



Seale & Associates

SEMICONDUCTOR INDUSTRY
Q3 2024
VALUATION UPDATE

25 years

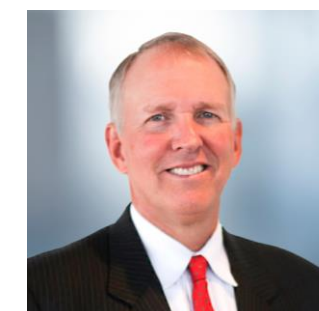
Introduction

We are pleased to share our Semiconductor Industry Multiples Valuation Update for Q3 2024.

At Seale & Associates, we are committed to providing process-driven solutions designed to optimize value and achieve our client's 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.

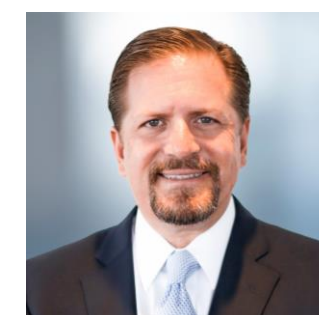
Over the course of 25+ years, we have successfully served clients all over the world, and we are delighted to continue providing investment banking advisory services to our clients who are looking to grow through acquisitions or optimize their portfolios through strategic divestitures.

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



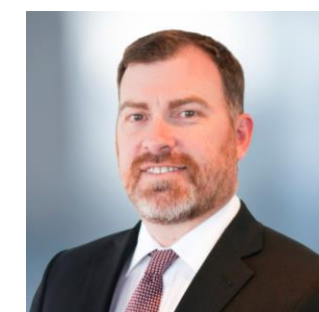
James A. Seale | President

jseale@sealeassociates.com



Brett M. Carmel | Senior Managing Director

bcarmel@sealeassociates.com



Robert Whitney | Managing Director

rwhitney@sealeassociates.com



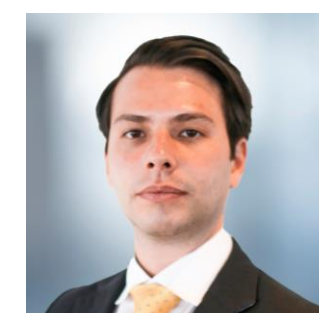
Sergio Garcia del Bosque | Managing Director

sgarcia@sealeassociates.com



Carlos Hernández Goudet | Managing Director

chernandez@sealeassociates.com



Alejandro Montemayor | Vice President

amontemayor@sealeassociates.com



Armando Rios | Vice President

arios@sealeassociates.com

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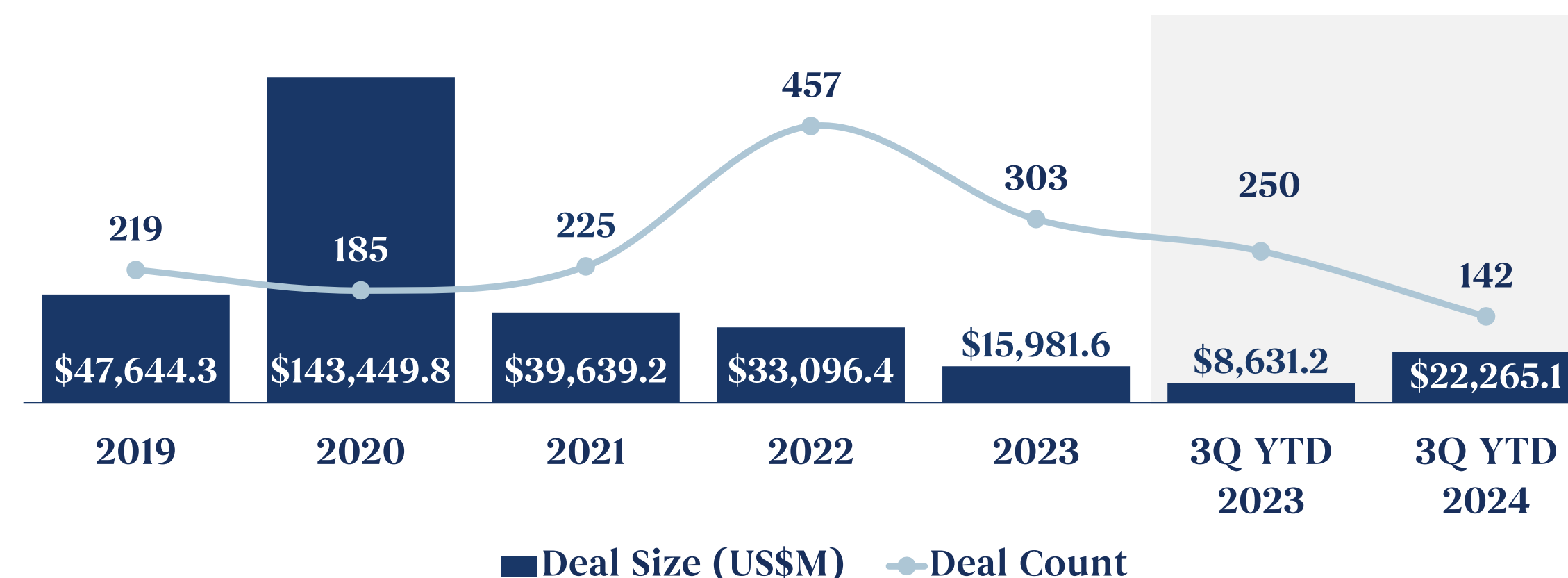
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Semiconductor Industry Overview, M&A Trends and Market Intelligence

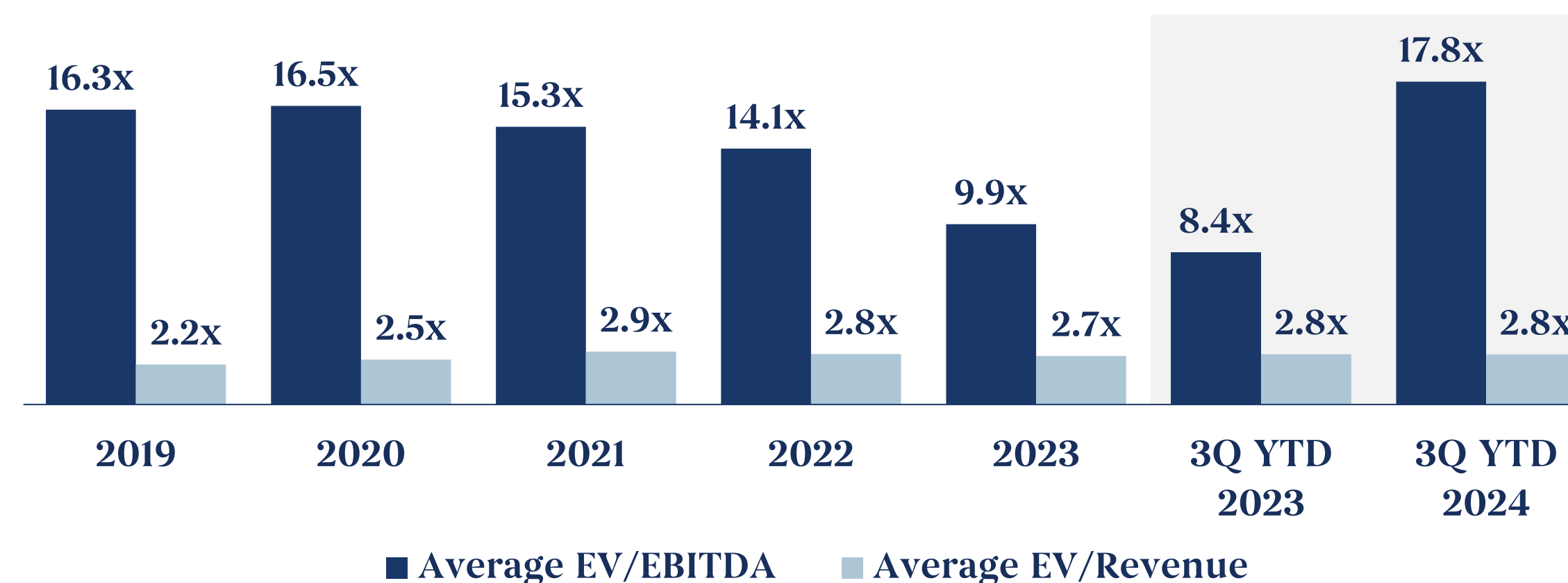
Industry Overview

- The **Semiconductor market** is expected to **grow** from **US\$720.0 billion in 2024 to US\$1,210.0 billion by 2029**, representing a **CAGR of 10.8%**
- Global revenues are expected to reach **US\$588.0 billion in 2024**, not only would that **surpass 2023 by 13.0%**, but it would also surpass **2022's industry record** revenues of **US\$574.0 billion by 2.5%**
- **Strategic M&A opportunities** are expanding as semiconductor companies seek to acquire **niche players** and startups in fields like **artificial intelligence (AI), advanced materials, and components**. This trend is driven by the increasing need for high-performance capabilities and innovative solutions in the industry
- M&A has been especially active in the **processor, discrete, and wireless sectors**, fueled by growth in **AI processing** and the acquisition of **non-chip businesses** to broaden solution platforms. This diversification supports companies' strategic goals for market leadership
- While **private equity** activity in semiconductors has been limited this year, **financial buyers'** interest is mounting. The sector's long-term growth potential suggests increased activity from **private equity firms** in the near future










Semiconductor Industry M&A Deal Size and Volume











Semiconductor Industry M&A Average EV/EBITDA and EV/Revenue









Manufacturers Global Comparable Public Companies

Company	Country	Market Cap. US\$M	Enterprise Value US\$M	Revenue US\$M	EBITDA Margin	Annual Average EV/EBITDA		Third Quarter Sep. 30, 2024		
						2022	2023	EV/EBITDA	EV/Revenue	
Infineon Technologies AG		DEU	\$45,520	\$49,325	\$16,936	29.6%	10.2x	8.6x	9.8x	2.9x
Intel Corporation		USA	\$100,315	\$128,030	\$55,121	19.9%	5.5x	15.0x	11.6x	2.3x
Micron Technology, Inc.		USA	\$114,998	\$119,853	\$25,111	36.7%	4.2x	16.8x	13.0x	4.8x
NVIDIA Corporation		USA	\$2,978,923	\$2,954,138	\$96,307	63.8%	41.8x	99.4x	48.0x	30.7x
NXP Semiconductors N.V.		NLD	\$61,138	\$68,379	\$13,109	36.3%	12.6x	11.4x	14.4x	5.2x
QUALCOMM Incorporated		USA	\$189,436	\$190,958	\$37,349	31.5%	11.2x	10.7x	16.2x	5.1x
SK hynix Inc.		KOR	\$91,377	\$105,241	\$37,411	39.0%	3.5x	11.0x	7.2x	2.8x
Texas Instruments Incorporated		USA	\$188,608	\$192,811	\$16,092	45.2%	14.5x	15.0x	26.5x	12.0x
Taiwan Semiconductor Manufacturing Company Limited		TWN	\$781,507	\$750,281	\$76,786	67.5%	10.7x	8.8x	14.5x	9.8x
■ Excluded from mean and median						Mean	11.9x	12.2x	12.4x	3.9x
						Median	10.7x	11.4x	14.4x	5.1x





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		Third Quarter Sep. 30, 2024		
						2022	2023	EV/EBITDA	EV/Revenue	
Advanced Micro Devices, Inc.	 USA	\$265,561	\$262,466	\$23,276	18.3%	28.9x	41.8x	61.8x	11.3x	
Broadcom Inc.	 USA	\$805,674	\$865,681	\$46,815	49.3%	15.0x	17.5x	37.5x	18.5x	
Intel Corporation	 USA	\$100,315	\$128,030	\$55,121	19.9%	5.5x	15.0x	11.6x	2.3x	
Marvell Technology, Inc.	 USA	\$62,470	\$66,036	\$5,279	20.2%	37.1x	31.6x	62.0x	12.5x	
MediaTek Inc.	 TWN	\$58,976	\$53,176	\$15,757	23.9%	8.4x	10.0x	14.1x	3.4x	
NXP Semiconductors N.V.	 NLD	\$61,138	\$68,379	\$13,109	36.3%	12.6x	11.4x	14.4x	5.2x	
QUALCOMM Incorporated	 USA	\$189,436	\$190,958	\$37,349	31.5%	11.2x	10.7x	16.2x	5.1x	
Renesas Electronics Corporation	 JPN	\$25,984	\$28,421	\$10,134	36.2%	8.4x	7.8x	7.8x	2.8x	
■ Excluded from mean and median						Mean	11.1x	12.1x	12.8x	3.8x
						Median	11.9x	13.2x	15.3x	5.2x

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		Third Quarter Sep. 30, 2024		
						2022	2023	EV/EBITDA	EV/Revenue	
Advantest Corporation	 JPN	\$34,744	\$34,611	\$3,657	24.0%	11.5x	17.0x	39.4x	9.5x	
Applied Materials, Inc.	 USA	\$166,571	\$164,139	\$26,854	30.9%	11.9x	13.5x	19.8x	6.1x	
ASML Holding N.V.	 NLD	\$326,835	\$326,377	\$28,377	34.4%	31.3x	28.7x	33.4x	11.5x	
KLA Corporation	 USA	\$103,752	\$106,068	\$9,812	41.7%	14.1x	14.6x	25.9x	10.8x	
Lam Research Corporation	 USA	\$105,773	\$105,197	\$14,905	33.2%	11.4x	13.2x	21.3x	7.1x	
Tokyo Electron Limited	 JPN	\$81,321	\$78,260	\$13,917	30.0%	12.2x	13.6x	18.7x	5.6x	
■ Excluded from mean and median						Mean	12.2x	13.7x	19.9x	6.3x
						Median	12.0x	14.1x	23.6x	8.3x








Material Providers Global Comparable Public Companies

Company	Country	Market Cap. US\$M	Enterprise Value US\$M	Revenue US\$M	EBITDA Margin	Annual Average EV/EBITDA		Third Quarter Sep. 30, 2024		
						2022	2023	EV/EBITDA	EV/Revenue	
BASF SE	 DEU	\$47,339	\$74,656	\$72,796	9.3%	5.2x	11.6x	11.0x	1.0x	
DuPont de Nemours, Inc.	 USA	\$37,218	\$43,881	\$12,058	25.8%	9.8x	11.4x	14.1x	3.6x	
Shin-Etsu Chemical Co., Ltd.	 JPN	\$82,581	\$71,978	\$16,847	38.5%	6.7x	6.4x	11.1x	4.3x	
Sumitomo Chemical Company, Limited	 JPN	\$4,655	\$14,659	\$17,421	NM	6.4x	12.0x	NM	0.8x	
						Mean	7.0x	10.3x	11.0x	1.8x
						Median	6.5x	11.5x	11.1x	2.3x

■ Excluded from mean and median

NM: Not Measurable

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		Third Quarter Sep. 30, 2024		
						2022	2023	EV/EBITDA	EV/Revenue	
Amkor Technology, Inc.	 USA	\$7,540	\$7,343	\$6,401	18.2%	3.7x	4.5x	6.3x	1.1x	
ASE Technology Holding Co., Ltd.	 TWN	\$20,607	\$24,330	\$18,509	16.8%	4.5x	5.1x	7.8x	1.3x	
BE Semiconductor Industries N.V.	 NLD	\$10,096	\$10,032	\$647	36.4%	13.2x	28.8x	42.5x	15.5x	
ChipMOS TECHNOLOGIES INC.	 TWN	\$859	\$872	\$710	30.2%	3.2x	4.4x	4.1x	1.2x	
Cohu, Inc.	 USA	\$1,206	\$978	\$500	7.2%	6.6x	8.8x	27.0x	2.0x	
Powertech Technology Inc.	 TWN	\$3,224	\$3,592	\$2,374	29.6%	3.1x	4.1x	5.1x	1.5x	
Rorze Corporation	 JPN	\$2,421	\$2,417	\$739	29.5%	9.7x	7.7x	11.1x	3.3x	
■ Excluded from mean and median						Mean	6.3x	5.8x	5.8x	1.7x
						Median	4.5x	5.1x	7.8x	1.5x

Industry – Global Transactions

Date	Target	Country	Description	Buyer	Seller	% Acquired	Size US\$M	EV/ EBITDA	EV/ Revenue
Sep-24	Assets of Radical Semiconductor, Inc.	USA	BTQ Technologies , a quantum-safe company, acquired Radical Semiconductor's assets to enhance its quantum-safe hardware solutions	 BTQ		100.0%	-	-	-
Aug-24*	Tangming Shengshi Technology	CHN	Aemulus Corporation a provider of test equipment, announced the acquisition of Tangming Shengshi Technology , a semiconductor testing company		-	60.0%	\$3.5	-	-
Aug-24	4G IoT technologies of Sequans	FRA	Qualcomm Technologies , a wireless technology company, acquired the 4G IoT semiconductor technologies of Sequans			100.0%	\$200.0	-	-
Aug-24*	rebellions_	KOR	Sapeon Korea , an AI semiconductor company, announced the merger with Rebellions , an AI chip developer startup		Multiple Sellers	Merger	-	-	-
Aug-24*		TWN	Silicon Integrated Systems , a provider of integrated circuits, announced the acquisition Hycon Technology , an integrated circuits provider		-	100.0%	\$63.2	-	2.0x
Aug-24		USA	Polymatech Electronics , a semiconductor chip maker acquired Nisene Technology Group , an automated integrated circuits provider		-	100.0%	-	-	-
Jul-24*		FRA	Merck , a science technology company, announced the acquisition of Unity-SC , a provider of metrology and inspection tools for semiconductors		Multiple Sellers	100.0%	\$169.1	-	-
Jul-24		GBR	SoftBank Group , a global investment company, acquired Graphcore Limited , an AI chipmaker specializing in Intelligent Processing Units		Multiple Sellers	100.0%	-	-	-
Jul-24		IND	Accenture , a global professional services firm, acquired Excelmax Technologies , a semiconductor design services provider		-	100.0%	-	-	-
Jul-24		GBR	Microtest , a microchip testing company, acquired ipTEST , a provider of power semiconductor testing systems		-	100.0%	-	-	-

*Announced transactions pending approval and other customary closing conditions

NM: Not Measurable

Source: Capital IQ, Dealogic

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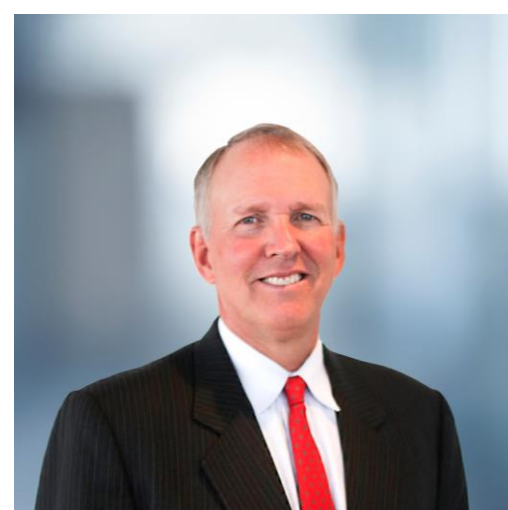
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<p>BEIJER REF</p> <p>has been acquired by</p>  <p>HERITAGE DISTRIBUTION HOLDINGS</p>	<p>avangardinnovative MOVING THE CIRCULAR ECONOMY FORWARD</p> <p>has sold a controlling interest to</p>  <p>WASTE MANAGEMENT</p>	<p>ZN ZINC NACIONAL</p> <p>has sold</p> <p>GSDKO</p> <p>Zinc Oxide Corporation a subsidiary of</p> <p>Korea Zinc</p>	<p>Electrolux PROFESSIONAL</p> <p>has acquired</p> <p>unified brands a DOVER company</p> <p>from</p> <p>DOVER</p>	<p>Port Contractors STEVEDORES - TERMINAL OPERATORS</p> <p>has been acquired by</p>  <p>ENSTRUCTURE</p>	<p>Oxbow</p> <p>Oxbow's Senior Subordinated debt issued by</p>  <p>H.J. BAKER ESTABLISHED 1888</p> <p>was refinanced by</p> <p>BMO </p>	<p>Hertz</p> <p>has acquired</p>  <p>DONLEN</p>
<p>Standex</p> <p>has sold</p> <p>Enginetics</p> <p>to</p> <p>Enjet AERO</p>	<p>ITT</p> <p>has sold</p> <p>BURNY KALIBURN PLASMA CUTTING INNOVATION</p> <p>and</p> <p>CMC Cleveland Motion Controls</p> <p>to</p> <p>LINCOLN ELECTRIC</p>	<p>Honeywell</p> <p>has sold</p> <p>TENSOR</p> <p>to</p>  <p>GE Power Systems</p>	<p>TRIUMPH™</p> <p>has sold</p> <p>Triumph Processing - Embee Division</p> <p>to</p> <p>AMP ALL METALS PROCESSING</p>	<p>TRIUMPH™</p> <p>has sold</p> <p>Triumph Air Repair, the APU Overhaul Operations of Triumph Aviation Services - Asia, and Triumph Engines businesses</p> <p>to</p> <p>TGG THE GORES GROUP</p>	<p>Rheem</p> <p>has acquired</p> <p>HTPG</p>	<p>GRACE</p> <p>has sold its GRACE Membranes business</p> <p>Uop a subsidiary of</p> <p>Honeywell</p>
<p>convatec - forever caring -</p> <p>has sold</p> <p>SENSI CARE</p> <p>and</p> <p>ALOE VESTA™</p> <p>to</p> <p>MEDLINE</p>	<p>United Technologies</p> <p>has sold</p> <p>MobileView</p> <p>to</p> <p>SAFE FLEET Driving Safety Forward™</p>	<p>United Technologies</p> <p>has sold</p> <p>HTPG A division of Carrier Commercial Refrigeration, Inc.</p> <p>to</p> <p>MONOMOY CAPITAL PARTNERS and Starboard Capital Partners</p>	<p>LOCKHEED MARTIN</p> <p>has sold</p> <p>Commercial Flight Training Business</p> <p>to</p> <p>ALTEON A BOEING COMPANY</p>	<p>FLOWSERVE</p> <p>has sold</p> <p>D&B</p> <p>to</p> <p>DB DaviesBaird</p>	<p>KBR</p> <p>has acquired</p> <p>Wabi Wabi Development Corporation</p>	<p>H G HARRISON GYPSUM, LLC</p> <p>has been recapitalized by</p> <p>H. I. G. PRIVATE EQUITY</p>



JAMES A. SEALE

President and Founder | Washington, DC

✉ [in](#) +1 (703) 623-9253

32+ years of global M&A experience, Attorney, CPA Arthur Andersen, and Professor of Global Investment Banking at George Washington University
University of Virginia - JD
University of Kentucky - BS in Accounting



BRETT M. CARMEL

Senior Managing Director and Co-founder | Miami, FL

✉ [in](#) +1 (703) 294-6530

25+ years of global M&A experience and Professor of M&A at Johns Hopkins University
The George Washington University - MBA International Business and MA - International Affairs
University of Florida - BA in Political Science with High Honors

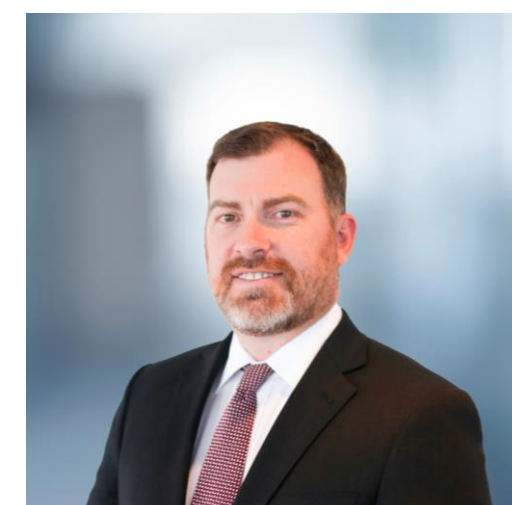


SERGIO GARCIA DEL BOSQUE

Managing Director | Mexico City, Mexico

✉ [in](#) +52 (55) 8000-7463

16+ years of global M&A experience
IPADE - MBA
Instituto Tecnológico y de Estudios Superiores de Monterrey
BS in Industrial Engineering



ROBERT E. WHITNEY

Managing Director | Washington, DC

✉ [in](#) +1 (703) 801-8939

19+ years of global M&A experience, CPA Deloitte & Touche, Corporate Audit and Assurance Services
University of Richmond - BS Business Administration in Accounting

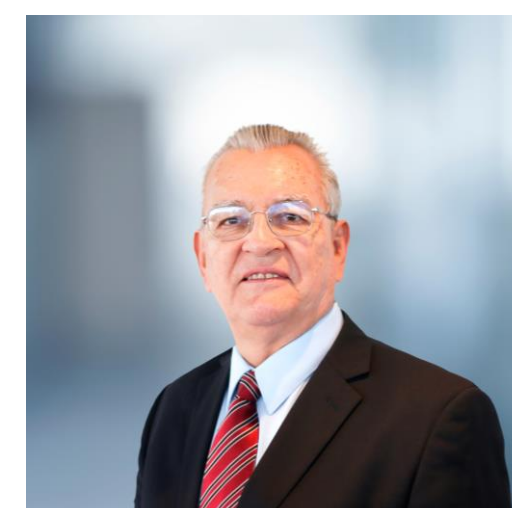


CARLOS HERNANDEZ GOUDET

Managing Director | San Luis Potosi, Mexico

✉ [in](#) +1 (571) 482-3432

14+ years of global M&A experience
Columbia University - MBA
Instituto Tecnológico y de Estudios Superiores de Monterrey
BS in Industrial Engineering



FELIPE BUENO

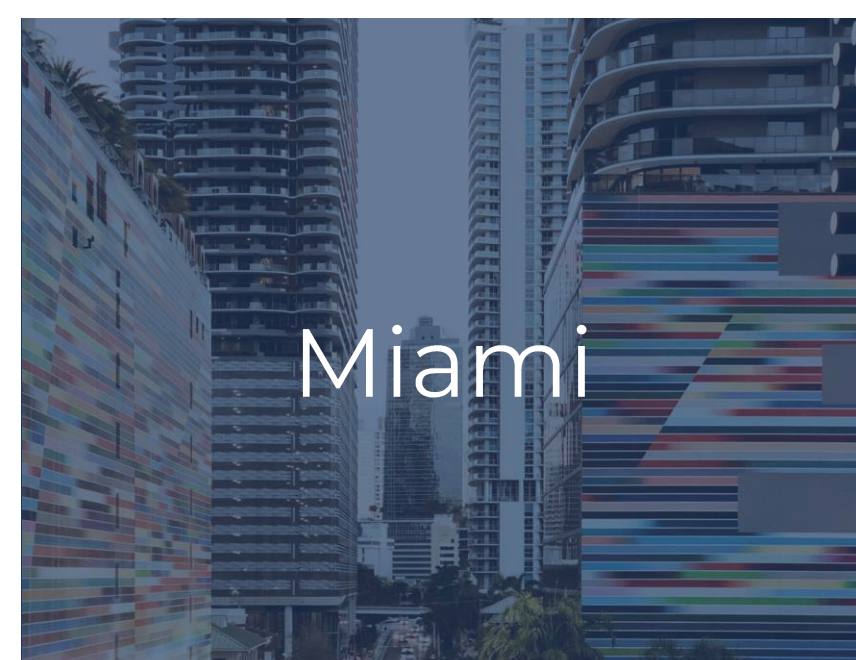
Senior Director | Monterrey, Mexico

✉ [in](#) +52 (84) 4432-4444

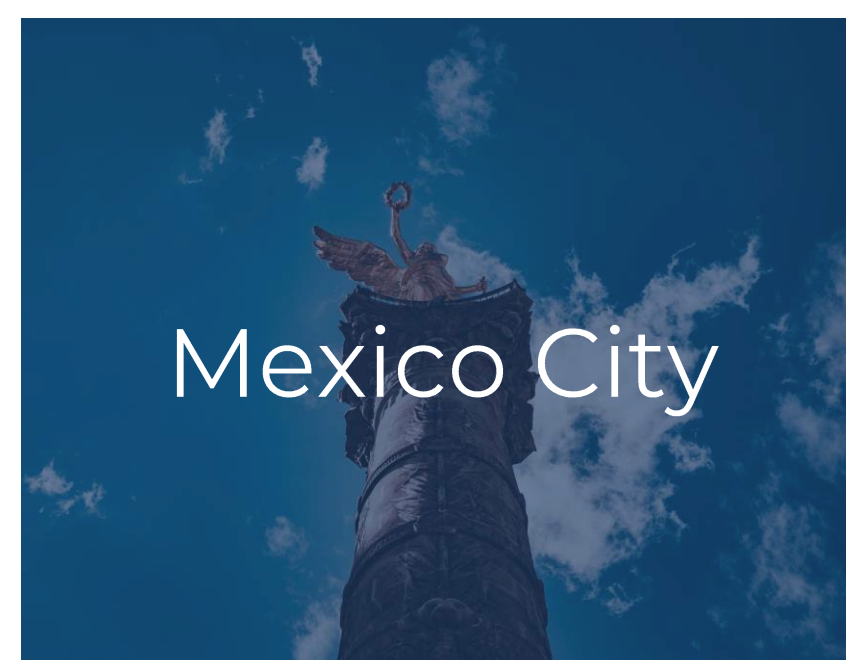
32+ years with Grupo Industrial Saltillo with experience as Director, Corp. Dev. and extensive global commercial experience
Instituto Tecnológico y de Estudios Superiores de Monterrey
MBA and BS in Industrial Engineering



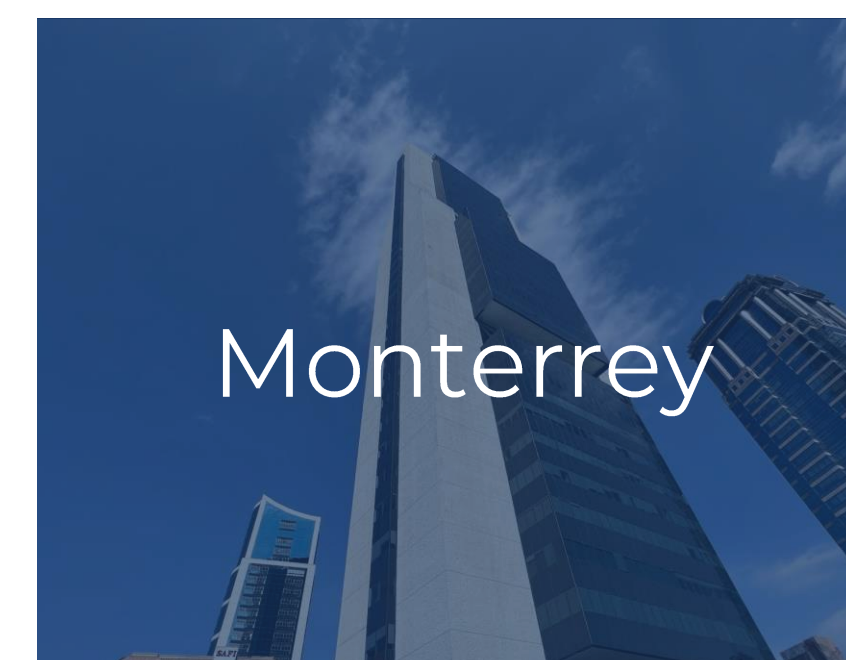
Washington D.C.



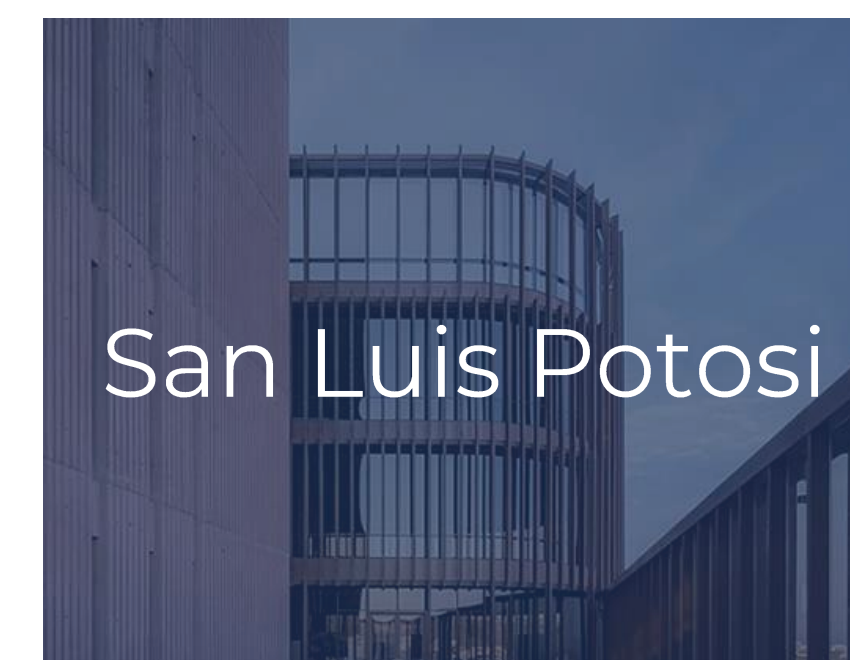
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25

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