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UPDATE

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Semiconductors | North America

Semiconductor Inventory Tracker: Not Restocking Yet

Supply chain inventory rose q/q but outperformed seasonality, with below-seasonal producer builds and distributor declines. Supply is tightening, but meaningful restocking has yet to emerge.

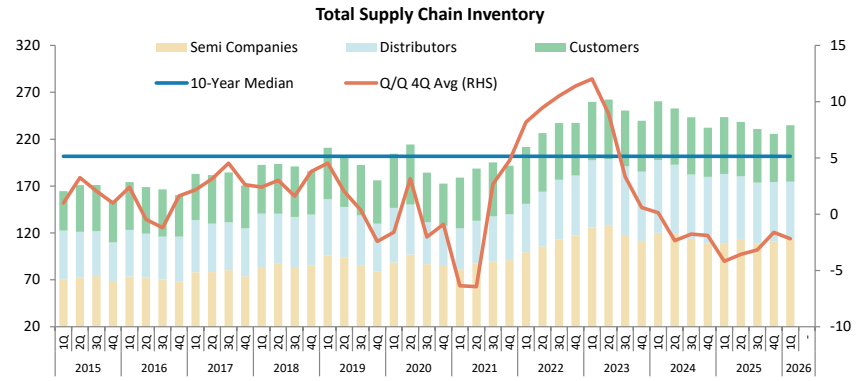
Key Takeaways

- Overall supply chain outperformed seasonality, increasing by less than the typical 1Q increase.
- Producer and disti DOIs outperformed seasonality; customers were ~in-line.
- Auto OEM DOI moved above historical median, while Auto Supplier DOI declined to in-line with historical levels.

Overall supply chain inventory increased q/q in 1Q, but the build was below typical 1Q seasonality. We remain above historical median levels, as distributors declined and producers built less than seasonal levels, while customers were ~in-line. While this is a step in the right direction, we still remain 33 days above historical median for the supply chain, and have not yet seen a broader restocking cycle.

The quarter reflected a mix of normal 1Q inventory build and continued discipline across the supply chain rather than broad restocking. Distributors continue to lean out, producer builds remain relatively steady, and customer trends were mixed. For stocks, we prefer areas where supply/demand is tightening or inventory risk is more defensible, including premium-end analog exposure in ADI and NXP, compute/networking names NVDA, AVGO, and CBRS, memory names MU and SNDK, and semicap names MKSI, KLAC, LRCX and ONTO.

Exhibit 1: Stacked DOI increased 9 days vs. a seasonal 19-day increase and is 33 days above the historical median. Trailing decreased ~2 days.



Source: FactSet, Morgan Stanley Research

MORGAN STANLEY & CO. LLC

Joseph Moore
Equity Analyst
Joseph.Moore@morganstanley.com +1 212 761-7516

Nicole Kozhukhov
Research Associate
Nicole.Kozhukhov@morganstanley.com +1 212 761-1636

Ella Tulchinsky
Research Associate
Ella.Tulchinsky@morganstanley.com +1 212 761-2222

Shane Brett
Equity Analyst
Shane.Brett@morganstanley.com +1 212 761-1022

Mason Wayne
Research Associate
Mason.Wayne@morganstanley.com +1 212 761-6012

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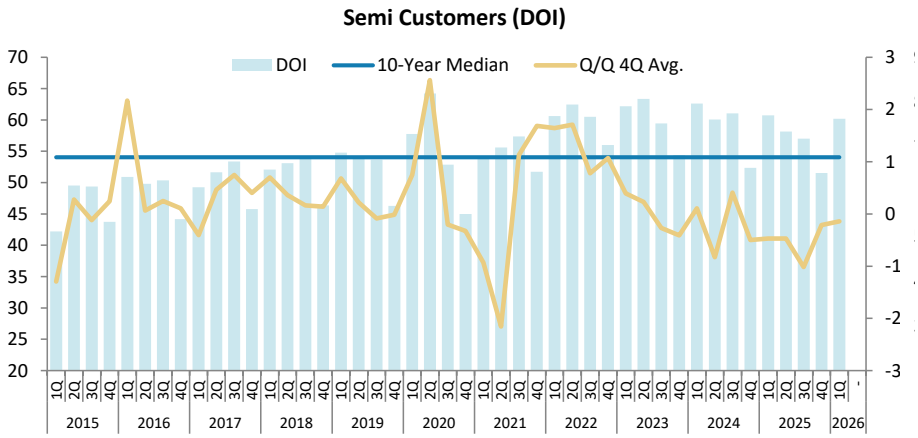
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Supply Chain Inventory Overview

Supply chain inventory increased q/q in 1Q, but by less than typical seasonality, with customer inventory ~in-line, distributors declining, and producers building less than seasonal levels. Total supply chain DOI increased 9 days q/q vs. a seasonal increase of 19 days, leaving DOI 33 days above the historical median. The improvement was led by distributor lean-out and muted producer builds, while customers were mixed by end market.

Semiconductor customer inventory increased by 9 days, ~in-line with the seasonal increase of 8 days, and now sits above the historical median by 6 days. The only semi customer where DOI decreased was Auto Suppliers (-1 day). Communications (+17 days) and ODMs (+16 days) saw the largest increases q/q. Storage remains slightly below its historical median, while other customers are now in-line (Auto suppliers, Auto OEMs, Consumer) or above (Industrials, Machinery, Computing/Mobile, Contract Manufacturers, and ODMs). Trailing four-quarter inventory increased from last quarter.

Exhibit 2: Semi Customer DOI increased 9 days sequentially to 60 days vs a seasonal increase of 8 days. DOI is above the historical median and trailing 4 quarters increased from last quarter.



Source: FactSet, Morgan Stanley Research

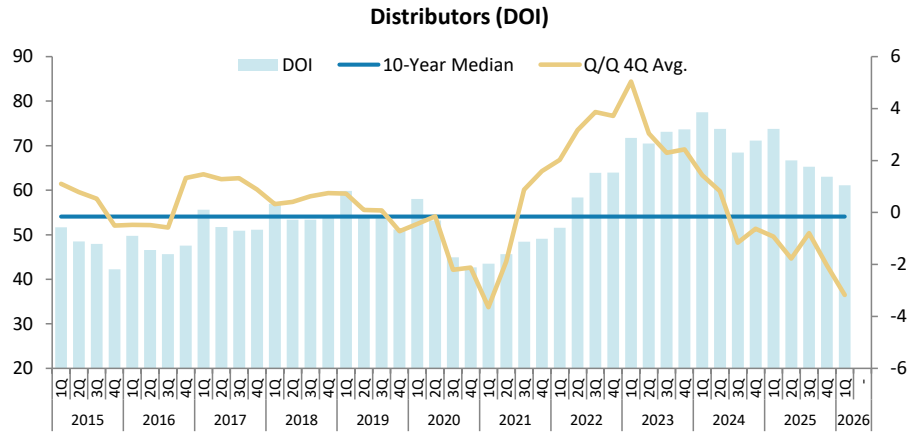
Exhibit 3: Sequential and y/y change in semi customer inventory levels

		Q/Q		Y/Y	
		Change in DOI	Change in $ Inventory	Change in DOI	Change in $ Inventory
Customers	AUTO OEMS	7	7%	-1	3%
	AUTO SUPPLIERS	-1	1%	-2	2%
	US INDUSTRIALS	8	4%	-4	7%
	MACHINERY	5	7%	-10	9%
	COMMUNICATIONS	17	11%	6	21%
	COMPUTING/MOBILE	11	27%	3	42%
	STORAGE	0	1%	-12	4%
	CONSUMER	4	-5%	-6	-7%
	CONTRACT MANUFACTURERS	13	8%	-5	24%
	ODM'S	16	45%	13	108%
	TOTAL	**9**	**11%**	**-1**	**15%**

Source: FactSet, Morgan Stanley Research

Distributor inventory decreased by 2 days q/q, below a seasonal increase of 4 days, but still sits 7 days above the historical median of 54 days. DOI declined q/q at WPG and Avnet, driven by COGS growth outpacing inventory growth (WPG: inventory +18% vs. COGS +21%; Avnet: inventory +3% vs. COGS +13%), while Arrow's DOI increased by 2 days. Absolute $ of inventory increased for each distributor. Trailing 4-quarter decreased in the first quarter. *(Arrow and Avnet are not covered by Morgan Stanley Research. WPG is covered by Daniel Yen.)*

Exhibit 4: Distributor inventory is at 61 days, down 2 days q/q, below the seasonal increase of 4 days. DOI is 7 days above the historical median while trailing 4-quarters decreased sequentially.



Source: FactSet, Morgan Stanley Research

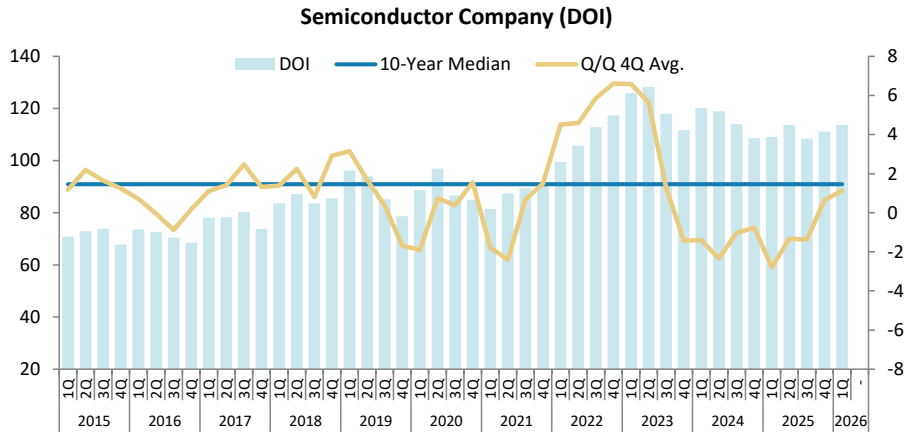
Exhibit 5: Sequential and y/y change in distributor inventory levels

		Q/Q		Y/Y	
		Change in DOI	Change in $ Inventory	Change in DOI	Change in $ Inventory
Distributors	Distributors	-2	11%	-13	11%

Source: FactSet, Morgan Stanley Research

Semiconductor company inventory days went up by 2 days q/q, below the seasonal increase of 5 days, and is now 23 days above the historical median. The DOI increase was driven by Smartphones (20.8%) and Foundries (10.8%), while other sectors showed marginal changes in the range of -3.5% (Semi Cap Equipment) to +1.9% (Computing). Change in absolute $ inventory was broadly up across the board both q/q and y/y, with the exception of Memory holding ~flat y/y. Trailing 4-quarters DOI across semi companies slightly increased in 1Q.

Exhibit 6: Semiconductor Company inventory is at 114 days, up 2 days q/q, below the seasonal increase of 5 days. DOI is 23 days above the historical median and trailing 4-quarters increased.



Source: FactSet, Morgan Stanley Research

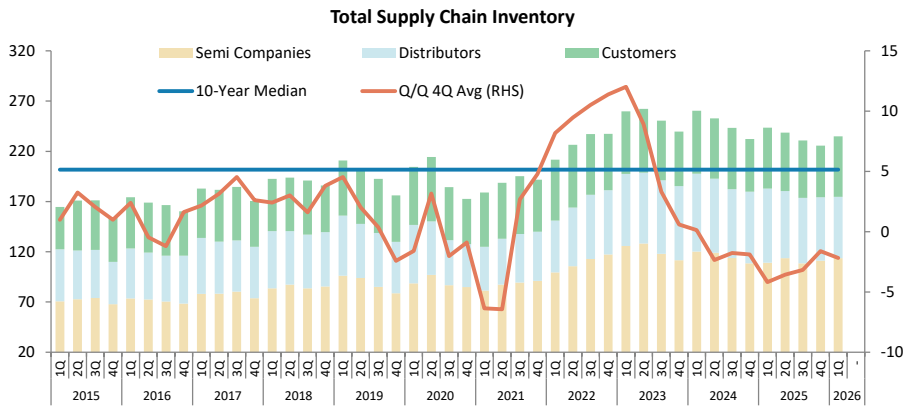
Exhibit 7: Sequential and y/y change in semi company inventory levels

		Q/Q		Y/Y	
		Change in DOI	Change in $ Inventory	Change in DOI	Change in $ Inventory
Semi Companies	Computing	2	13%	31	54%
	Analog/MCU	-2	0%	-9	5%
	Smartphones/Networking/PLD's/I	21	10%	28	31%
	Memory	0	3%	-40	-1%
	Foundries	8	6%	1	15%
	Semi Cap Equipment	-6	0%	-24	5%
	Components	0	10%	-2	25%
	Others	1	3%	3	5%
	TOTAL	**2**	**5%**	**5**	**16%**

Source: FactSet, Morgan Stanley Research

Total supply chain DOI across producers, distributors, and consumers increased 9 days q/q, increasing 10 days less than seasonality, and is now tracking 33 days above the historical median. Distributor and Company DOI both outperformed seasonality, with Distributors showing the greatest seasonal difference, decreasing by 2 days compared to a seasonal increase of 4. Customers DOI was ~in-line with seasonality, increasing by 1 day more than seasonal levels. Distributors in particular appear to be leaning out, driven by high COGS and revenue growth. Trailing 4-quarter DOI average was ~flat for the supply chain overall.

Exhibit 8: Total supply chain inventory increased 9 days q/q, less than the seasonal increase of 19 days. DOI is 33 days above the historical median, and trailing 4-quarters was flat.



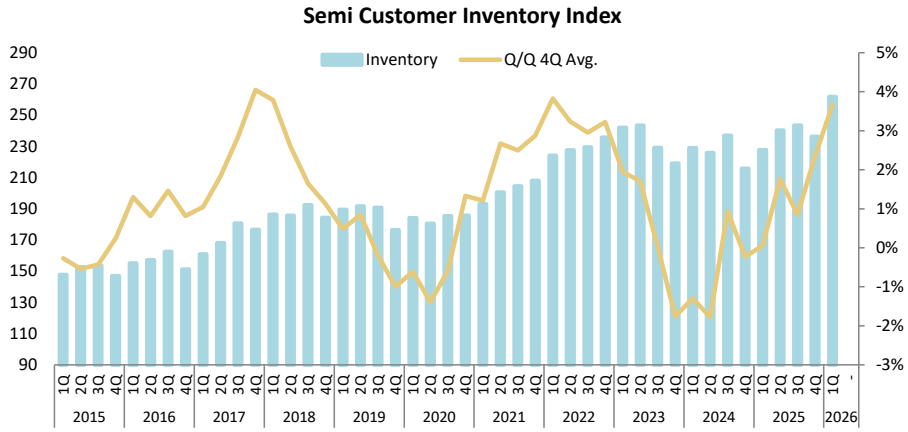
Source: FactSet, Morgan Stanley Research

Semi Inventory Analysis: DOI ~flat at Customers, lower at Producers and Distributors.

Customer Inventory

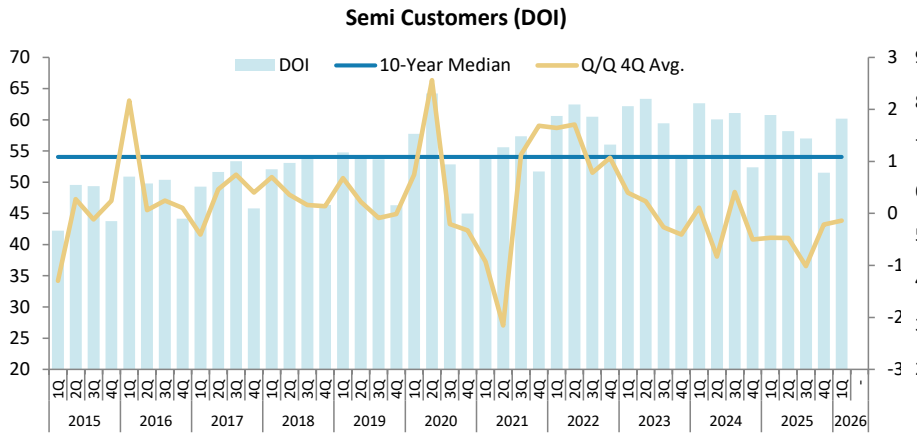
Semi customer inventory DOI increased more than seasonality. Absolute inventory levels increased q/q for all end markets except for Consumer. COGS decreased in Auto OEMs, US Industrials, Communications, Computing/Mobile, Consumer, and Contract Manufacturers, and increased in Auto Suppliers, Machinery, Storage, and ODM's.

Exhibit 9: Semi Customer Inventory Index increased 10.8% and trailing 4-quarters increased 3.7%.



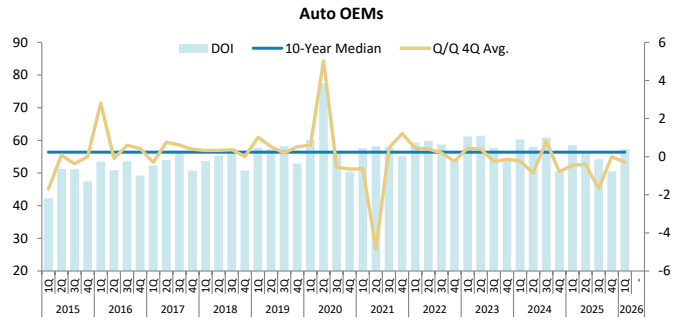
Source: FactSet, Morgan Stanley Research

Exhibit 10: Semi Customer DOI increased 9 days sequentially to 60 days vs a seasonal increase of 8 days. DOI is above the historical median and trailing 4 quarters increased from last quarter.



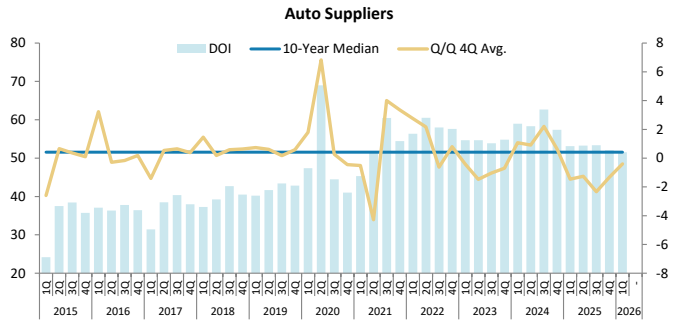
Source: FactSet, Morgan Stanley Research

Exhibit 11: Auto OEM DOI increased 7 days q/q and is above the historical median (56). Trailing 4-quarters decreased from last quarter.



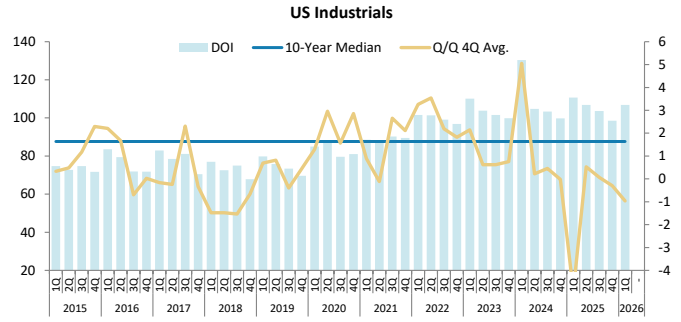
Source: FactSet, Morgan Stanley Research

Exhibit 12: Auto suppliers DOI decreased 1 day q/q and is in-line with the historical median. Trailing 4-quarters increased q/q.



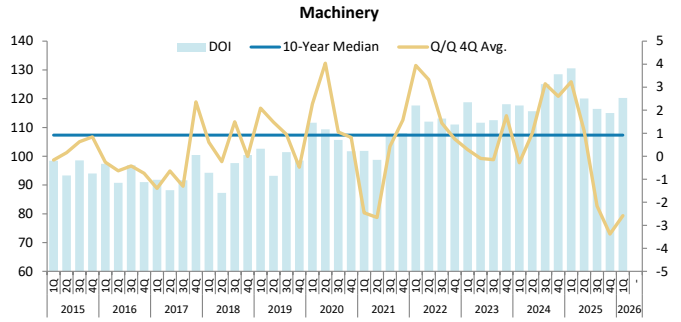
Source: FactSet, Morgan Stanley Research

Exhibit 13: Industrial DOI increased 8 days q/q, tracking 19 days above the historical median. Trailing 4-quarters declined q/q.



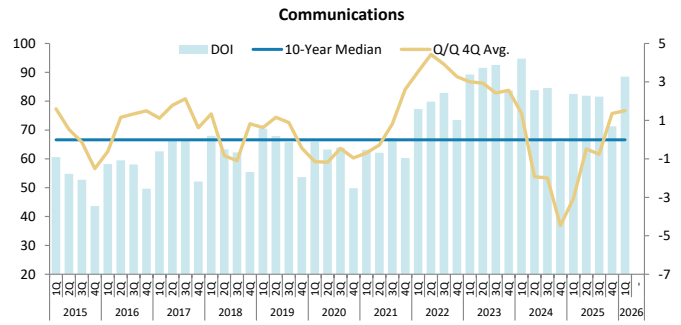
Source: FactSet, Morgan Stanley Research

Exhibit 14: Machinery DOI increased by 5 days q/q, tracking 13 days above the historical median. Trailing 4-quarters increased q/q.



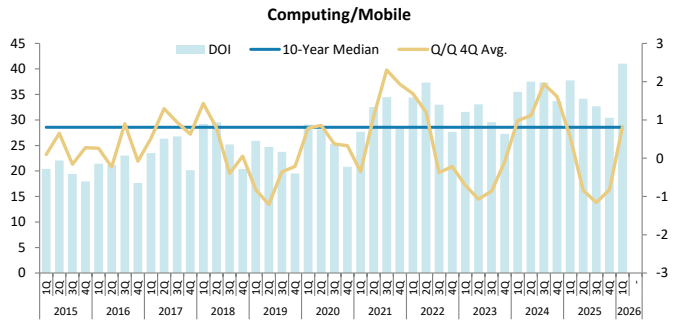
Source: FactSet, Morgan Stanley Research

Exhibit 15: Communications DOI increased 17 days q/q, tracking 23 days above the historical median. Trailing 4-quarters increased q/q.



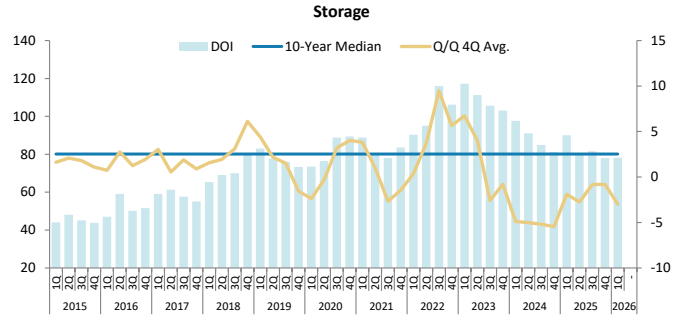
Source: FactSet, Morgan Stanley Research

Exhibit 16: Computing/Mobile company DOI increased by 11 days q/q, tracking 12 days above the historical median. Trailing 4-quarters increased sequentially.



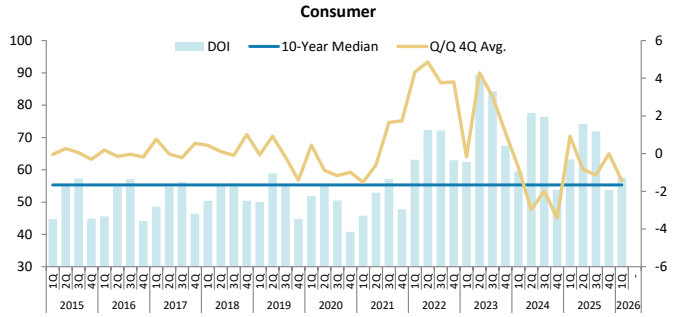
Source: FactSet, Morgan Stanley Research

Exhibit 17: Storage DOI remained flat q/q, now tracking 2 days below the historical median. Trailing 4-quarters increased from last quarter.



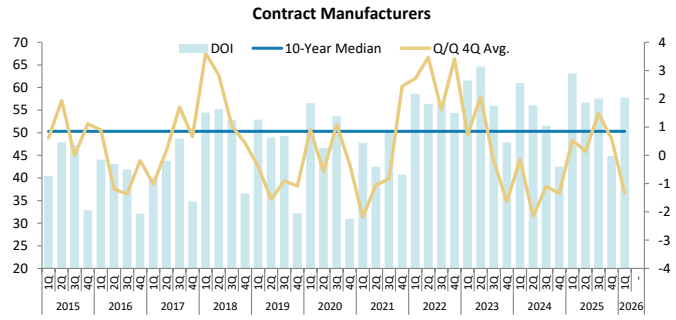
Source: FactSet, Morgan Stanley Research

Exhibit 18: Consumer company DOI increased 4 days q/q, now tracking 2 days above the historical median. Trailing 4-quarters decreased.



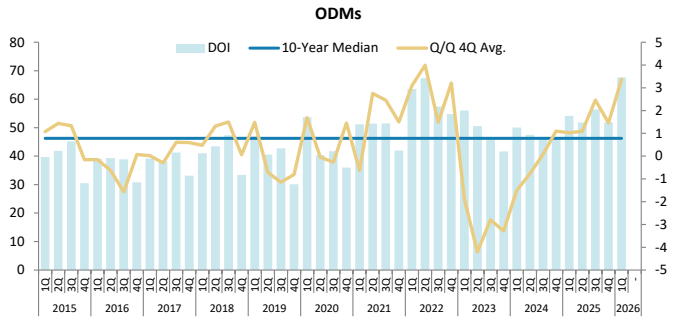
Source: FactSet, Morgan Stanley Research

Exhibit 19: Contract manufacturers DOI increased 13 days q/q, tracking 7 days above the historical median. Trailing 4-quarters decreased from last quarter.



Source: FactSet, Morgan Stanley Research

Exhibit 20: ODM DOI increased 16 days q/q, tracking 21 days above historical median. Trailing 4-quarter increased from last quarter.

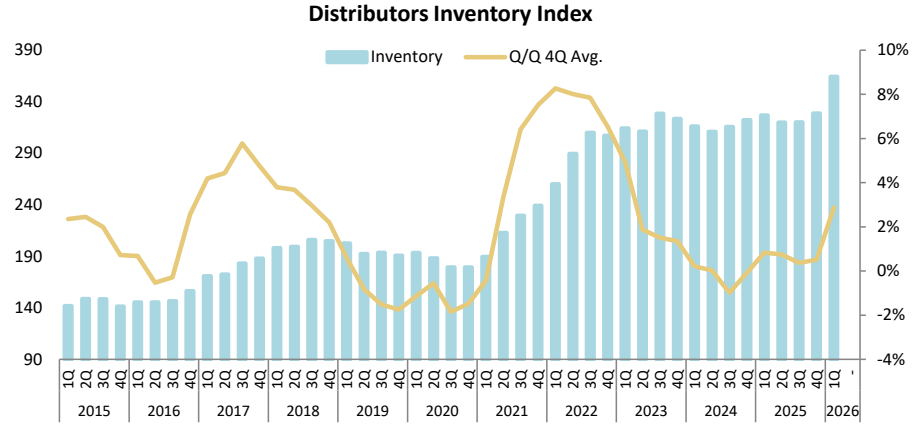


Source: FactSet, Morgan Stanley Research

Distributor Inventory

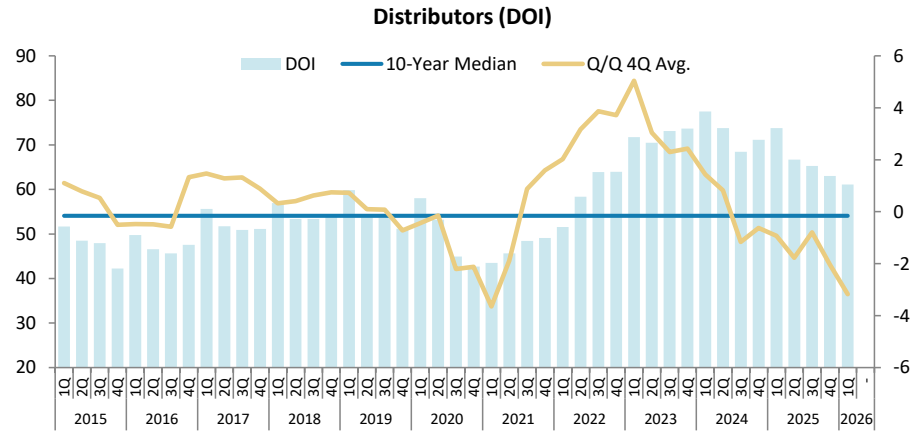
Distributor DOI decreased 2 days q/q, outperforming a seasonal increase of 4 days. DOI is tracking 7 days above the historical median.

Exhibit 21: Distributor Inventory index increased 10.8% sequentially, and trailing 4-quarters increased from last quarter.



Source: FactSet, Morgan Stanley Research

Exhibit 22: Distributor inventory is at 61 days, down 2 days q/q, below the seasonal increase of 4 days. DOI is 7 days above the historical median while trailing 4-quarters decreased sequentially.

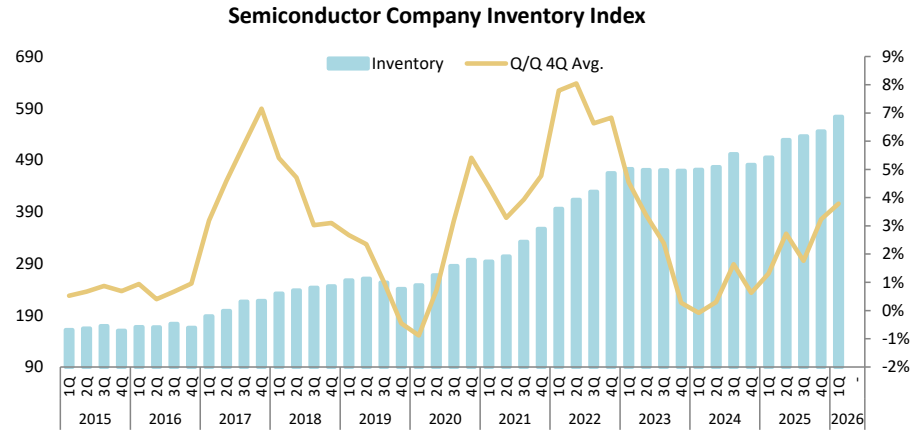


Source: FactSet, Morgan Stanley Research

Producer Inventory

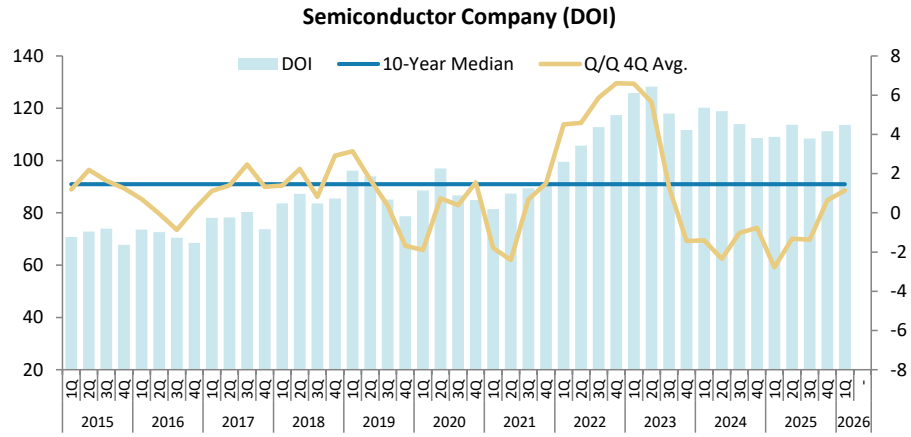
Semiconductor company DOI increased less than seasonality. DOI decreased the most for Semi Cap Equipment and Analog/MCU while Memory was ~flat. Overall DOI momentum increased again consecutively.

Exhibit 23: Semi Company inventory index increased 5.2% q/q, with trailing 4-quarters increasing.



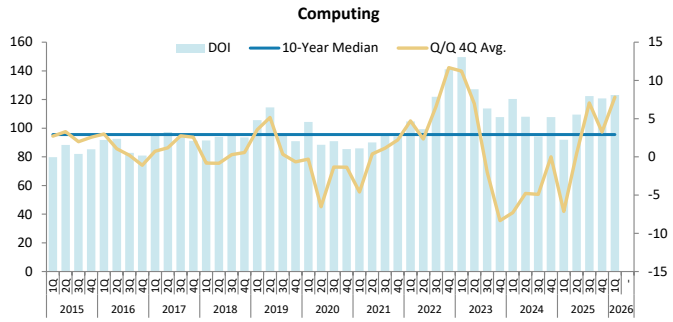
Source: FactSet, Morgan Stanley Research

Exhibit 24: Semiconductor Company inventory is at 114 days, up 2 days q/q, below the seasonal increase of 5 days. DOI is 23 days above the historical median and trailing 4-quarters slightly increased.



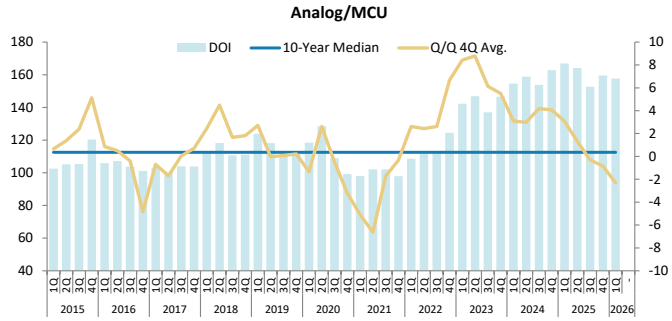
Source: FactSet, Morgan Stanley Research

Exhibit 25: Computing group DOI increased 2 days q/q, now tracking 28 days above the historical median. Trailing 4-quarters increased.



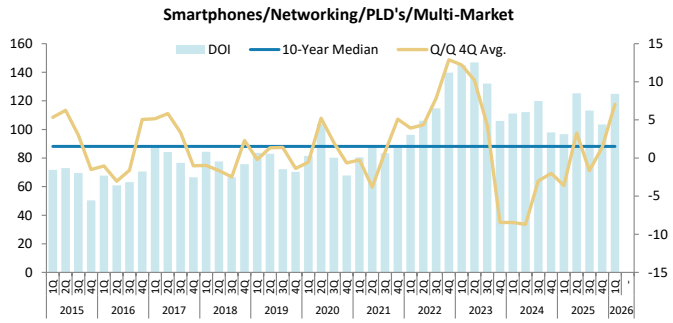
Source: FactSet, Morgan Stanley Research

Exhibit 26: Analog/MCU group DOI decreased 2 days q/q, now tracking 45 days above the historical median. Trailing 4-quarters fell q/q.



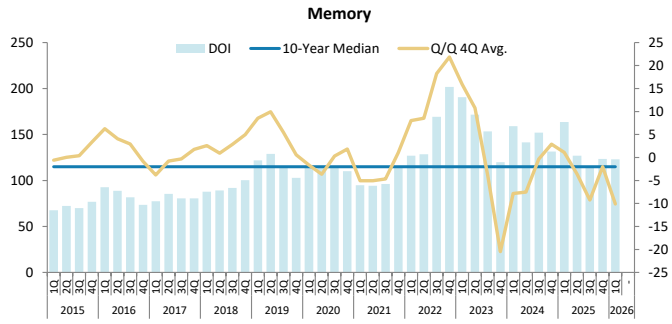
Source: FactSet, Morgan Stanley Research

Exhibit 27: Smartphone DOI increased 21 days q/q, now tracking 37 days above the historical median. Trailing 4-quarters increased q/q.



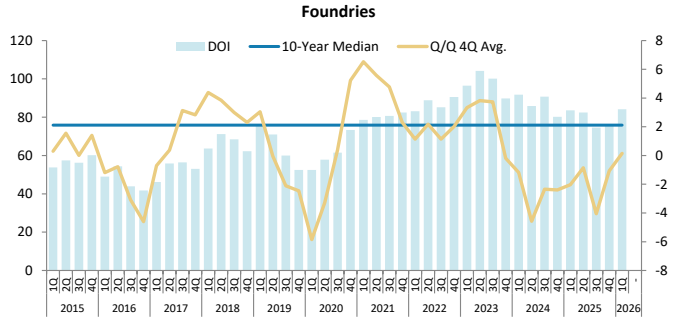
Source: FactSet, Morgan Stanley Research

Exhibit 28: Memory group DOI remained flat q/q, now tracking 8 days above the historical median. Trailing 4-quarters decreased.



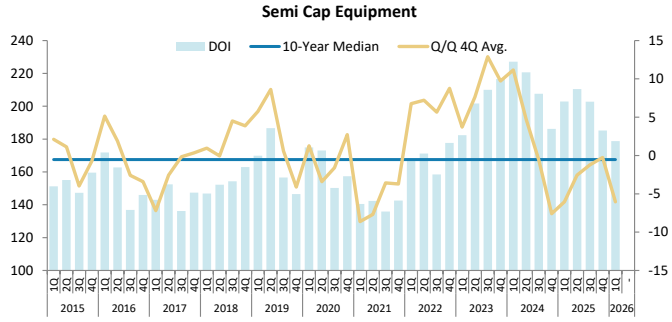
Source: FactSet, Morgan Stanley Research

Exhibit 29: Foundry group DOI increased by 8 days q/q, now tracking 8 days above the historical median. Trailing 4-quarters increased.



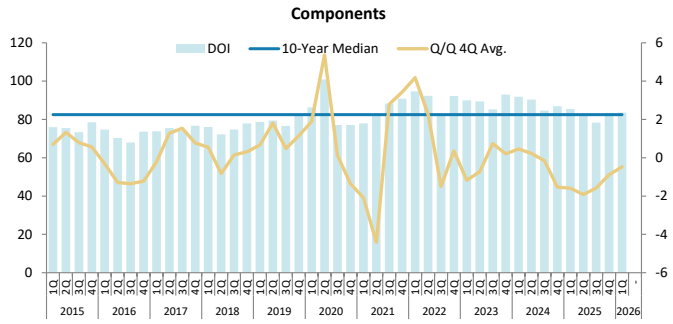
Source: FactSet, Morgan Stanley Research

Exhibit 30: Semi Cap Equipment group DOI decreased 6 days q/q, now tracking 11 days above the historical median. Trailing 4-quarters decreased from last quarter.



Source: FactSet, Morgan Stanley Research

Exhibit 31: Components group DOI was ~flat q/q, now tracking 1 day above the historical median. Trailing 4-quarters increased from last quarter.



Source: FactSet, Morgan Stanley Research

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Global Stock Ratings Distribution

(as of June 30, 2026)

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	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1544	42%	453	49%	29%	757	44%
Equal-weight/Hold	1577	43%	390	42%	25%	769	44%
Not-Rated/Hold	3	0%	1	0%	33%	1	0%
Underweight/Sell	544	15%	89	10%	16%	204	12%
Total	3,668		933			1731	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

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Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

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Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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INDUSTRY COVERAGE: Semiconductors

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/30/2026)
Joseph Moore		
Advanced Micro Devices (AMD.O)	E (06/09/2024)	$580.91
Aeva Technologies Inc (AEVA.O)	E (07/19/2021)	$28.72
Allegro Microsystems Inc (ALGM.O)	O (02/13/2026)	$69.62
Ambarella Inc (AMBA.O)	O (03/29/2016)	$85.80
Amkor Technology Inc (AMKR.O)	E (11/08/2023)	$86.23
Analog Devices Inc. (ADI.O)	O (11/16/2023)	$397.17
Astera Labs Inc (ALAB.O)	O (05/11/2025)	$483.02
Broadcom Inc. (AVGO.O)	O (06/09/2024)	$377.75
Cerebras Systems (CBRS.O)	O (06/08/2026)	$221.00
GlobalFoundries Inc (GFS.O)	E (10/28/2024)	$82.41
Intel Corporation (INTC.O)	E (02/22/2023)	$139.63
IonQ Inc (IONQ.N)	E (04/25/2023)	$53.26
Marvell Technology Group Ltd (MRVL.O)	E (09/14/2015)	$297.89
Microchip Technology Inc. (MCHP.O)	E (07/10/2024)	$91.20
Micron Technology Inc. (MU.O)	O (10/06/2025)	$1,154.29

Navitas Semiconductor Corp (NVTS.O)	U (04/06/2025)	$17.92
NVIDIA Corp. (NVDA.O)	O (03/16/2023)	$200.09
NXP Semiconductor NV (NXPI.O)	O (02/11/2025)	$281.03
ON Semiconductor Corp. (ON.O)	++	$94.54
Qorvo Inc (QRVO.O)	E (10/28/2025)	$93.27
Qualcomm Inc. (QCOM.O)	E (06/24/2026)	$184.79
Quantinuum (QNT.O)	E (06/29/2026)	$81.74
SanDisk Corporation. (SNDK.O)	O (03/03/2025)	$2,273.73
Semtech Corp. (SMTC.O)	E (04/06/2025)	$161.85
Silicon Laboratories Inc. (SLAB.O)	E (01/19/2021)	$218.56
Skyworks Solutions Inc (SWKS.O)	E (11/28/2018)	$67.80
Texas Instruments (TXN.O)	U (04/13/2020)	$298.07
Wolfspeed, INC (WOLF.N)	NR (04/06/2025)	$48.25
Lee Simpson		
Arm Holdings plc (ARM.O)	E (04/07/2026)	$354.57
Cadence Design Systems Inc (CDNS.O)	O (02/14/2024)	$375.32
Synopsys Inc. (SNPS.O)	E (02/27/2026)	$446.07

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* Historical prices are not split adjusted.

INDUSTRY COVERAGE: Semiconductor Capital Equipment

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/30/2026)
Shane Brett		
Applied Materials Inc. (AMAT.O)	E (05/18/2026)	$723.00
Camtek (CAMT.O)	E (12/01/2025)	$163.12
KLA Corp (KLAC.O)	O (01/15/2026)	$301.71
Lam Research Corp (LRCX.O)	O (05/18/2026)	$433.33
MKS Inc. (MKSI.O)	O (08/04/2024)	$444.80
Nova Ltd (NVMI.O)	E (12/01/2025)	$542.94
ONTO Innovation Inc (ONTO.N)	O (06/14/2026)	$378.45
Teradyne Inc (TER.O)	E (07/30/2025)	$483.84

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