

Axcelis Technologies (ACLS)

Technology, Media, and Telecom (TMT)
Coverage Group
2023-2024

Investment Leader: Abailoran Almukhametov

Senior Investment Analysts: Irene Park, Priya Gomes, Kelly Nguyen



UTMCAPITAL
Technology, Media, and Telecom

axcelis

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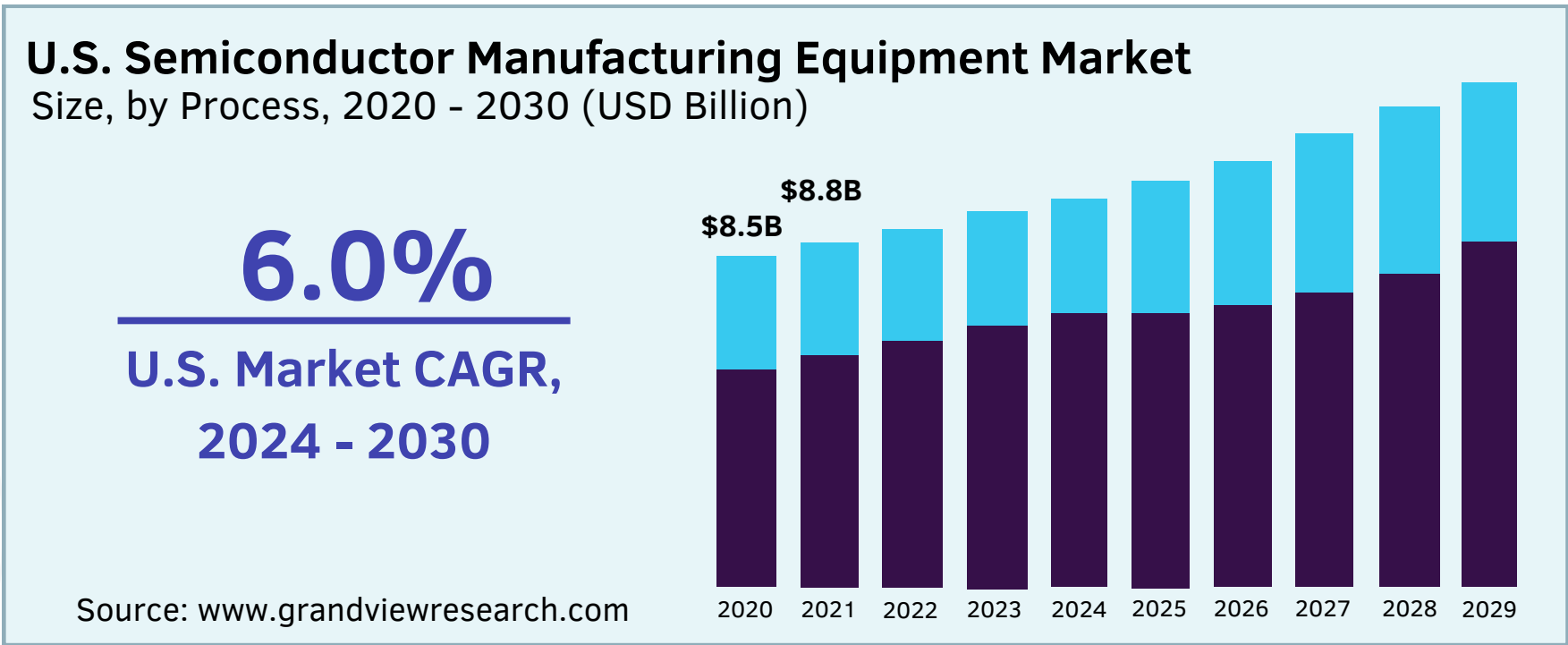
Semiconductor Equipment Industry Overview

The **semiconductor equipment industry** is characterized by rapid technological advancements and strong competition among manufacturers. Therefore, the manufacturing process of semiconductor devices is vital. One segment of the semiconductor equipment industry is ion implantation systems. **Ion implantation** is a key process in semiconductor device fabrication, where dopant ions are implanted into a semiconductor substrate to alter its electrical properties.

However, the **semiconductor equipment industry is cyclical** therefore it is subject to fluctuations in demand based on factors such as macroeconomic conditions, semiconductor market cycles, and technological innovation cycles.

Semiconductor Equipment Industry Growth

The global semiconductor manufacturing equipment market size was estimated at **USD 103.1 billion** in 2023 and is expected to expand at a compound annual growth rate (**CAGR**) of **7.9%** from 2024 to 2030.



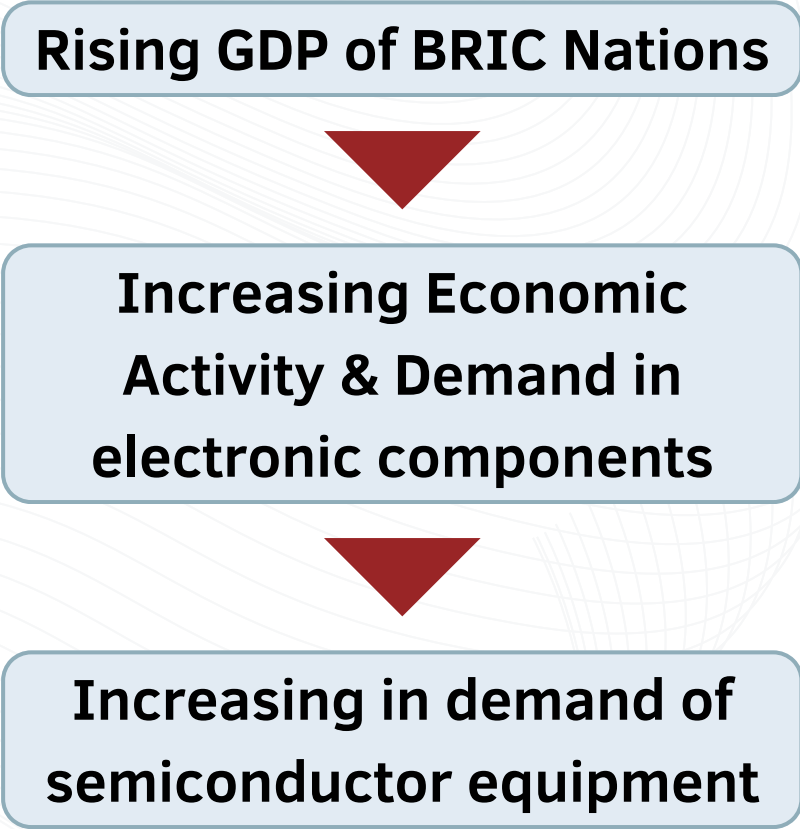
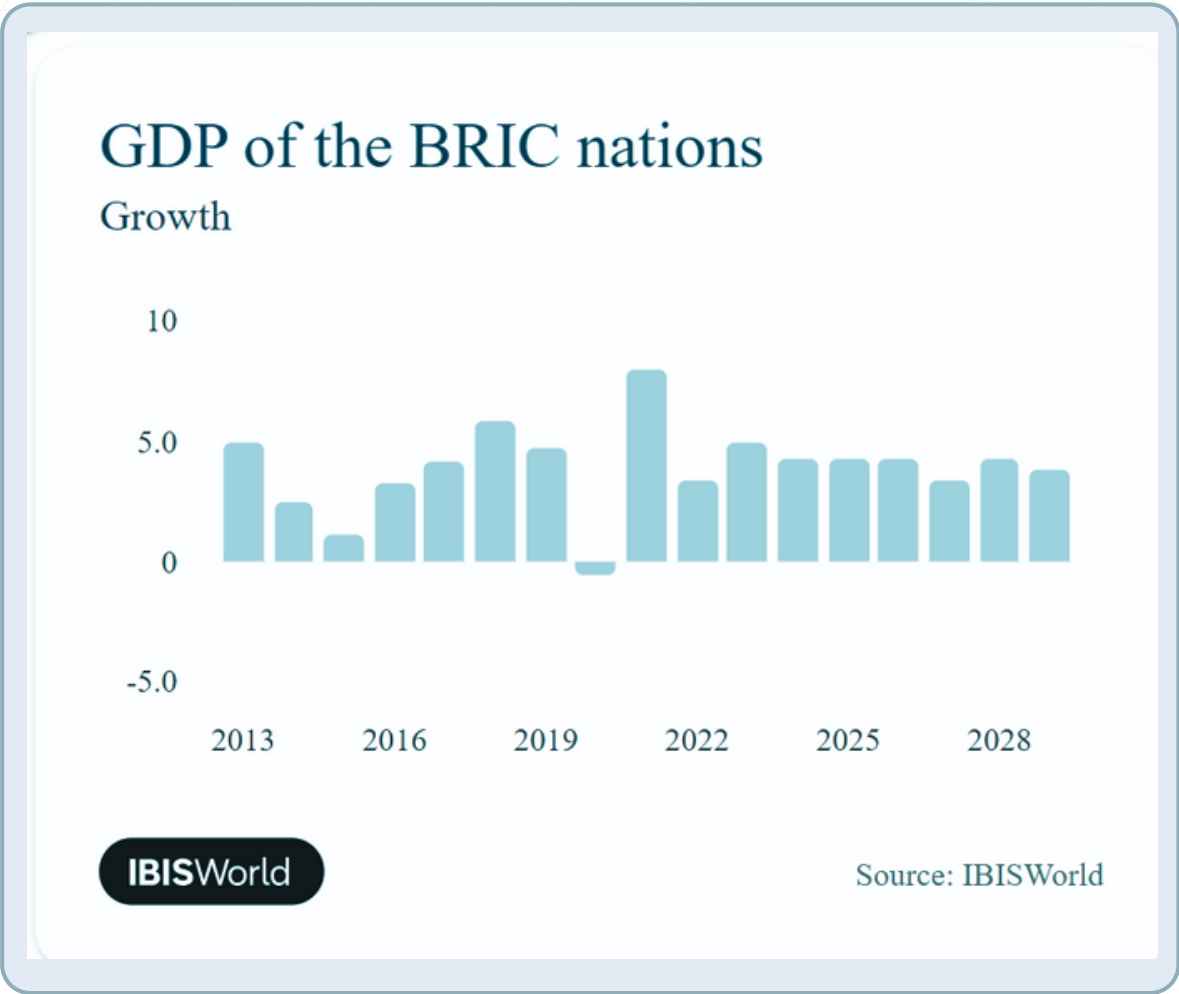
Industrial Growth Drivers:

1. Technological Advancements
2. R&D Investment
3. Semiconductor Demand
4. Capital Spending
5. Emerging Applications

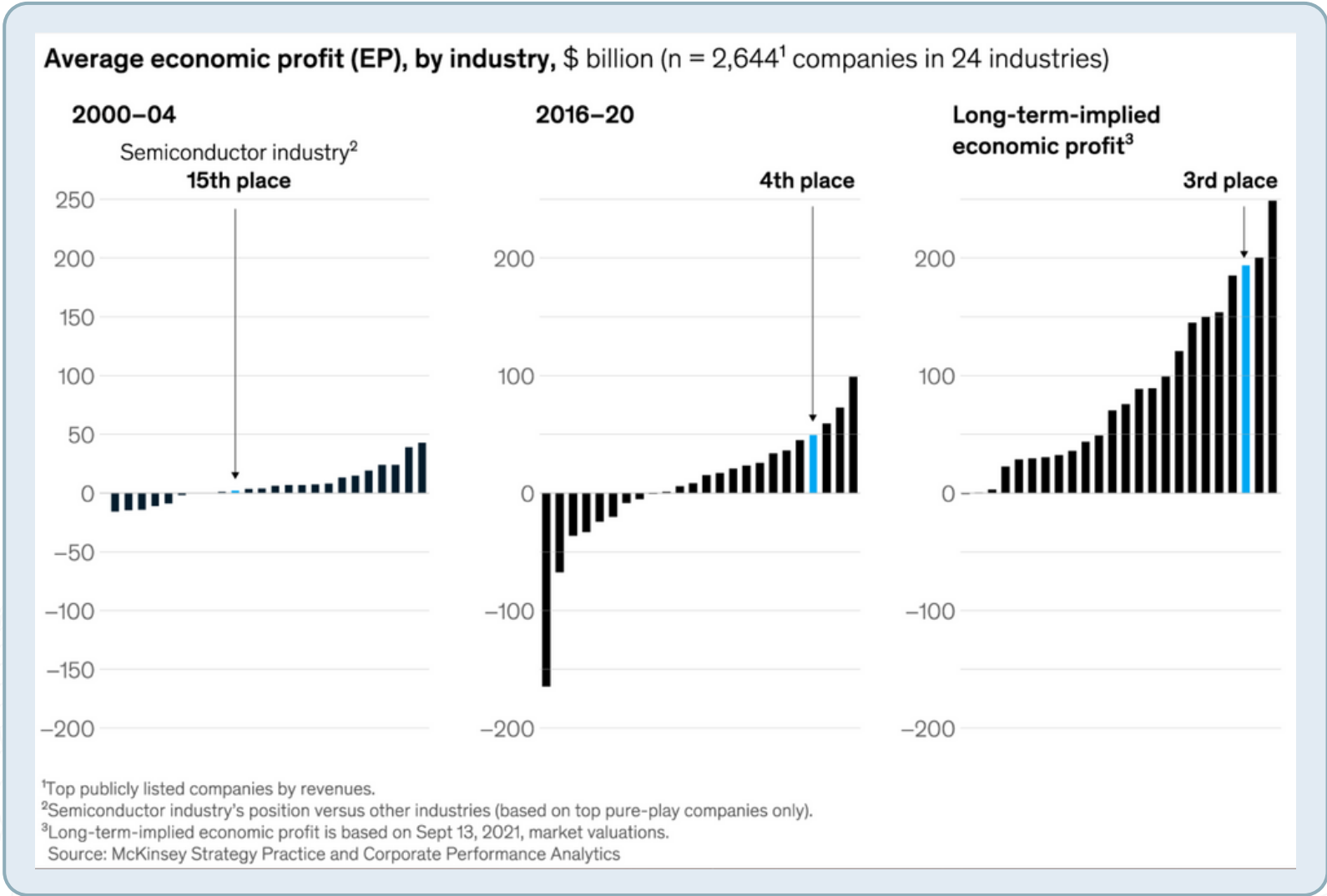
Macroeconomic Outlook

The **Biden administration** is expected to award billions of dollars to some of the leading semiconductor manufacturing companies in the world as part of its effort to help the United States compete with China and make its semiconductor factories.

The **CHIPS and Science Act** authorizes \$10 billion to invest in regional innovation and technology hubs across the country



Along with ongoing problems like insufficient capacity in semiconductor factories, the COVID-19 pandemic contributed to chip shortage as supply chains were heavily disrupted. Despite this, **profits improved** in the last decade due to **high demand** for microchips in many industries. This trend is expected to continue:



SWOT Analysis of Semiconductor Equipment Industry



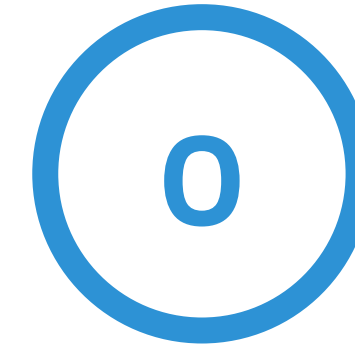
STRENGTHS

- Indispensable to automate information
- Demand generated from nearly every market segment.
- High barriers to entry:
 - High entry costs
 - Strong patent law
 - Need for skilled employees
- High Profit vs. Sector Average



WEAKNESSES

- High capital requirements and R&D investments required
- Cyclical nature
- Highly Competitive
- Substantial Reliance on outside vendors for components
- Small number of customers
 - High dependence on semiconductor market



OPPORTUNITIES

- Potential for high revenue growth
- Emerging Technologies
 - Increase use of AI
- Strategic Partnerships
 - Semiconductor companies, research institutions, etc.
- Expansion of Foundries



THREATS

- Trade disputes and regulatory changes
- Economic Downturn
- Currency risk for international operations
- Cybersecurity threats
- Maintenance and service training
 - Less aftermarket revenue

Overall: It is an attractive and profitable industry due to high demand for its products (high dependance), high growth potential and decreasing cyclical nature.



Company Profile



Axcelis doesn't merely product semi-conductor parts. It also provides **aftermarket lifecycle** products and services, i.e. used tools, spare parts, equipment upgrades, maintenance services, and customer training.

BACKGROUND

- Axcelis Technologies, Inc. (ACLS)
- Headquartered in Beverly, Massachusetts, United States
- Industry: Semiconductor Equipment & Materials
- Full Time Employees: 1,620

KEY EXECUTIVES



Russel Low
President & CEO



James Coogan
Executive VP & CFO



Gerry Blumenstock
Executive VP, Engineering



Lynnette C. Fallon
Executive VP, Legal



Douglas A. Lawson
Executive VP President

REVENUES/ OPERATING PROFITS

	12/31/2023	12/31/2022	12/31/2021	12/31/2020	12/31/2019
Total Revenues	1 130.604	919.998	662.428	474,560	342.958
Operating Profits	265.795	212.361	127.33	58.041	24.205

AXCELIS' PRODUCTS & SERVICES

The company offers ion implantation products which include high-current implanters, high-energy implanters and mid-current implanters. Axcelis ion implanters include single and multi-wafer processing capabilities for mid-dose, high-dose, and high-energy applications.

CAPITAL STRUCTURE

	Dec	'23	'22	'21	'20	'19
LT Debt/Total Equity		8.0	7.8	9.4	10.3	12.1
LT Debt/Total Capital		7.4	7.2	8.5	9.2	10.7
LT Debt/Total Assets		5.4	5.1	6.7	7.8	9.1
Total Debt/Total Assets (%)		5.9	5.8	7.4	8.4	9.8

Capital Structure

9 % Debt

	Dec	'23	'22	'21	'20	'19
Total Debt/Equity (%)		8.7	8.8	10.5	10.9	12.9
Net Debt/Total Capital		-45.7	-51.4	-40.1	-28.2	-18.1



AXCELIS' BUSINESS STRATEGY

- Focusing on **core technology** where they offering a range of ion implanters designed to meet the evolving needs of semiconductor manufacturers.
- Have a product portfolio where they can **serves diverse customer base** consisting of semiconductor manufacturers worldwide, including leading semiconductor foundries, integrated device manufacturers (IDMs), and outsourced semiconductor assembly and test (OSAT) companies.



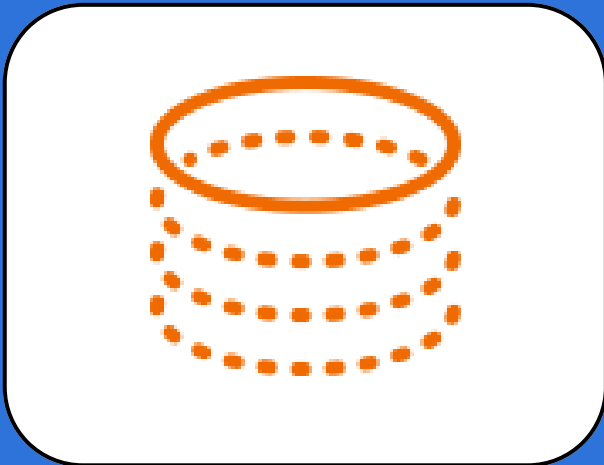
AXCELIS' BUSINESS THESIS

- The implant TAM has more than **DOUBLED** in the last few years
 - EV adoption is key to growth in these semiconductor segments
 - Around \$50 Billion annually in CAPEX is being spent on the mature markets
- Axcelis is extremely **well positioned** to benefit from mature process
 - Mature nodes have increasing implant intensity peaking at 28nm
 - Power devices and image sensors are highly implant intensive devices
- Axcelis is the implant leader in the **high growth** specialty device market segments
 - Axcelis is a only company with a complete family of implant products
 - Long term customer relationship



Purion Product Family

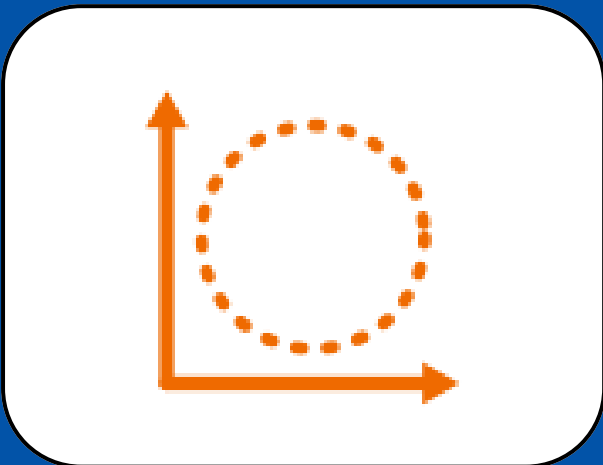
PURITY



no additional metals
contamination (Purion
Contamination Shield™)



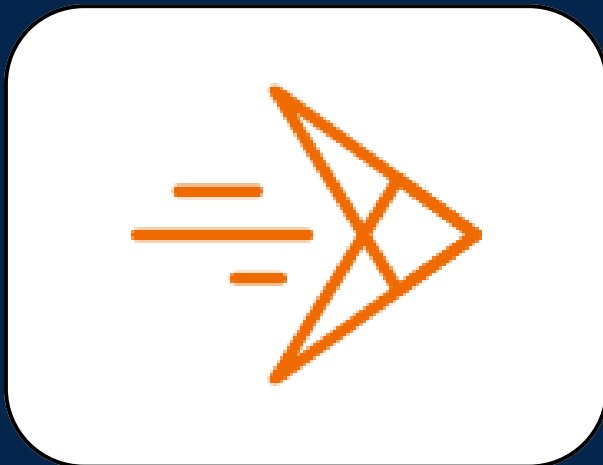
PRECISION



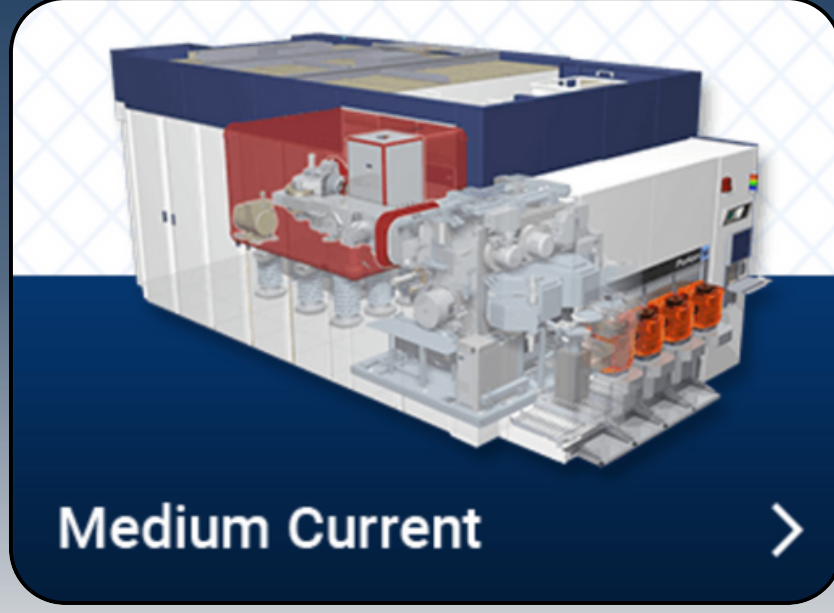
angle control system
ensuring highly precise
(Purion Vector™)



PRODUCTIVITY



IdealScan™
(high beam
current)



Axcelis operates in China, Germany, Italy, Japan, Korea, Malaysia, Singapore, Taiwan, and the US.



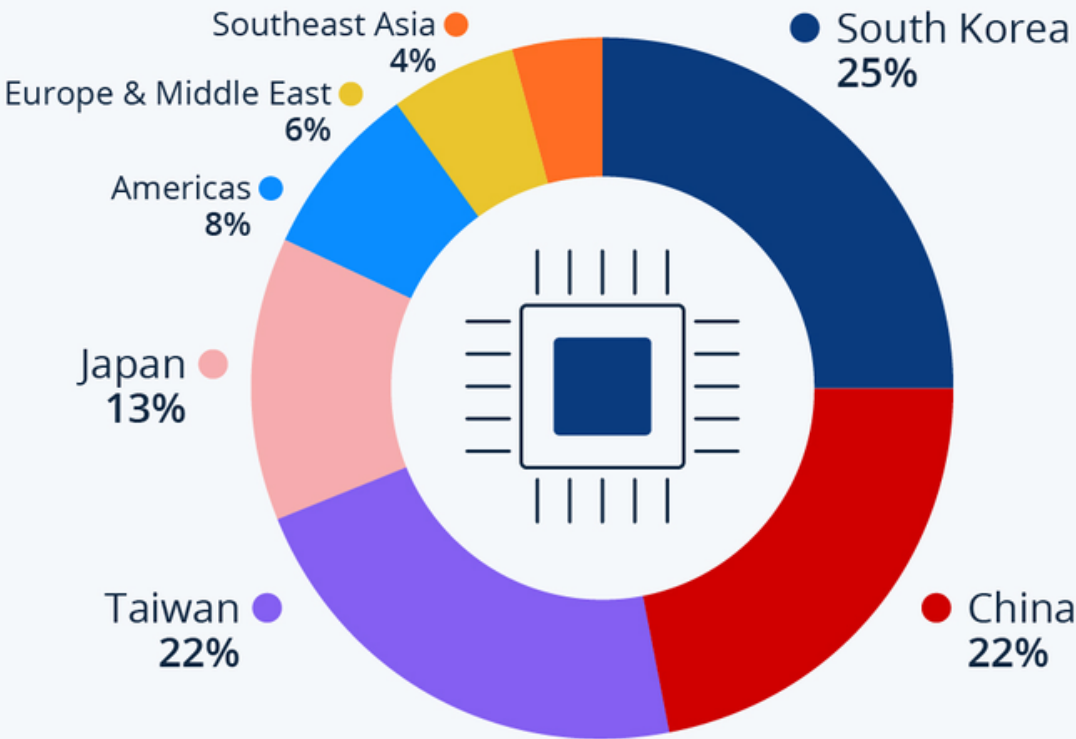
Axcelis
Advanced
Technology
Center
(Beverly,
Massachusetts,
USA)



Axcelis Asia
Operations
Center
(Pyeongtaek-
Si, Gyeonggi-
Do, Korea)

Where Can the Most Chips Be Manufactured?

Distribution of global semiconductor fabricating capacity in 2022, by location*



* 300mm fabs

Source: SEMI 300mm Fab Outlook to 2026



statista



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INVESTORS

News Release Details

Axcelis Announces Grand Opening of the Company's New Logistics Center in Beverly, MA

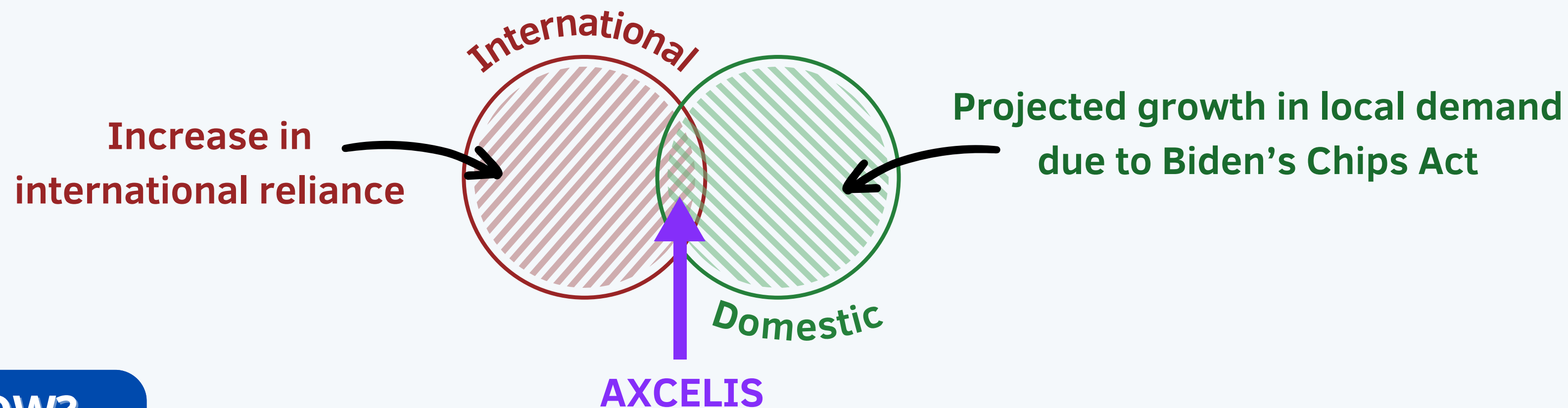
December 4, 2023 at 8:00 AM EST

New State-of-the-Art Facility Optimizes Operations and Provides Flex Capacity to Support Growth

BEVERLY, Mass., Dec. 4, 2023 /PRNewswire/ -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of enabling ion implantation solutions for the semiconductor industry, announced the grand opening of the Company's new Axcelis Logistics Center, located at 105 Sam Fonzo Drive, Beverly, MA. The Company celebrated this milestone event with a ribbon-cutting ceremony led by President and CEO Russell Low.



Investment Thesis



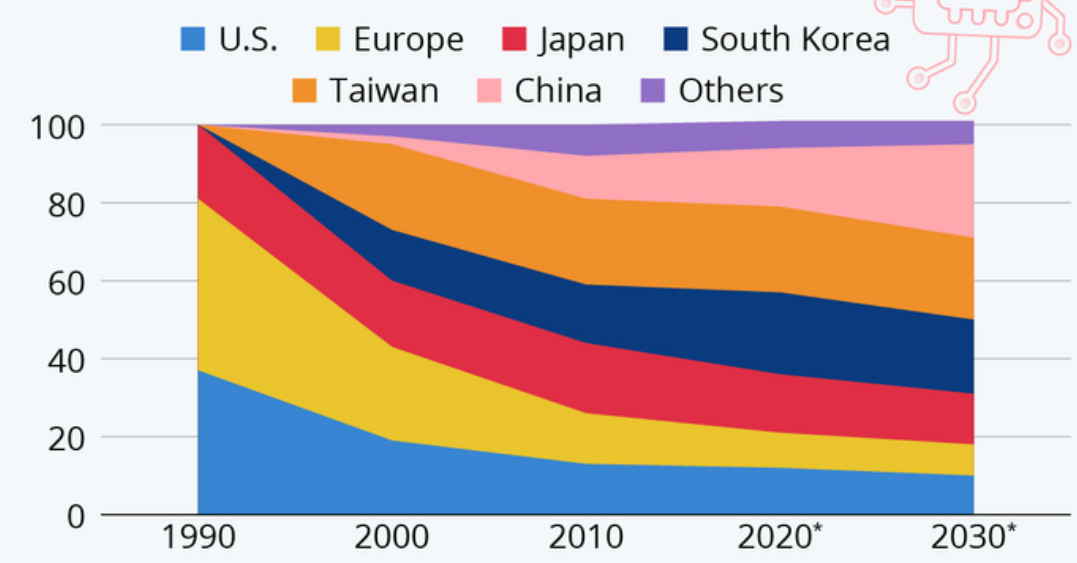
WHY NOW?

If the market is lagging and currently mispricing ACLS, we should take advantage of this unique opportunity before the market catches up!



Chip Production Shifts Away From Traditional Strongholds

Global semiconductor manufacturing by location (in percent)



* projection
Sources: Boston Consulting Group, Semiconductor Industry Association

(Bloomberg) -- President Joe Biden's administration plans to launch a \$5 billion semiconductor research consortium to bolster chip design and hardware innovation in the US and counter China's efforts to capture the cutting edge of the industry.

Officials on Friday are set to formally establish the National Semiconductor Technology Center, or NSTC, which marks the second major research and development investment from the 2022 Chips Act following a \$3 billion advanced packaging initiative.

Biden-Harris Administration Announces Preliminary Terms with Intel to Support Investment in U.S. Semiconductor Technology Leadership and Create Tens of Thousands of Jobs

Manufacturing

U.S. Department of Commerce Proposes up to \$8.5 Billion in Potential Direct Funding for Intel Under President Biden's Investing in America Agenda to Support Multiple Projects in Arizona, New Mexico, Ohio, and Oregon

Today, the Biden-Harris Administration announced that the U.S. Department

FOR IMMEDIATE RELEASE
Wednesday, March 20,
2024

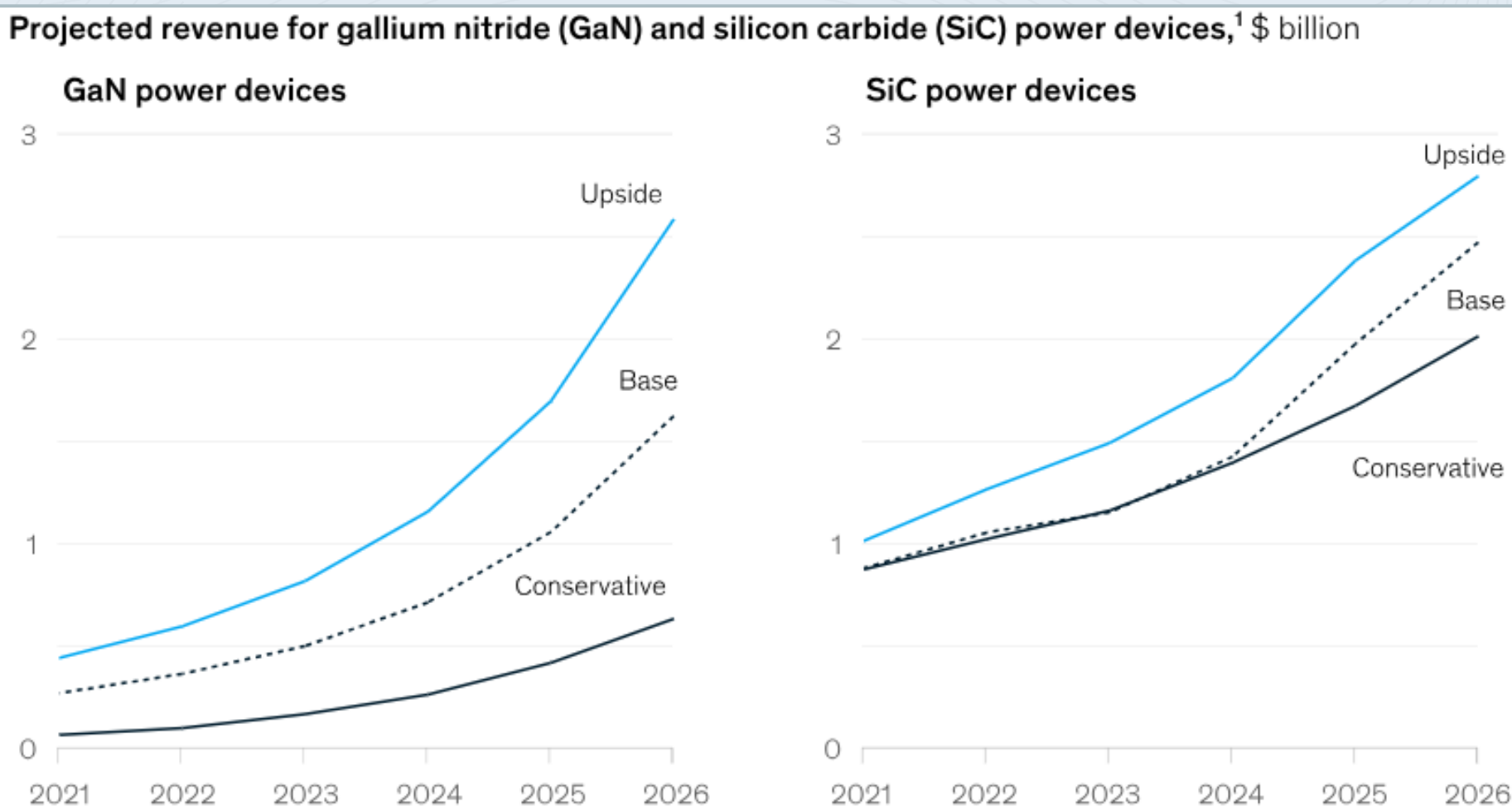
FORBES > SMALL BUSINESS

The Future Of Semiconductor Chip Manufacturing: North America's Opportunity With Mexico

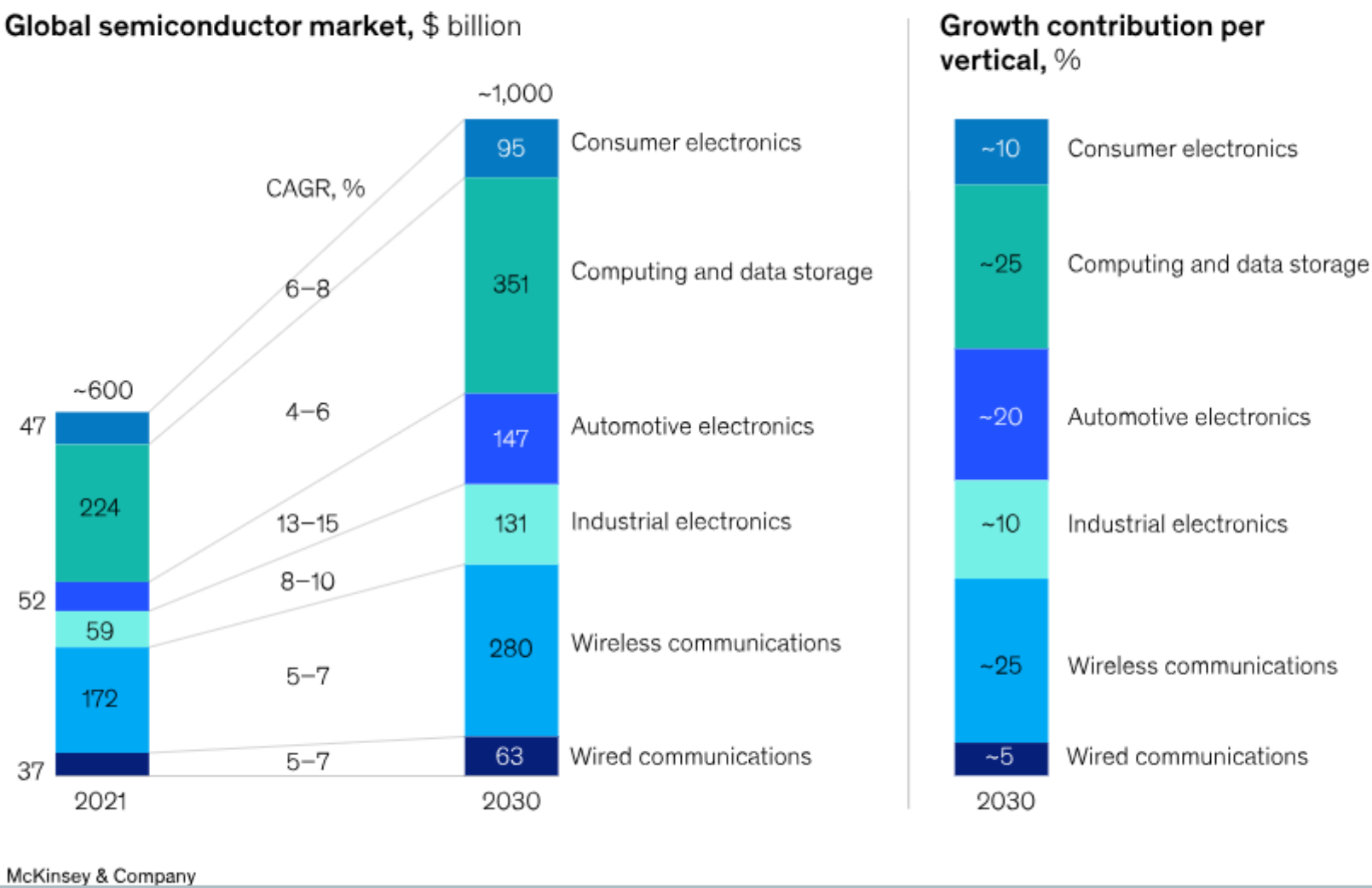
F Jorge Gonzalez Henrichsen Forbes Councils Member
Forbes Business Council COUNCIL POST | Membership (Fee-Based)

What's the potential for the semiconductor industry?

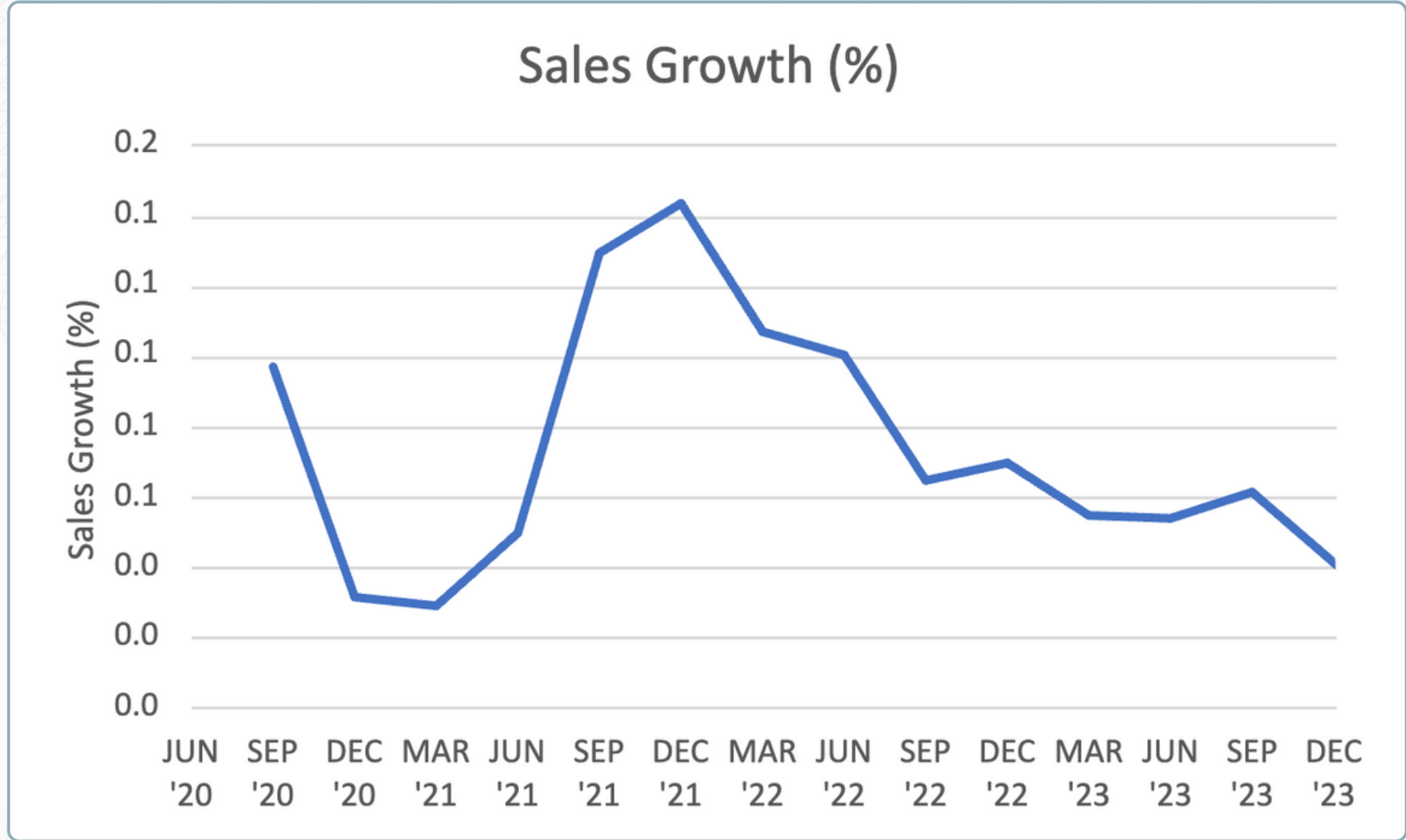
The world of the future runs on semiconductors. Trends such as remote working, the proliferation of artificial intelligence, and soaring demand for electric vehicles are reshaping the world we live in. Accordingly, the global semiconductor industry is poised for a decade of growth. McKinsey projects industry revenues to climb to \$1 trillion by 2030.



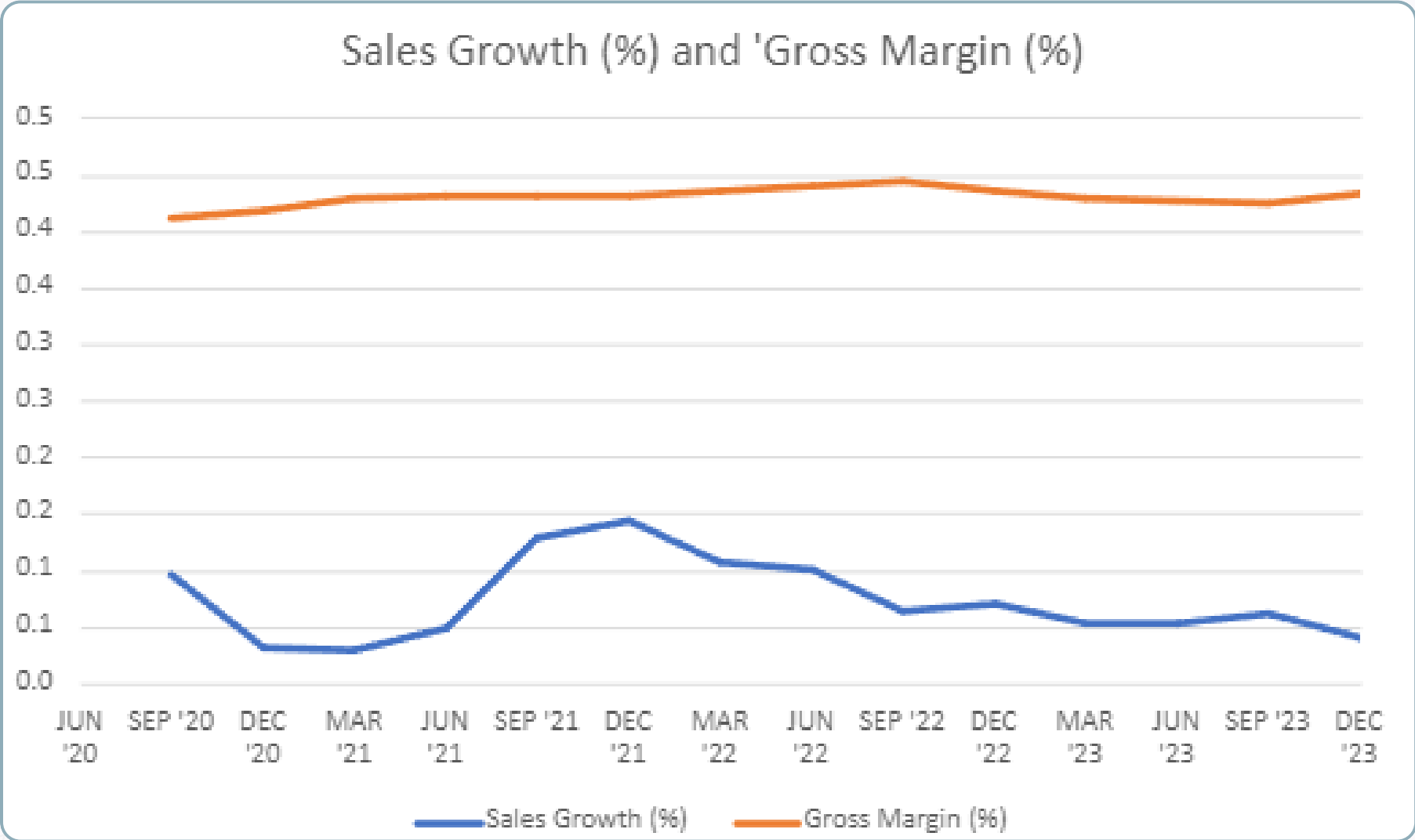
The semiconductor market is expected to reach \$1 trillion in value by 2030.



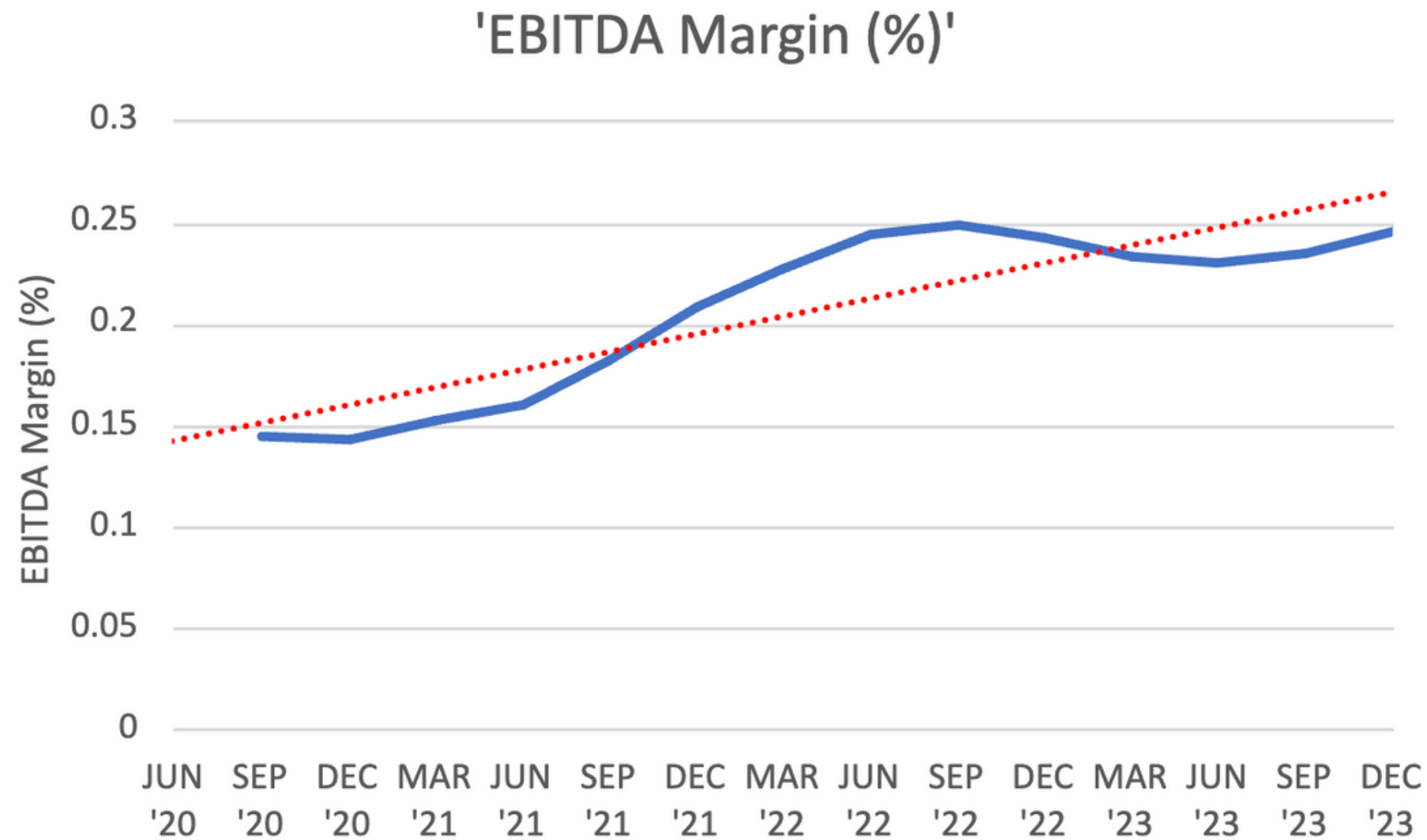
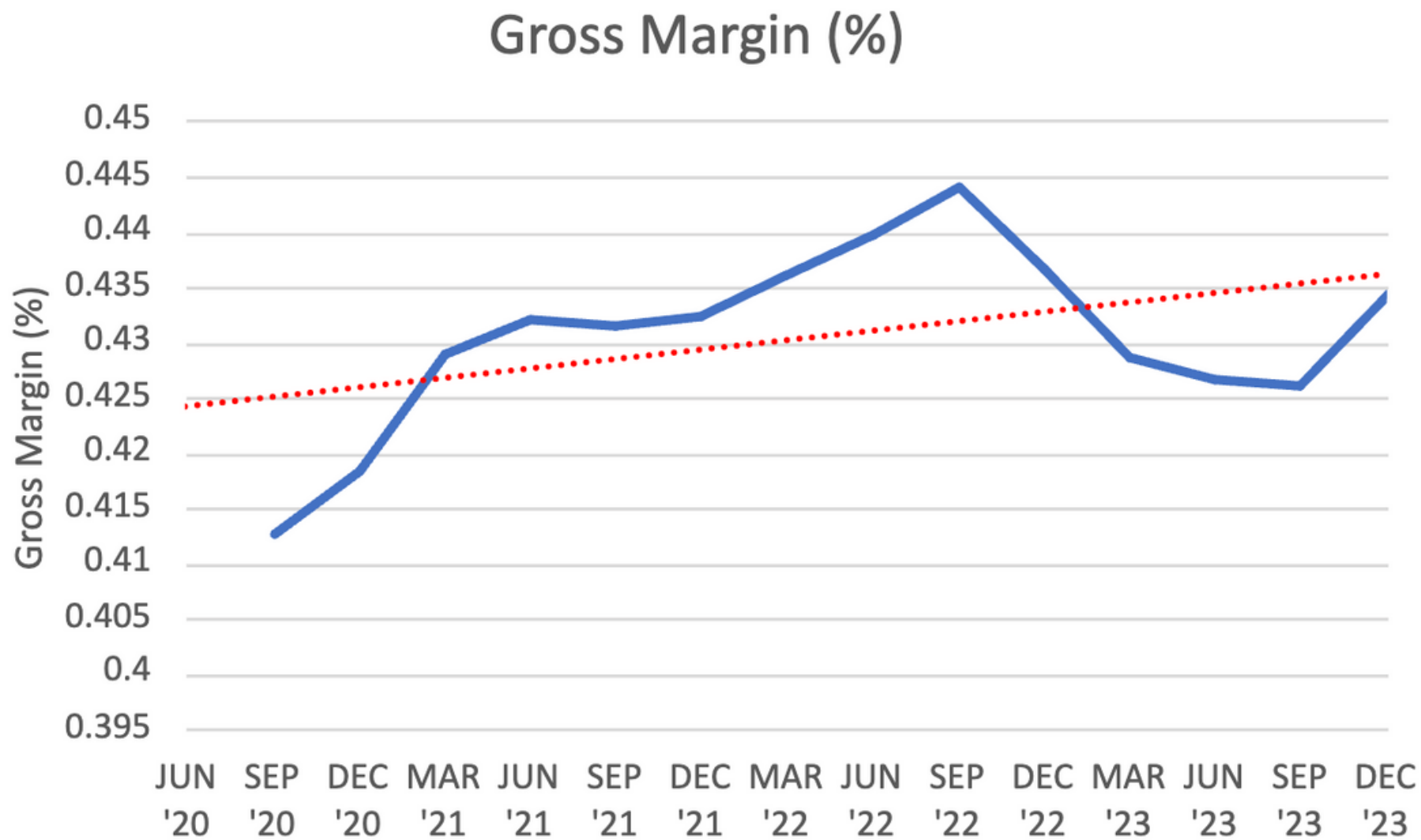
Volatile market due cyclicality



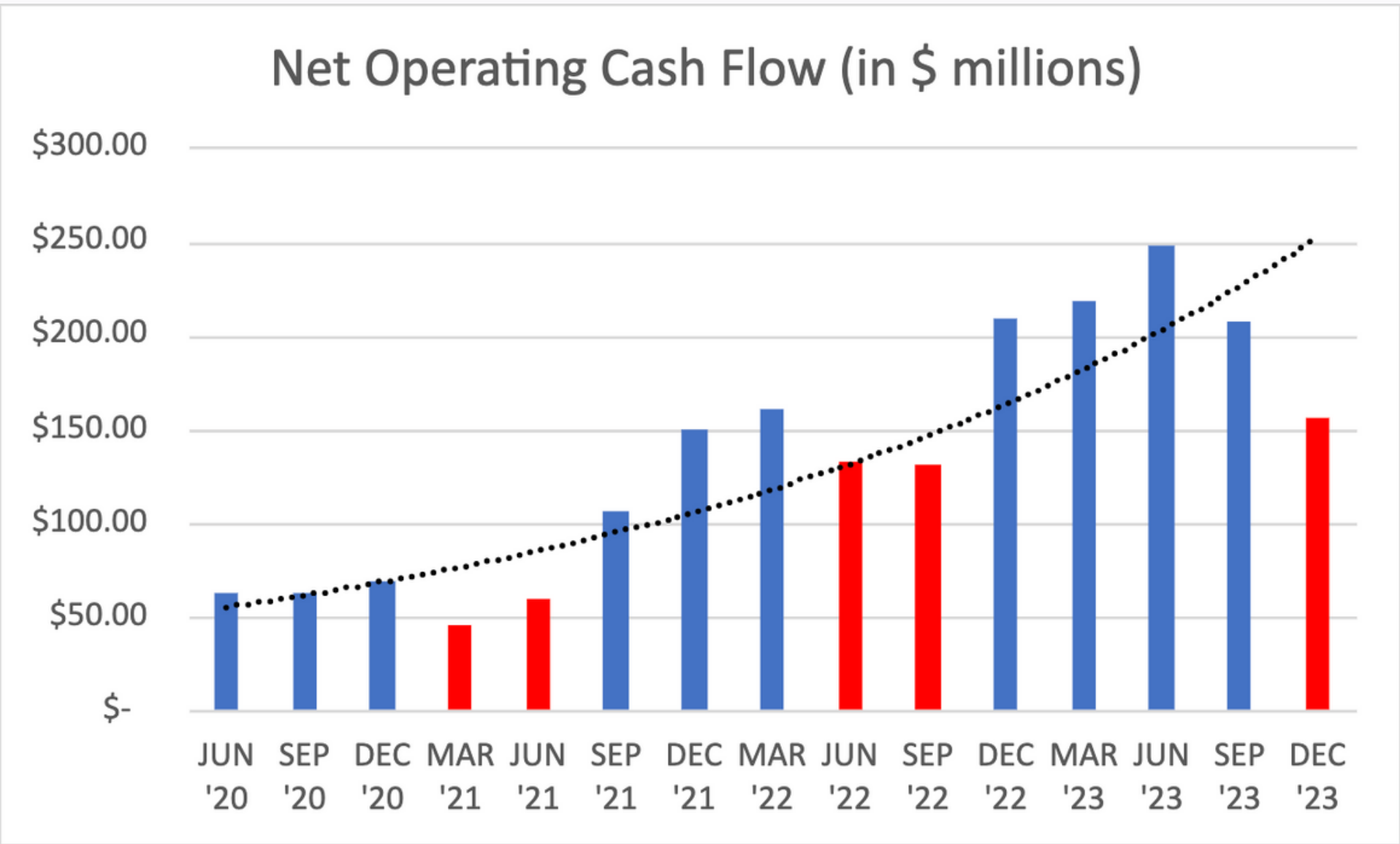
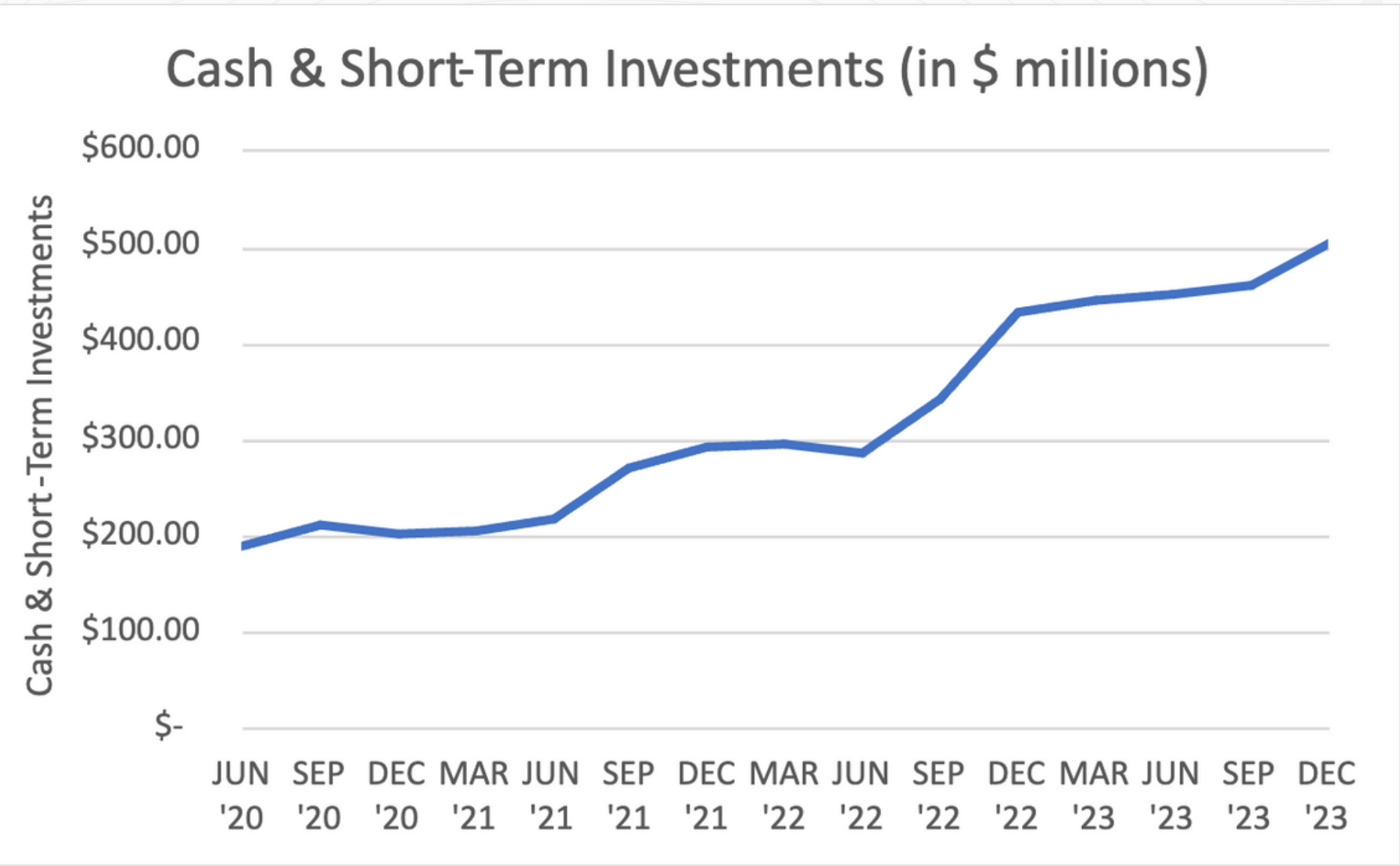
Demonstrates Operational Efficiency



Exhibits Axcelis's growth potential

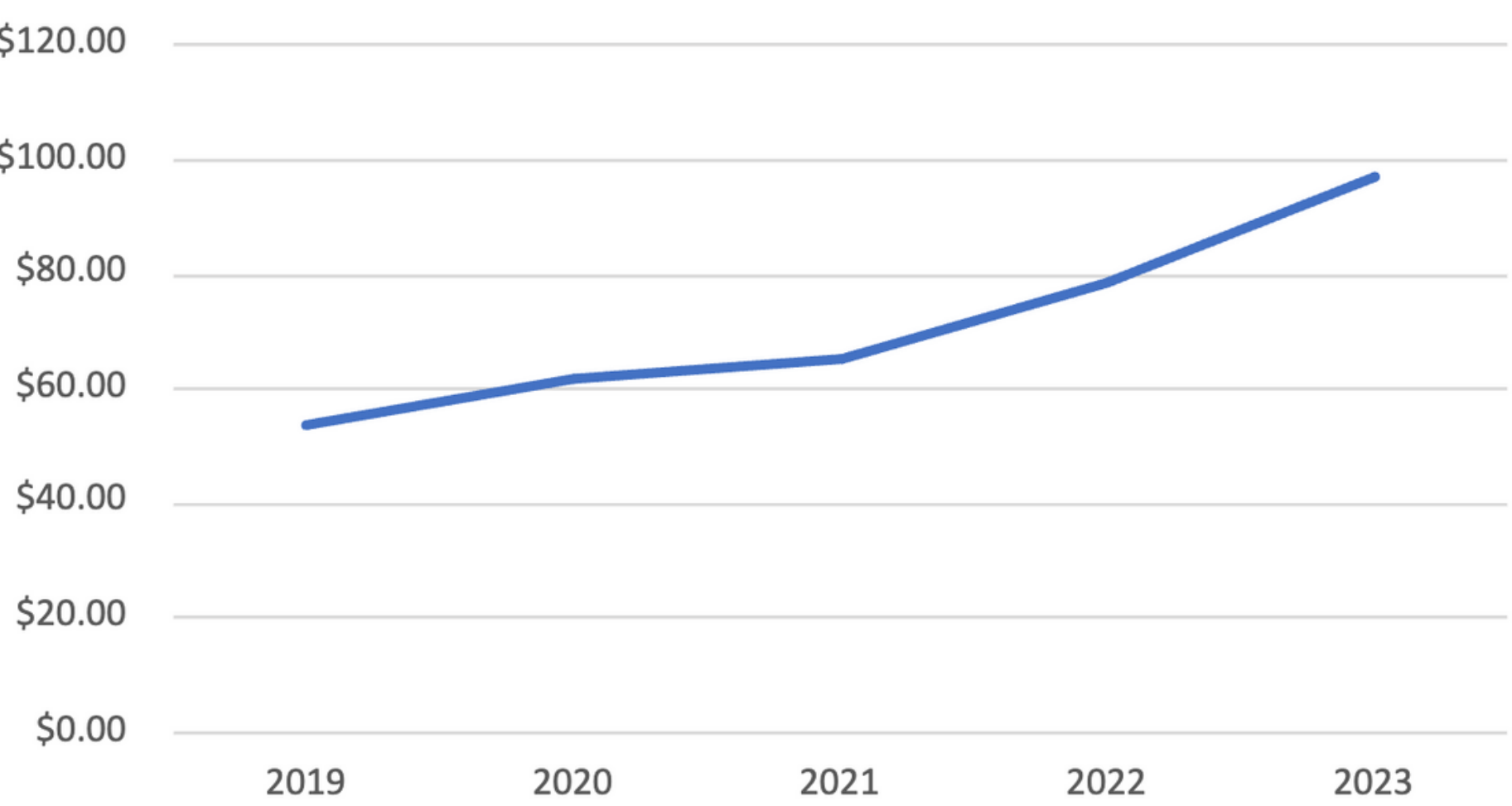


Healthy Cashflow and liquidity

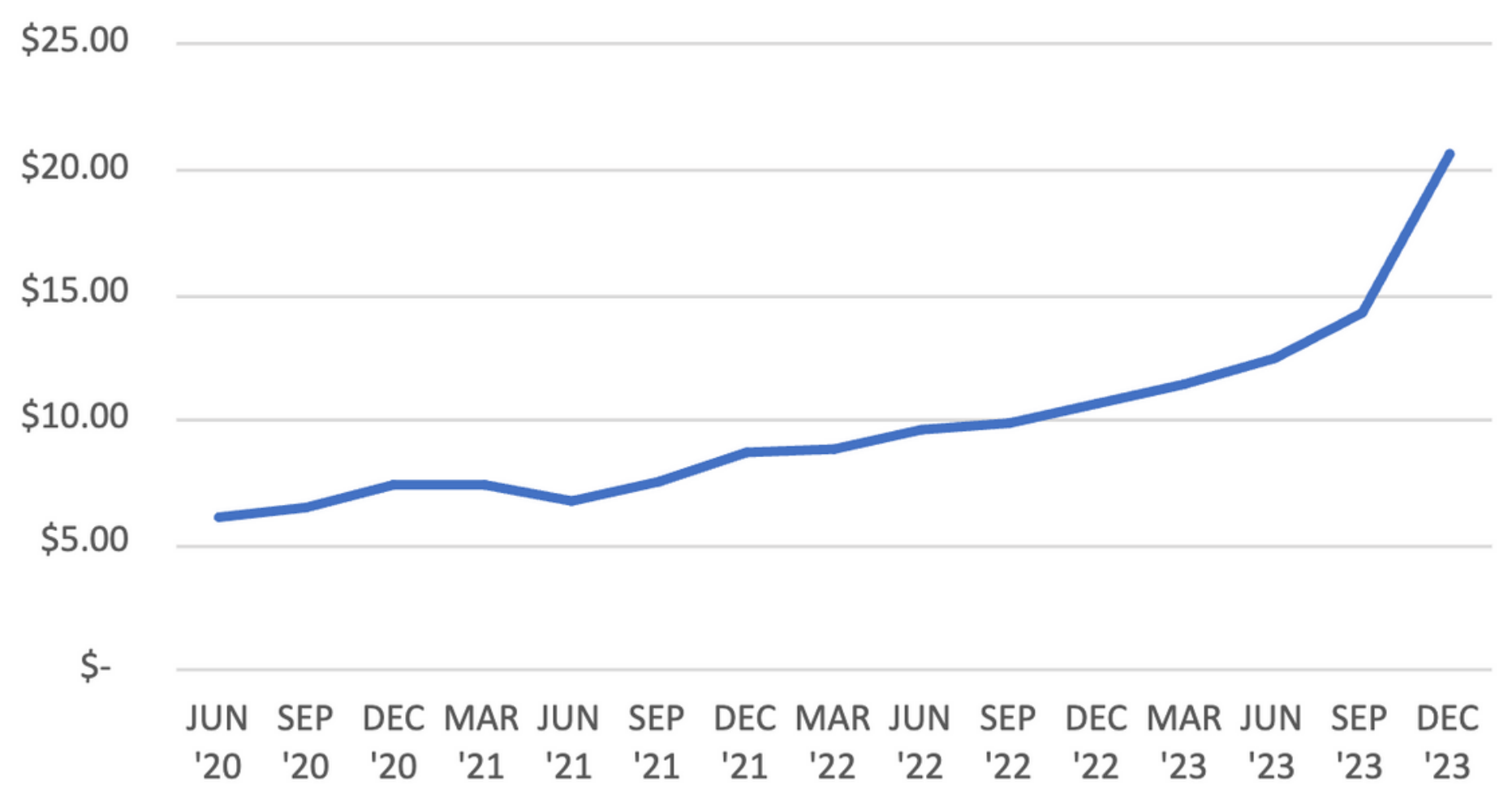


High and growing investment in the company

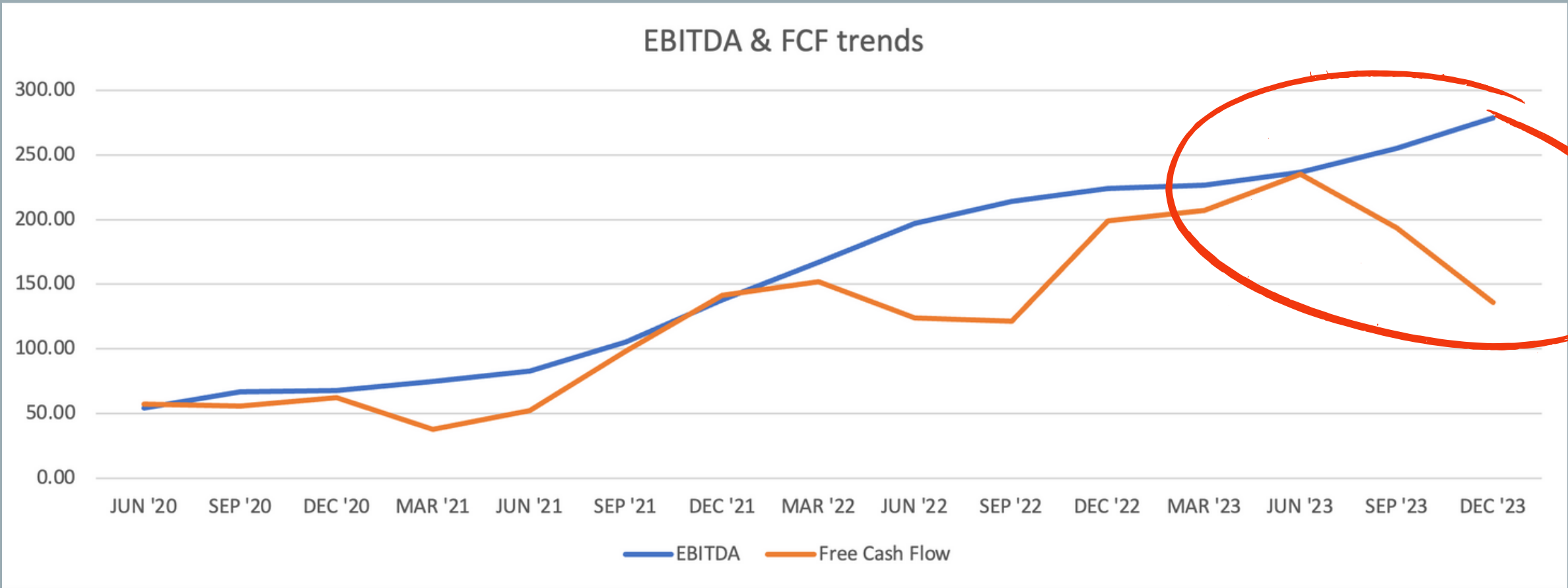
R&D (in \$ millions)



CapEx (in \$ millions)



Financial Ratios



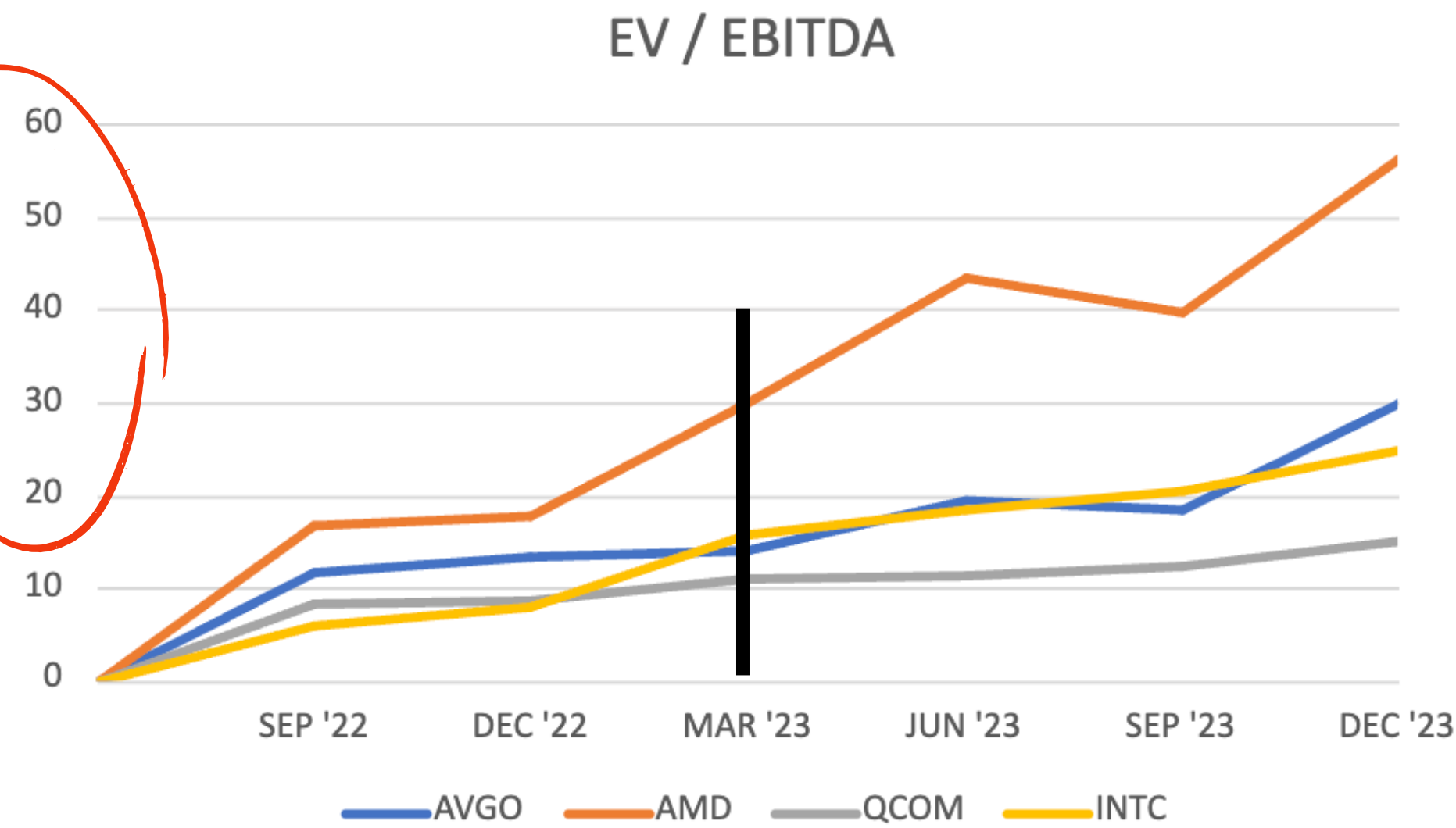
EBITDA & FCF Share Price



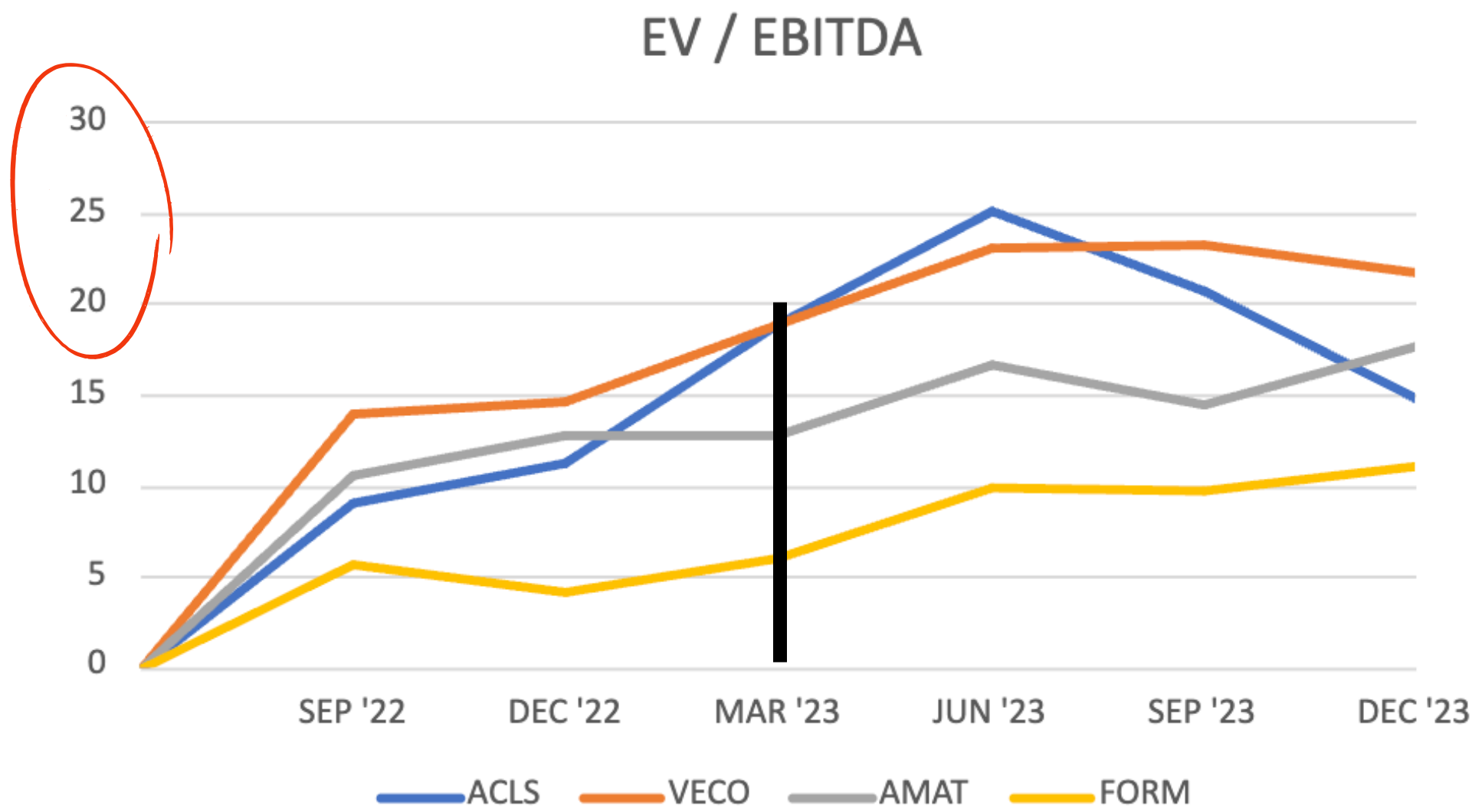
Financial Ratios - Misperception of Growth

The market is caught up in the semiconductor industry but overlooks the semiconductor equipment industry. Therefore it is **mispricing** the semiconductor equipment industry and temporarily **mispricing Axcelis**.

Semiconductors



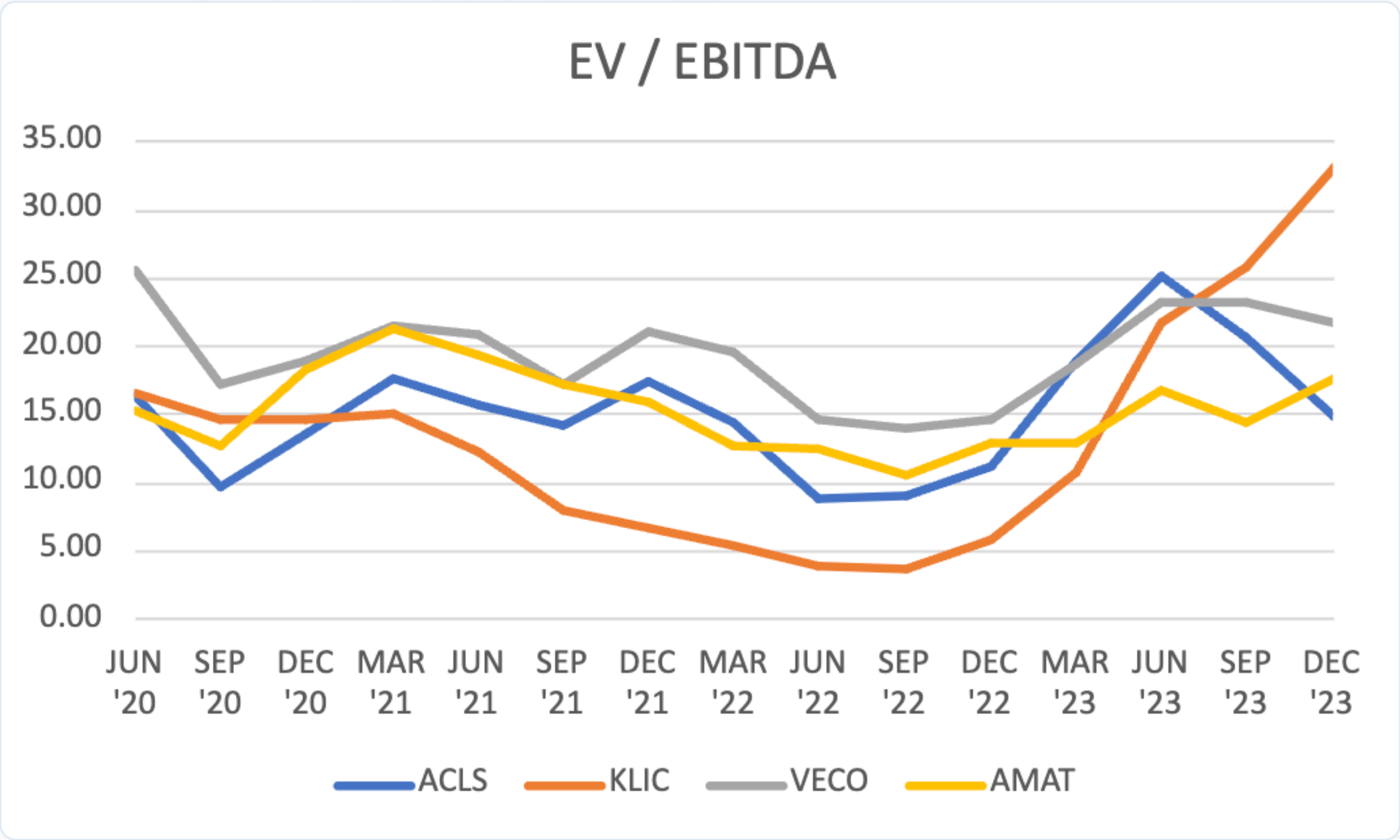
Semiconductor Equipment



Comparable Companies Analysis

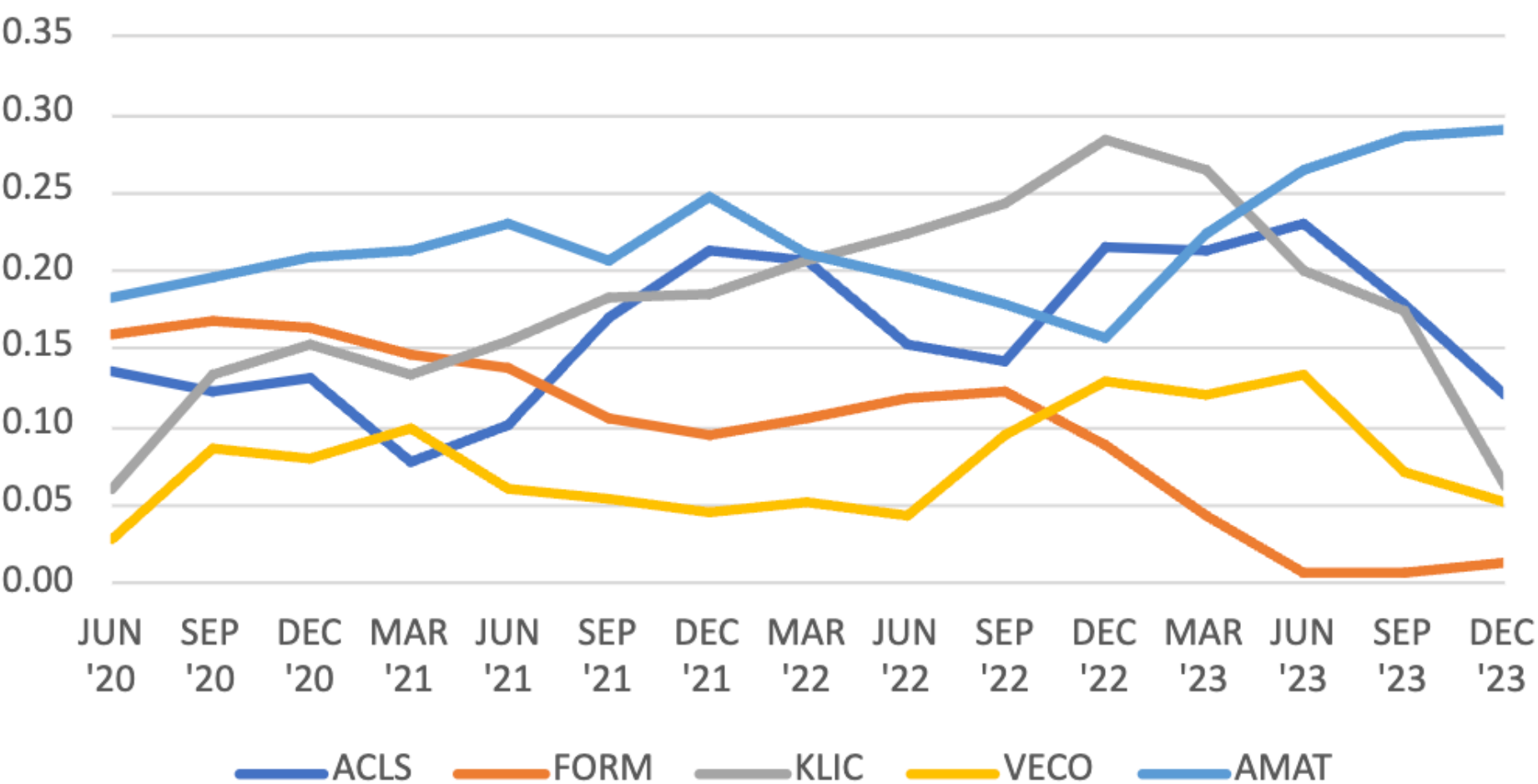
As of Sunday, March 17, 2024					market data		financial data
Company Name	Ticker	Micro Sector	Geography	# of employers	market cap (\$ in millions)	TEV (\$ in millions)	total assets (\$ in millions)
Axcelis Technologies	ACLS	manufacture of capital equipment for the semiconductor chip manufacturing industry	USA	1620 people	\$ 3,510.86	\$ 3,065.90	\$ 1,281.97
FormFactor	FORM	provision of test and measurement solutions for a few business segments one of which is micro-electromechanical systems technologies	USA	2115 people	\$ 3,308.80	\$ 3,086.06	\$ 1,106.79
Kulicke & Soffa Industries	KLIC	engages in the design, manufacture, and sale of semiconductor and electronics assembly solutions	USA	3025 people	\$ 2,681.84	\$ 2,072.47	\$ 1,499.78
Applied Materials	AMAT	provides manufacturing equipment, services, and software to the semiconductor manufacturers, display and related sectors	USA	34000 people	\$ 165,057.76	\$ 165,550.00	\$ 30,729.00
Veeco Instruments	VECO	development, manufacture, sale, and support of semiconductor process equipment	USA	1215 people	\$ 1,901.82	\$ 2,035.78	\$ 1,229.04

Growth Value

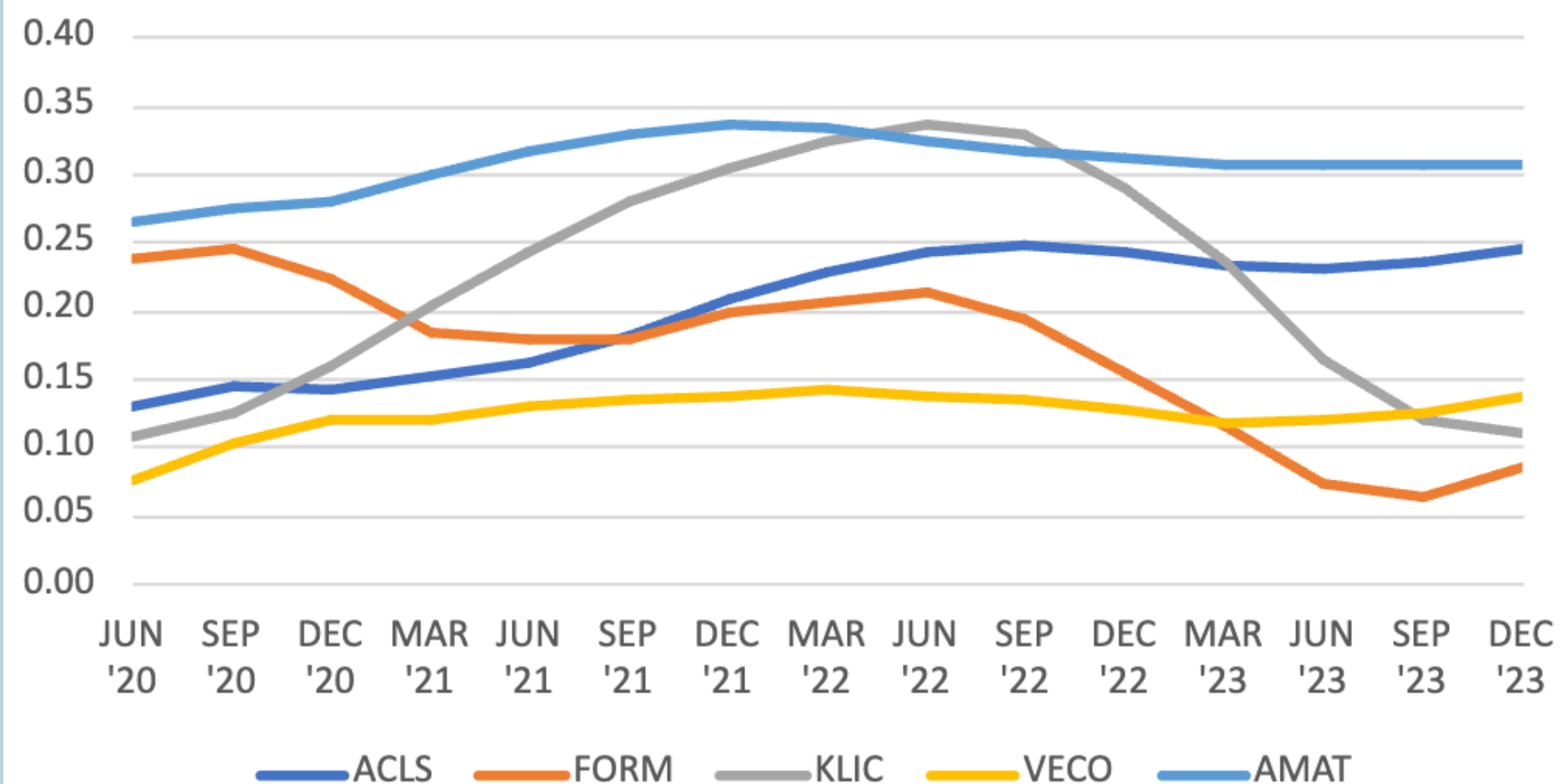


Efficiency

FCF / Sales



EBITDA / Sales



Weighted Average Cost of Capital (WACC)

<i>WACC = % of equity * cost of equity + % of debt * cost of debt * (1 - tax rate)</i>			
<i>cost of equity = risk free rate + beta * market risk premium</i>			
WACC		As of December 2023	
Equity			
	weighting of equity	91.03%	
	cost of equity	11.25%	
	adjusted beta		1.396
	market risk premium		5.00%
	10y Treasury Bills		4.27%
Debt			
	weighting of debt	8.97%	
	cost of debt	9.16%	
	tax rate	10.38%	
WACC		10.98%	



Valuation & Scenario Testing

Axcelis Technologies, Inc.			
Ticker	ACLS	Intrinsic Share Price	\$147.97
Date	3/27/2024	Today's Share Price	\$112.47
Assumptions			
Valuation Assumptions			
WACC	10.98%	Target Price	\$159.72
LTGR	3.00%	Upside (Downside)	32%

Final Ranges	min	max
Axcelis' EV →	\$3,005	\$39,684
Axcelis' Share Price →	\$108	\$642
Current Share Price	\$112	← March 27, 2024
Share Price based on DCF	\$148	
Target Share Price	\$160	
Upside Potential	32%	
WACC	11.0%	
Current EV (in millions)	\$3,184	← March 27, 2024

Worst / Base / Best

Scenarios	Worst	Base	Best
LTGR	1%	3%	5%
Share Price	\$107	\$148	\$195
Upside/Downside	-4%	32%	74%

Investment Recommendation:

 **Buy**

Upside: 32%

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