companies are looking for alternative sourcing and manufacturing options, and Mexico is emerging as a favorable destination for nearshoring.

Nearshoring is a key factor driving growth in Mexico's semiconductor industry. With its strategic location, lower labor costs, and favorable regulatory environment, Mexico has become a preferred destination for U.S. companies seeking to reduce supply chain risk and costs. Top players such as NXP Semiconductors, Intel, and Samsung Electronics have set up manufacturing facilities across the country. Regions such as Guadalajara, San Luis Potosi, Cd. Juarez, Monterrey, Queretaro, and Tijuana have been better-suited regions for the semiconductor industry with easy access to highways, airports, and seaports.

Key Industry Players



Semiconductor Industry Growth Opportunities in Mexico

Mexico's regulatory environment has also played a significant role in driving growth in the semiconductor industry. The government has implemented policies and programs aimed at attracting foreign investment in the semiconductor industry, including tax incentives and simplified registration procedures. Furthermore, Mexico's free trade agreement with over 40 countries, including the United States and Canada, has created a favorable business environment for the semiconductor industry, reducing trade barriers and increasing market access for Mexican companies.

The enactment of the CHIPS for America Act will further strengthen the semiconductor industry in Mexico, providing new opportunities for growth and investment. The act provides funding to increase domestic semiconductor production and strengthen the supply chain in the United States. This has encouraged U.S. semiconductor companies to invest in expanding their manufacturing capabilities in Mexico, as they seek to comply with the new regulations and reduce their dependence on Chinese suppliers.

Advanced packaging manufacturing has emerged as a new opportunity for growth in Mexico's semiconductor industry. Mexico's well-developed education system produces a steady stream of highly skilled workers in STEM fields, who are well suited for advanced packaging operations.












The wider packaging ecosystem of components and materials also offers huge opportunities for growth as western countries seek to build reliable and resilient nearshore supply chains, especially in IC substrates which are produced almost exclusively in Asia today.

In conclusion, the semiconductor industry in Mexico offers significant opportunities for growth and investment, with regions such as Guadalajara, San Luis Potosi, Cd. Juarez, Monterrey, Queretaro, and Tijuana being better-suited regions for the industry. Nearshoring, regulatory benefits, and the enactment of the CHIPS for America Act have strengthened the industry's growth trajectory, with top players setting up manufacturing facilities across the country. While challenges such as the limitation of IC substrate capabilities in the United States exist, Mexico's skilled workforce and favorable regulatory environment make it an attractive destination for the semiconductor industry, which is poised for further growth and development in the coming years.









Better-suited regions





Manufacturers Global Comparable Public Companies

Company	Country	Market Cap. US\$M	Enterprise Value US\$M	Revenue US\$M	EBITDA Margin	Annual Average EV/EBITDA		First Quarter Mar. 31, 2023		
						2021	2022	EV/EBITDA	EV/Revenue	
Broadcom Inc.	 BROADCOM	USA	\$267,473	\$294,222	\$34,412	58.1%	18.1x	15.0x	14.6x	8.5x
Infineon Technologies AG		DEU	\$53,312	\$55,614	\$16,041	33.0%	19.6x	10.2x	10.1x	3.4x
Intel Corporation		USA	\$135,156	\$149,812	\$56,416	17.5%	6.6x	5.5x	9.3x	2.4x
Micron Technology, Inc.		USA	\$66,036	\$66,950	\$23,063	41.8%	8.2x	4.2x	6.9x	2.9x
NVIDIA Corporation		USA	\$684,981	\$683,716	\$26,974	26.4%	65.0x	41.8x	93.5x	25.3x
NXP Semiconductors N.V.		NLD	\$48,394	\$56,274	\$13,190	37.6%	21.6x	12.6x	11.1x	4.3x
QUALCOMM Incorporated		USA	\$142,252	\$150,891	\$41,070	35.3%	16.3x	11.1x	9.2x	3.5x
Samsung Electronics Co., Ltd.		KOR	\$327,042	\$253,928	\$221,035	23.9%	6.2x	3.7x	4.0x	1.1x
SK hynix Inc.		KOR	\$46,727	\$61,098	\$35,481	45.7%	6.1x	3.5x	3.8x	1.8x
Texas Instruments Incorporated		USA	\$168,563	\$168,650	\$19,502	53.3%	22.2x	14.5x	15.1x	8.4x
Taiwan Semiconductor Manufacturing Company Limited		TWN	\$453,092	\$430,745	\$74,787	68.2%	15.7x	10.8x	8.4x	5.8x
■ Excluded from mean and median						Mean	14.1x	9.1x	9.2x	3.1x
						Median	16.0x	10.5x	9.2x	3.2x






Chip Designers Global Comparable Public Companies

Company	Country	Market Cap. US\$M	Enterprise Value US\$M	Revenue US\$M	EBITDA Margin	Annual Average EV/EBITDA		First Quarter Mar. 31, 2023		
						2021	2022	EV/EBITDA	EV/Revenue	
Advanced Micro Devices, Inc.	 USA	\$157,738	\$154,839	\$23,601	19.2%	48.9x	29.2x	31.8x	6.6x	
Broadcom Inc.	 USA	\$267,473	\$294,222	\$33,203	58.0%	18.1x	15.0x	14.6x	8.5x	
Intel Corporation	 USA	\$135,156	\$149,812	\$63,054	24.4%	6.6x	5.5x	9.3x	2.4x	
Marvell Technology, Inc.	 USA	\$37,104	\$40,930	\$5,844	31.0%	63.6x	37.1x	22.2x	6.9x	
MediaTek Inc.	 TWN	\$41,066	\$36,180	\$17,864	25.8%	19.0x	8.4x	7.7x	2.0x	
NXP Semiconductors N.V.	 NLD	\$48,394	\$56,274	\$13,205	38.7%	21.6x	12.6x	11.1x	4.3x	
QUALCOMM Incorporated	 USA	\$142,252	\$150,891	\$42,958	37.7%	16.3x	11.1x	9.2x	3.5x	
Renesas Electronics Corporation	 JPN	\$25,866	\$29,108	\$11,381	40.8%	15.3x	8.4x	7.4x	2.6x	
■ Excluded from mean and median						Mean	16.2x	10.2x	9.9x	4.0x
						Median	17.2x	9.8x	9.2x	3.5x










Production Equipment Manufacturers Global Comparable Public Companies

Company	Country	Market Cap. US\$M	Enterprise Value US\$M	Revenue US\$M	EBITDA Margin	Annual Average EV/EBITDA		First Quarter Mar. 31, 2023		
						2021	2022	EV/EBITDA	EV/Revenue	
Advantest Corporation		JPN	\$16,828	\$16,649	\$4,016	34.3%	21.8x	11.5x	12.2x	4.2x
Applied Materials, Inc.		USA	\$103,806	\$105,877	\$26,253	31.5%	19.4x	11.9x	12.6x	4.0x
ASML Holding N.V.		NLD	\$268,033	\$265,106	\$22,628	33.0%	43.1x	31.3x	34.2x	11.5x
KLA Corporation		USA	\$55,277	\$58,637	\$10,484	43.6%	19.7x	14.1x	12.7x	5.6x
Lam Research Corporation		USA	\$71,532	\$71,948	\$19,048	33.5%	19.5x	11.4x	10.7x	3.8x
Nikon Corporation		JPN	\$3,537	\$2,191	\$4,469	13.1%	24.9x	3.9x	3.7x	0.5x
SCREEN Holdings Co., Ltd.		JPN	\$4,155	\$3,153	\$3,458	19.0%	13.1x	5.6x	4.9x	0.9x
Tokyo Electron Limited		JPN	\$56,502	\$53,588	\$16,801	30.5%	19.5x	12.2x	10.5x	3.2x
■ Excluded from mean and median						Mean	19.7x	10.1x	9.6x	2.8x
						Median	19.5x	11.5x	10.7x	3.5x

Materials Providers Global Comparable Public Companies



















Company	Country	Market Cap. US\$M	Enterprise Value US\$M	Revenue US\$M	EBITDA Margin	Annual Average EV/EBITDA		First Quarter Mar. 31, 2023		
						2021	2022	EV/EBITDA	EV/Revenue	
BASF SE	 BASF	DEU	\$46,933	\$66,068	\$91,520	11.1%	14.4x	5.2x	9.9x	0.7x
DuPont de Nemours, Inc.		USA	\$32,895	\$36,947	\$12,761	23.9%	10.0x	9.8x	10.9x	2.8x
JSR Corporation	 JSR Corporation	JPN	\$4,864	\$5,537	\$3,076	15.4%	15.6x	12.4x	13.1x	1.9x
Shin-Etsu Chemical Co., Ltd.		JPN	\$64,852	\$54,757	\$21,129	43.1%	12.1x	6.7x	6.0x	2.6x
Sumitomo Chemical Company, Limited		JPN	\$5,474	\$16,070	\$22,632	8.1%	8.4x	6.4x	8.1x	0.7x
						Mean	12.1x	8.1x	9.6x	1.7x
						Median	12.1x	6.7x	9.9x	1.9x

Testing & Packaging Global Comparable Public Companies







Company	Country	Market Cap. US\$M	Enterprise Value US\$M	Revenue US\$M	EBITDA Margin	Annual Average EV/EBITDA		First Quarter Mar. 31, 2023		
						2021	2022	EV/EBITDA	EV/Revenue	
Amkor Technology, Inc.		USA	\$6,382	\$6,663	\$6,966	19.8%	5.3x	3.7x	4.2x	0.9x
ASE Technology Holding Co., Ltd.		TWN	\$15,837	\$20,675	\$21,549	19.3%	6.8x	4.4x	4.6x	0.9x
BE Semiconductor Industries N.V.		NLD	\$6,831	\$6,473	\$710	40.0%	24.4x	13.2x	19.5x	8.2x
ChipMOS TECHNOLOGIES INC.		TWN	\$914	\$1,070	\$766	32.6%	4.6x	3.2x	3.9x	1.4x
Cohu, Inc.		USA	\$1,813	\$1,531	\$813	21.1%	16.6x	6.6x	8.5x	1.9x
Hangzhou Changchuan Technology Co.,Ltd		CHN	\$4,280	\$4,289	\$343	18.4%	191.6x	109.0x	89.9x	13.4x
Kulicke and Soffa Industries, Inc.		SGP	\$2,987	\$2,238	\$1,008	23.5%	14.7x	4.0x	6.2x	1.8x
Powertech Technology Inc.		TWN	\$2,229	\$3,069	\$2,732	32.4%	4.1x	3.1x	3.4x	1.1x
Rorze Corporation		JPN	\$1,513	\$1,569	\$694	30.1%	14.7x	9.7x	8.5x	2.3x
						Mean	9.5x	4.2x	5.6x	1.5x
						Median	6.8x	3.9x	4.6x	1.4x

■ Excluded from mean and median

Semiconductor - Q1 Global Transactions

Date	Target	Country	Description	Buyer	Seller	% Acquired	Size US\$M	EV/ EBITDA	EV/ Revenue
Mar-23		JPN	Provides LSI design and manufacturing support services and ES chip support services		-	100.0%	-	-	-
Mar-23		DEU	Develops and manufactures test systems and electronics for the aerospace and power semiconductor		-	100.0%	-	-	-
Mar-23		CAN	Develops and manufactures gallium nitride power switching transistors		Multiple sellers	100.0%	\$830.0	-	-
Feb-23		USA	Manufactures and supplies discrete semiconductors for design engineers		-	100.0%	-	-	-
Feb-23	Beijing Advanced Semiconductor Innovation Co. Ltd.	CHN	Develops 3rd generation semiconductor technologies	Hebei Sinopack Electronic Technology Co. Ltd.	Multiple sellers	94.6%	\$137.7	-	-
Feb-23	Jiangsu Lianyin New Materials Co. Ltd.	CHN	Manufactures and offers photovoltaic and semiconductor equipment			69.4%	\$17.6	-	5.0x
Jan-23		USA	Manufactures capacitive touch sensitive controllers, high performance amplifiers, and sensor interface AFEs	Flip Electronics, LLC	-	100.0%	-	-	-
Jan-23		USA	Designs and develops strip and lead frame based test handler solutions for the semiconductor industry		-	100.0%	-	-	-
Jan-23		USA	Provides chemical mechanical polishing (CMP) technology		-	100.0%	\$35.0	-	-
Jan-23		GBR	Operates as a semiconductor materials and equipment company	GoEco Renewables Ltd.	-	100.0%	-	-	-
Jan-23		USA	Provides semiconductor testing, qualification, and related technical services		-	100.0%	-	-	-

Semiconductor - Q1 Global Transactions (Continued)

Date	Target	Country	Description	Buyer	Seller	% Acquired	Size US\$M	EV/ EBITDA	EV/ Revenue
Jan-23	 PLASTRONICS	USA	Develops, manufactures, and markets socket solutions for next generation packaged semiconductor devices		-	100.0%	-	-	-
Jan-23	 GDSI Grinding and Dicing Services Inc.	USA	Provides premium back-end semiconductor supply chain services		-	100.0%	\$20.0	-	-
Jan-23	 KCB SOLUTIONS RF DESIGN & MANUFACTURING	USA	Designs and manufactures RF and microwave surface-mount components	 microSS one source. one solution.™	ARTEMIS	100.0%	-	-	-

Representative Global Engagements

 has acquired 	 has acquired 	 has sold Triumph Processing - Embee Division to 	 has sold Triumph Air Repair & Triumph Engines businesses to 	 has acquired unified brands from 	 has partnered with a company backed by 	 has acquired 	 has sold the North American guarding business of to 	 has sold to 	 has sold to 	 a subsidiary of has sold A division of Carrier Commercial Refrigeration, Inc. to
 has sold to Daives Baird Pty Ltd a sister company of 	 has acquired 	 has sold to Code Flower Inc.	 has sold its GRACE Membranes Business a subsidiary of 	 has sold and to 	 has sold a controlling interest to 	 has been acquired by 	 has sold SENSI-CARE and ALOE+VESTA to 	 has sold their Sanitaryware Manufacturing Plant to 	 has acquired Multiple snack companies 	 has sold SAFETY • INTEGRITY • EXPERIENCE to
 has sold Commercial Flight Training Business to 	 has been acquired by 	 has sold Oxbow Sulphur, Inc. to 	 has been acquired by 	 has sold to KPAC Holdings, Inc. A private investment group	 has acquired 	 has acquired 	 has acquired 	 has sold its SYCAR Resins business to 	 has sold to Private Equity Partners	 has been acquired by
 has agreed to sell to 	 has acquired KFC Costa Rica from 	 has been acquired by 	 has sold to 	 has sold the Films Business of to 	 has been acquired by 	 has sold to 	 Oxbow's Senior Subordinated debt issued by was refinanced by 	 has sold to 	 has acquired from THE MOORE COMPANY	 has sold its concrete pumping business to

Advisor to Leading Companies Worldwide



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Please contact us if you would like further information about M&A trends and/or specific transaction multiples for your industry

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Founded in 1999, Seale & Associates is a leading global investment bank with extensive experience in mergers and acquisitions, and corporate finance advisory services. Seale has an outstanding track record closing hundreds of sell-side and buy-side transactions, more than US\$50 billion in value, across a wide range of industries around the world. Our professionals are trusted advisors maintaining the highest quality and utmost integrity.

+20

YEARS OF EXPERIENCE

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