



DECEMBER 18, 2024

ON SEMICONDUCTOR (NASDAQ: ON)

Current Stock Price: \$64.93

Implied Stock Price: \$71.68

Implied Upside: 10.39%

Rating: BUY

PARAM SAHAJPAL & RAY TAN

param.sahajpal@yale.edu

ray.tan@yale.edu





Investment Rationale

ON Semiconductor is a chipmaker focused on the automotive and industrial markets. Born out of Motorola in 1999, the firm has historically been a communications and consumer products supplier, however, in recent years it has shifted towards higher growth, higher margin industries as denoted by its current end-market focus. This emphasis on high growth subsectors has also resulted in the firm investing heavily in next-generation semiconductor materials, namely Silicon Carbide (SiC) and Gallium Nitride (GaN), which provide performance that is better than legacy silicon chips by a wide margin. This improved performance is necessary for the successful rollout of next-generation products such as autonomous vehicles, wider range electric vehicles that can fully rival ICE vehicles, factory automation and improving renewable energy yield. Seeing the growing need for these chips, ON has heavily invested in the space by acquiring a leading player, GT Advanced Technologies (GTAT), in 2021 and concentrating its recent capex and R&D spend towards building out its product portfolio and its SiC capacity. Its existing technological prowess has allowed the firm to quickly become the market leader in this niche market, gaining considerable market share since 2022 and establishing sole-supplier partnerships with 8 of the top 10 automotive OEMs. The firm has continued to take market share in the recent downturn and is poised to continue to win disproportionately in this space.

In addition to being the leader in a high-growth subsector, this positioning provides ON with a unique advantage – it's not reliant on increased EV adoption to drive growth. Rising EV sales will continue to bolster ON's financial performance, however, even if EV adoption stagnates, growing SiC adoption by automotive and industrial players will continue to supercharge ON's results. This SiC adoption is inevitable as these next-generation chips perform better than silicon chips in every single metric and provide material benefits to end consumers. This improved performance is actually a catalyst for EV adoption as it will compress the gap between EVs and ICE vehicles, and hence, provides a "double whammy" benefit for the firm. Hence, its market leadership in this space allows it to benefit from a multitude of hypertrends and allows its growth to not be tied to the adoption of a singular product which provides worse performance to consumers than its alternatives, ie EVs relative to ICE vehicles.

Lastly, ON has also pivoted its sales and operational approach to prioritize long-term contractual relationships with customers, rather than making potentially-recurring annual sales. This has allowed the firm to gain increased insight into the end-market as it works with OEMs as a partner rather than a supplier which has allowed ON to foresee downturns prior to their occurrence, and hence, manage downside risks more effectively than peers.

Overall, ON Semiconductor's market leadership in next-generation chips provides the firm with a supercharged growth runway, detaches it from being beholden to EV adoption, and its operational shift allows it to have stronger guardrails against downside movements. **These factors, combined with our target price of \$71.68 makes ON a BUY.**

Valuation-Specific Line Item Projections

Assumptions

Assumptions	
CPI / PPI Correlation	0.9736
Automotive	
Industry Volume CAGR	10.00%
ON Volume Multiple	1.62x
Industrial	
Industry Volume CAGR	8.00%
ON Volume Multiple	1.00x
Other	
Industry Volume CAGR	-4.00%
ON Volume Multiple	1.00x
Non-Revenue	
Utilization Benefit per Percentage Point (bps)	20
High-end Utilization Rate	83.00%
Capex Intensity	6.10%
LT SG&A Intensity	11.83%

ON's strategic approach is driven by its specific end-markets. The firm has replaced its legacy business, which was exposed to low growth, price sensitive industries such as computing and communications, with higher growth, higher margin industry exposure in the form of the automotive and industrials sectors. To do so, the firm focused its legacy power management and sensors prowess towards these newer industries since the late 2000s. This helped the firm establish a leading technological platform in niche subsectors with high consequences of failure and high switching costs.

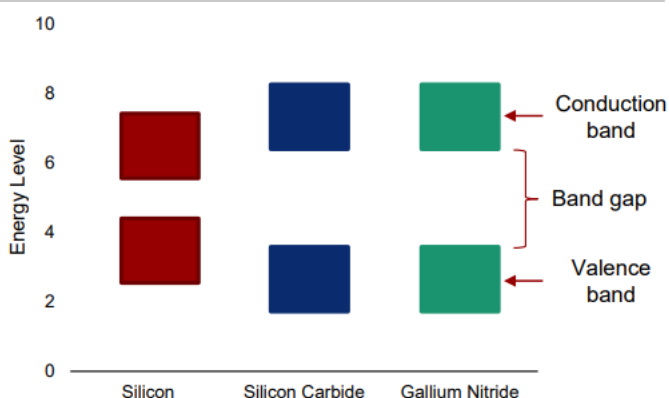
The firm's growth prospects are tied to its ability to win in these high growth, high margin industries. Its recent outperformance has been driven by consistent design and content wins which have helped it take market share and establish itself as the leading player in a number of niche subsectors such as high-resolution, close-distance image sensors, and advanced driver assistance systems (ADAS). So, to accurately price in its superior product portfolio and its leveraged exposure to these industries, we decided to drive our projections off of its expected performance in its self-declared end markets.

We began with projecting segmental volume since much of the firm's recent wins have been driven by its technological wins, and the subsequent share gains it's experienced which has positioned it as a leveraged bet on next-generation technologies such as factory automation and electrification. We acknowledged that simply using expected industry growth would underprice the firm's runway, as it has continued to take market share over the last 18 months despite the slowdown among its customers. To gain insight into how the firm's market share gains have progressed since its management changed and it implemented its current strategy, we backed out the implied volume growth among the industry, as well as for ON itself. This was done through the following formula: **implied volume growth = [(1 + revenue growth) / (1 + pricing growth)] - 1**. We conducted this exercise for both market-level data and the firm's segmental metrics. The firm's implied segmental volume growth was then divided by the industry-level volume growth to find its volume multiple for each segment which signified how much market share the firm was taking per 1% of volume growth on an annual basis.

We noticed that this number was particularly important for the automotive sector, where it had trended upwards since 2021, peaking at ~1.85x in 2023. This was driven by the firm's foray into the next-generation semiconductor material of Silicon Carbide (SiC). This material is part of a family of materials known as "wide band-gap", whose benefits can be seen below. Wide band-gap materials have a larger energy gap between their valence band and conduction band which allows the resulting chips to operate at higher temperatures,

endure higher voltages and decrease energy loss. All of these factors drive better performance among SiC chips relative to legacy silicon chips. As these chips have become more economical over the last decade, chipmakers have increasingly allocated R&D and capex dollars towards their development, and ON has been the biggest winner in this race. It has focused on specific, niche applications within its preferred end markets and has used its power management and technological expertise to devise industry-leading products. This has resulted in the firm's SiC segment growing at 2x the market such that it now retains the highest EV / AV SiC market share, exhibited by its 50% content win share as of YE'24. As the firm's lead has only increased, we expected this trend to continue and used the 2021 – 2024 average volume multiple of ~1.65x to drive its automotive volume growth. The other segments' multiple was flatlined at 1.0x as the firm's next-generation product portfolio was largely centered around the automotive sector and other industries, such as data centers and factory automation, largely grew at market rates.

How do wide band-gap materials work?



Types of Materials

Material	Chemical Symbol	Band-gap Energy (eV)
Silicon	Si	1.1
Gallium Arsenide	GaAs	1.4
Silicon Carbide	SiC	3.3
Gallium Nitride	GaN	3.4
Diamond	C	5.5

Comparative Benefits

Characteristic	Silicon	SiC / GaN
Max. Temperature	225°C	600°C+
Max. Voltage	Base	+10x
Energy Loss	Base	-90%
Switching Speed	Base	+9x

End Market Benefits →

Industrial

- Higher efficiency, variable speed drives in motors

Automotive

- Electricity losses in charging -66%
- Higher efficiency in power conversion and electric drivetrain
- 50% faster charging
- 10% longer driving range

To then derive the full segmental volume growth, we used the ON's end market growth projections as the baseline and multiplied it by the applicable volume multiple. For example, **volume growth for the automotive segment = expected volume growth for the automotive chip sector * ON's automotive volume multiple**. We used the firm's projections specifically since it had been more reliable in predicting sectoral movements due to its shift towards long-term supply agreements (LTSA's). The firm pivoted towards this approach when it implemented its new strategy to erase price / value discrepancies in its pricing structure and lock its value compensation and its market share gains in for a longer period of time. The firm also declared that it would not budge on pricing after contracts have been settled but will instead work with customers to move volume around the years to better fit their needs. Thus, due to these new, long-term relationships with OEMs, the firm gained leading indicators on expected volume movement as OEMs reached out to the supplier to increase / decrease near term shipped volumes in reaction to movements in end market demand. This allowed the firm to predict slowdowns in both the industrial and automotive sectors 2 quarters before they hit, and position its inventory profile and factory utilization accordingly, thereby, minimizing its margin volatility. Management noted these benefits when discussing the poor predictive power of third-party sources. Therefore, we decided to use management projections instead.

Note that this approach was mainly used for projections from 2026 onwards. Management stated that the current industry slowdown has reached a trough in both the industrial and automotive sectors, however, it has been an “L” shaped recovery such that 2024 and 2025 will essentially flatline. Therefore, we expected flat growth in the industrial segment. However, as the firm has continued to win market share in automotive SiC, it has generated low single digit growth in its automotive business in the last 1.5 quarters of 2024. The firm noted that it expects its automotive segment to fully realize the annualized effects of these wins in 2025. Resultantly, we projected automotive volumes accordingly for 2024 and 2025, growing the former at ~3% and the latter at 2.5x this growth rate to represent its annualization.

Additionally, we would like to address the firm’s disappointing revenue numbers for Q1’24 – Q3’24 amid a period of rising vehicle sales and explain how we reconciled this discrepancy with the levered automotive segment growth explained above and ultimately, reflected this situation in our projections. Although the firm’s automotive revenue, and hence, its total revenue declined through the first 3 quarters of FY’24, this wasn’t a reflection of lost market share or firm-level underperformance, but rather a real-time display of the firm’s actual drivers. Vehicle sales may be the end-market driver for automotive chips but the actual revenue driver is the dynamic between channel and OEM inventories and consumer sell-through of vehicles. If an auto chip supplier’s customers retain a bloated inventory log relative to their expected end-market demand, they will allow inventories to fall despite rising vehicle sales to manage their inventories downwards and limit the financial impact of slow-moving inventory. In this case rising vehicle sales won’t have an impact on auto chip suppliers’ revenue as volume orders continue to stagnate. This was the situation throughout 2024 for both ON and the broader automotive chipmaker industry. In addition to ON, market leaders such as Infineon and STMicroelectronics reported revenue declines of >10% through FY’24. ON, along with its peers, noted that the automotive industry, including both OEMs and dealers, was going through a period of “inventory digestion” as customers trimmed their inventory supply through end-market sales. So, although vehicle demand remained relatively strong, auto chip demand waned and suppliers took a hit.

It’s also important to note that ON has excelled among its peers in terms of managing its channel inventory and utilization rate through its LTSA’s which resulted in industry-low inventory levels. This has reduced the possibility of a future overhang on results due to customers flushing out bloated inventories prior to reordering. Therefore, unlike peers who have now started to see channel inventories creep downwards, ON’s channel inventory has actually risen by 1 week as they pre-emptively managed downwards to a minimum. Similarly, peers are looking to scale back utilization rates as of Q3’2024 to manage this downturn, whereas, ON implemented this step 5 quarters ago. Overall, this situation has increased our conviction in the firm’s ability to win in the niche, high-growth subsegments of the automotive chip sector as the firm’s market share has remained unaffected, with it growing in pockets like the Chinese EV market instead, and its operational management has outpaced peers.

Moving forward, on a pricing basis, we decided to drive our projections based on a CPI forecast that we pulled from Bloomberg, which can be seen in the scenarios build below. ON, along with the rest of the industry, has had great success in driving pricing growth over the last few years due to the chip shortage. However, unlike its peers who have experienced price compressions due to the market slowdown, ON has been able to limit its downside exposure. Due to its LTSA’s, the firm’s pricing is locked in, and since its product portfolio is geared towards subsegments with high switching costs and high consequences of failure, it has created a “value-based” pricing strategy. This entails structuring its pricing based on the “value” its niche products provide and the firm refuses to compress its “value-based” margins to chase volume. Since it has divested from legacy, price-sensitive segments, and its product applications are such that its customers have to largely single-source their chips, it has withstood pricing pressures. Resultantly, it guided towards flat price movement in both 2025, which it has achieved in 2024.

Since ON's products carry high consequences of failure and high switching costs and the firm retains market leadership, we acknowledge that it carries a strong amount of pricing power. However, it has noted that its pricing movement will be a function of product launches whose incremental value will be denoted through price hikes. As the applicable price hike for each product launch is up in the air, we chose not to price this in. Additionally, although the firm's LTSAs guarantee positive pricing movement, we believe additional future price hikes will only be possible given a favourable environment. As we are unsure if / when this will materialize, our decision to not factor this aspect in was further affirmed. Therefore, we simply grew pricing at CPI after 2025, which is when management expects a recovery, and which also aligns with the Fed's expectations on the recession-recovery timeline (roughly 2 years).

In addition to projecting revenue items, we also projected gross and EBIT margins. Gross margin was projected on a two-step basis. The first step grew COGS using expected PPI and volume growth. Note that our PPI forecast was built off our CPI forecast and the historical correlation between the two, such that **PPI = CPI * (PPI / CPI Correlation)** – this forecast was used as our expectations for supplier pricing pressures. Therefore, in our first step we combined our expected supplier cost growth (PPI forecast) with our overall volume growth to arrive at our step 1 COGS for each year. The exact formula can be seen below:

$$\text{COGS}_{\text{Pre-Utilization Benefit}} = \text{COGS}_{(T-1) \text{ Pre-Utilization Benefit}} * (1 + \text{PPI}) * (1 + \text{Weighted Average Volume Growth}).$$

The second step of our gross margin build was predicated on factoring in the effect of a rising utilization rate as the market improves post 2026 and volumes grow. Management noted that every 100bp increase in factory utilization rates results in ~20bp of gross margin expansion and that their full-capacity utilization peaks at ~83%. So to price this factor in, we used the following process:

1. Utilization Rate = MAX(Utilization Rate_(T-1) * [(1 + (Weighted Avg Volume Growth – Capacity Growth)], High-End Utilization Rate)
2. Percentage Point Change in Utilization Rate = Utilization Rate - Utilization Rate_(T-1)
3. **Percentage Growth in Gross Margin = Percentage Point Change in Utilization Rate * (20 / 100)**

As noted above, we started by deriving the firm's utilization rate for each projection year. This included finding the utilization rate for each projection year by growing the past year's utilization at the delta between volume growth and capacity growth (1). Capacity growth is denoted as the annual capex intensity (~6.1%) – maintenance capex intensity (5%). Note that the utilization rate was peaked at 83% using a MAX function (1) as management stated that this serves as its full-capacity rate.

We then used the new utilization rate to find the percentage point change in utilization. Since management noted the benefits of rising utilization per 100bps, we decided it was best to denote the utilization growth in percentage points (bps * 100). This percentage point change was then multiplied by 0.2 (the gross margin improvement due to 1 percentage point increase in utilization) to find the total gross margin benefit due to growing utilization.

Finally the final gross margin for the projection period was calculated as **Gross Margin = Gross Margin_(T-1) * Percentage Growth in Gross Margin.**

To find EBIT margins, we used management guidance of an SG&A intensity of 13% as of 2027 and scaled it down based on the firm's track record of setting beatable margin targets. Management has been very effective at meeting guidance in the past – it announced a margin expansion program in 2020 where it expected to grow gross margins from ~38% to 45% by 2025 through manufacturing optimization, which it exceeded by growing gross margins to ~49% by 2022. As this has been the new management team's only margin improvement program since taking over, we priced it in by compressing the target long-run SG&A intensity by ~9%, which was the firm's past margin beat. To be conservative, we didn't consider management's track record of achieving and exceeding targets ahead of time, as stated above, due to the current challenging market environment. Therefore, we projected the firm to achieve this compressed target on time.

Similarly, we also used management guidance of capex intensity falling to 5% from 2025 onwards, but adjusted this target upwards based on the firm's track record of not meeting capex targets. It has historically missed these targets by ~22% and hence, we pushed our capex intensity assumption upwards by this amount. Although the firm has stated that it has fully completed its capacity upgrade program and that it has sufficient flexibility in its current plants to meet expected production goals, it has under-projected its capital needs in the past which we wanted to price into our model.

Revenue

	Scenarios						CURRENTLY RUNNING: BASE CASE SCENARIO		
ON Semiconductor	2024E	2025E	2026E	2027E	2028E	2029E	Switch	Base Case	
Inflation									
CPI	4.50%	3.50%	3.20%	2.97%	2.73%	2.50%			
PPI	4.38%	3.41%	3.12%	2.89%	2.66%	2.43%			
Volume Growth									
Automotive	3.00%	7.50%	16.18%	16.18%	16.18%	16.18%			
<i>Bull Case</i>	3.30%	8.25%	17.80%	17.80%	17.80%	17.80%			
<i>Base Case</i>	3.00%	7.50%	16.18%	16.18%	16.18%	16.18%			
<i>Bear Case</i>	2.40%	6.00%	12.95%	12.95%	12.95%	12.95%			
Industrial	-1.00%	0.00%	8.00%	8.00%	8.00%	8.00%			
<i>Bull Case</i>	-0.90%	0.00%	8.80%	8.80%	8.80%	8.80%			
<i>Base Case</i>	-1.00%	0.00%	8.00%	8.00%	8.00%	8.00%			
<i>Bear Case</i>	-1.20%	0.00%	6.40%	6.40%	6.40%	6.40%			
Other	-4.00%	-4.00%	-4.00%	-4.00%	-4.00%	-4.00%			
<i>Bull Case</i>	-3.60%	-3.60%	-3.60%	-3.60%	-3.60%	-3.60%			
<i>Base Case</i>	-4.00%	-4.00%	-4.00%	-4.00%	-4.00%	-4.00%			
<i>Bear Case</i>	-4.80%	-4.80%	-4.80%	-4.80%	-4.80%	-4.80%			
Pricing Growth									
Automotive	0.00%	0.00%	3.20%	2.97%	2.73%	2.50%			
<i>Bull Case</i>	0.00%	0.00%	3.52%	3.26%	3.01%	2.75%			
<i>Base Case</i>	0.00%	0.00%	3.20%	2.97%	2.73%	2.50%			
<i>Bear Case</i>	0.00%	0.00%	2.56%	2.37%	2.19%	2.00%			
Industrial	0.00%	0.00%	3.20%	2.97%	2.73%	2.50%			
<i>Bull Case</i>	0.00%	0.00%	3.52%	3.26%	3.01%	2.75%			
<i>Base Case</i>	0.00%	0.00%	3.20%	2.97%	2.73%	2.50%			
<i>Bear Case</i>	0.00%	0.00%	2.56%	2.37%	2.19%	2.00%			
Other	0.00%	0.00%	3.20%	2.97%	2.73%	2.50%			
<i>Bull Case</i>	0.00%	0.00%	3.52%	3.26%	3.01%	2.75%			
<i>Base Case</i>	0.00%	0.00%	3.20%	2.97%	2.73%	2.50%			
<i>Bear Case</i>	0.00%	0.00%	2.56%	2.37%	2.19%	2.00%			
Non-Revenue Items									
Utilization Rate	66.00%	67.22%	73.00%	79.27%	83.00%	83.00%			
<i>Bull Case</i>	72.60%	73.94%	80.30%	87.19%	91.30%	91.30%			
<i>Base Case</i>	66.00%	67.22%	73.00%	79.27%	83.00%	83.00%			
<i>Bear Case</i>	52.80%	53.78%	58.40%	63.41%	66.40%	66.40%			
SG&A Intensity	14.80%	13.81%	12.82%	11.83%	11.83%	11.83%			
<i>Bull Case</i>	13.32%	12.43%	11.54%	10.65%	10.65%	10.65%			
<i>Base Case</i>	14.80%	13.81%	12.82%	11.83%	11.83%	11.83%			
<i>Bear Case</i>	17.76%	16.57%	15.38%	14.20%	14.20%	14.20%			
ON Semiconductor									
(All figures in USD Millions, except per share data)	Historicals			Projections					
	2021A	2022A	2023A	2024E	2025E	2026E	2027E	2028E	2029E
Revenue Schedule									
Segmental Revenue									
Automotive	\$2,291.53	\$3,363.78	\$4,291.56	\$4,420.31	\$4,751.83	\$5,697.47	\$6,815.85	\$8,135.29	\$9,688.09
% Growth	NA	46.8%	27.6%	3.0%	7.5%	19.9%	19.6%	19.4%	19.1%
% of Revenue	34.0%	40.4%	52.0%	53.3%	55.5%	58.4%	61.2%	63.8%	66.3%
Industrial	1,819.75	2,289.71	2,310.84	2,287.73	2,287.73	2,549.81	2,835.50	3,146.04	3,482.66
% Growth	NA	25.8%	0.9%	(1.0%)	-	11.5%	11.2%	11.0%	10.7%
% of Revenue	27.0%	27.5%	28.0%	27.6%	26.7%	26.1%	25.5%	24.7%	23.8%
Other	2,628.52	2,672.71	1,650.60	1,584.58	1,521.19	1,507.08	1,489.71	1,469.22	1,445.71
% Growth	NA	1.7%	(38.2%)	(4.0%)	(4.0%)	(0.9%)	(1.2%)	(1.4%)	(1.6%)
% of Revenue	39.0%	32.1%	20.0%	19.1%	17.8%	15.5%	13.4%	11.5%	9.9%
Net Revenue	\$6,739.80	\$8,326.20	\$8,253.00	\$8,292.61	\$8,560.75	\$9,754.36	\$11,141.06	\$12,750.54	\$14,616.47
Growth		23.54%	-0.88%	0.48%	3.23%	13.94%	14.22%	14.45%	14.63%

Bull Case	10.00%
Base Case	0.00%
Bear Case	-20.00%

As explained above, revenue was projected through a price / volume build up on a segmental basis. **Pricing was tied to an expected CPI forecast and volume growth was driven off of industry growth * segmental volume multiple** over the entire projection period. We also sensitized this model with a bull / bear / base case scenario manager which increased our assumed downside so that we could understand the expected stock price impact of an upwards or downwards change in our assumptions.

Gross Profit and EBIT

Gross Profit Schedule									
Pre-Utilization Benefit COGS	(4,025.50)	(4,249.00)	(4,369.50)	(4,582.83)	(4,892.23)	(5,748.01)	(6,754.79)	(7,936.33)	(9,319.18)
Pre-Utilization Benefit Gross Profit	\$2,714.30	\$4,077.20	\$3,883.50	\$3,709.78	\$3,668.53	\$4,006.35	\$4,386.28	\$4,814.21	\$5,297.28
Pre-Utilization Benefit Margin %	40.27%	48.97%	47.06%	44.74%	42.85%	41.07%	39.37%	37.76%	36.24%
COGS	(4,025.50)	(4,249.00)	(4,369.50)	(3,709.78)	(3,850.65)	(4,597.74)	(5,391.11)	(6,265.11)	(7,181.95)
Gross Profit	\$2,714.30	\$4,077.20	\$3,883.50	\$4,582.83	\$4,710.11	\$5,156.62	\$5,749.96	\$6,485.44	\$7,434.52
Margin %	40.27%	48.97%	47.06%	44.74%	44.98%	47.14%	48.39%	49.14%	49.14%
EBIT Schedule									
SG&A	(1,426.70)	(1,717.20)	(1,344.80)	(1,227.31)	(1,266.99)	(1,250.51)	(1,317.99)	(1,508.39)	(1,729.13)
EBIT	\$1,287.60	\$2,360.00	\$2,538.70	\$3,355.52	\$3,443.12	\$3,906.11	\$4,431.97	\$4,977.05	\$5,705.39
Margin %	19.10%	28.34%	30.76%	40.46%	40.22%	40.04%	39.78%	39.03%	39.03%
SG&A Intensity	21.17%	20.62%	16.29%	14.80%	14.80%	12.82%	11.83%	11.83%	11.83%

As stated previously, we grew pre-utilization benefit COGS using the implied PPI forecast we built in our scenario manager. We then added the bps impact of a rising utilization rate based on the expected production and capacity additions to find the final gross profit margin.

EBIT margins were found using a ramp to the expected SG&A intensity as of 2027, which was flatlined thereafter.

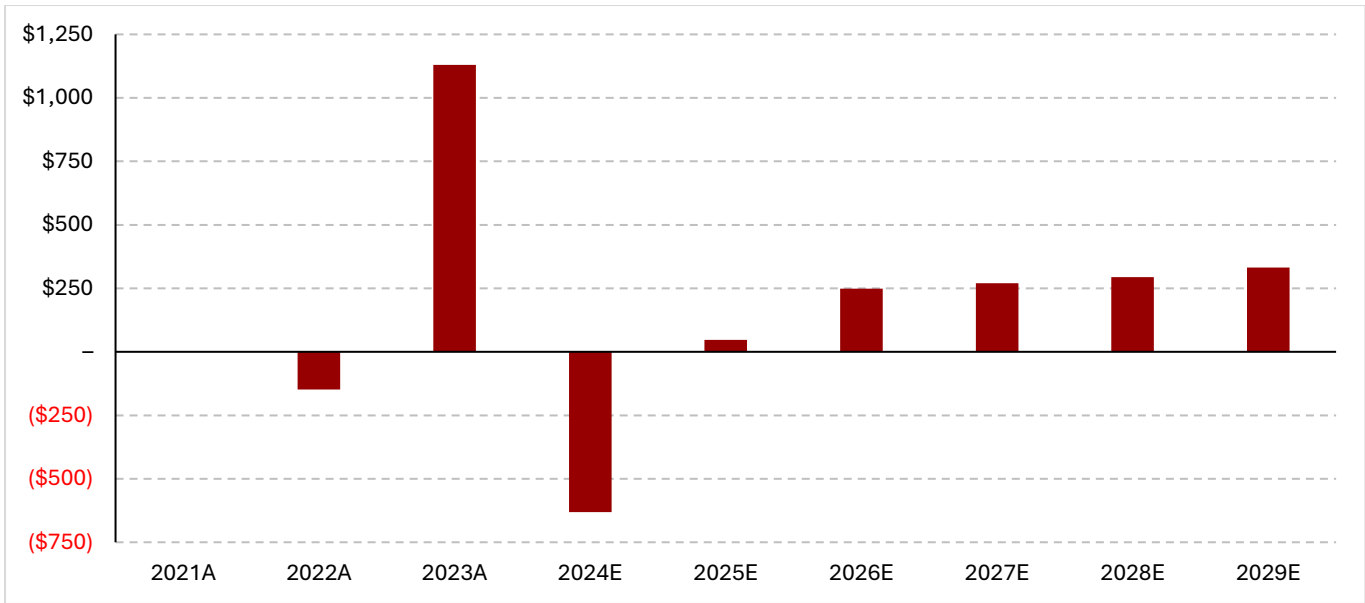
Capital Expenditures and D&A

Capex and D&A Schedule									
Capex	\$444.60	\$1,005.00	\$1,575.60	\$269.64	\$289.86	\$347.55	\$415.77	\$496.25	\$590.97
% of Revenue	6.60%	12.07%	19.09%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%
D&A	596.70	551.80	609.50	174.37	174.37	194.35	216.12	239.79	265.45
% of Revenue	8.85%	6.63%	7.39%	7.62%	7.62%	7.62%	7.62%	7.62%	7.62%

Capex was projected using the firm's stated capex intensity as of next year onwards and D&A was projected based on a percentage of revenue.

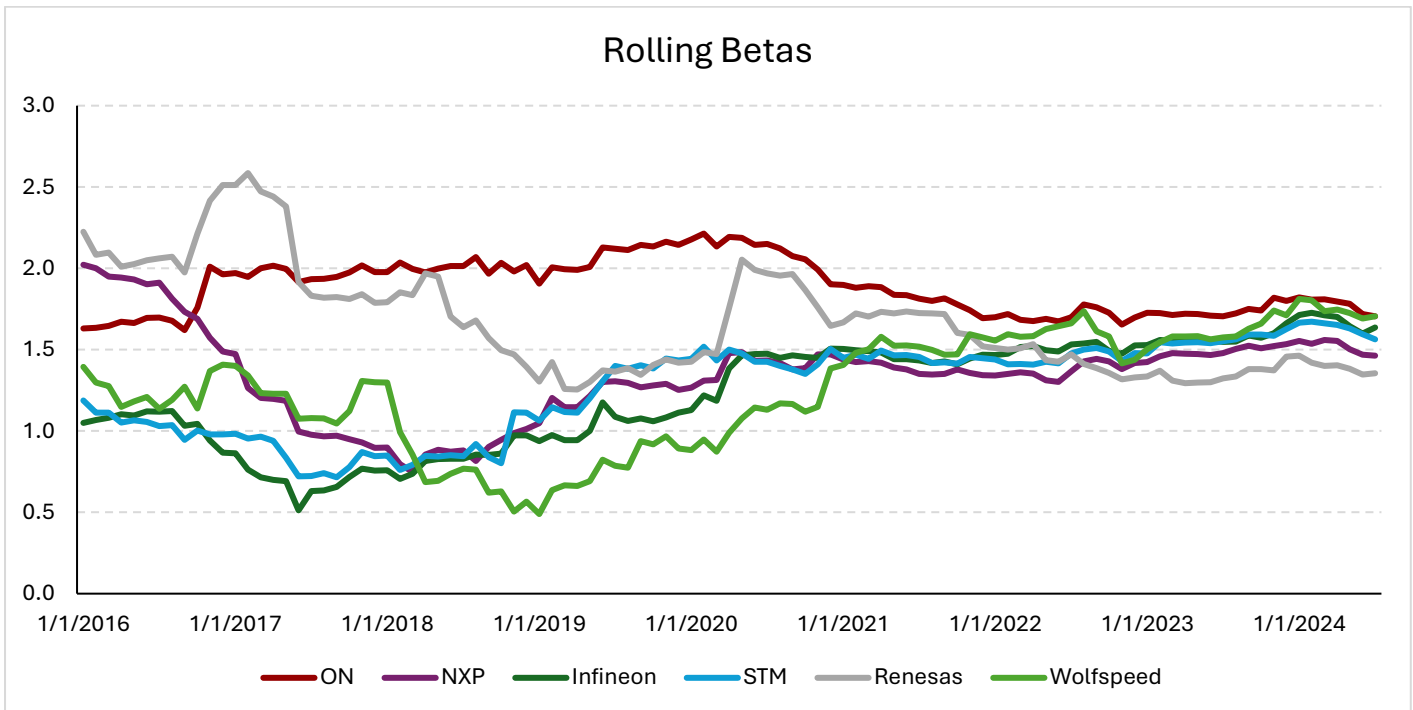
Changes in Net Working Capital

Net Working Capital Schedule									
Total Receivables	\$809.40	\$842.30	\$935.40	\$924.89	\$954.80	\$1,087.92	\$1,242.58	\$1,422.09	\$1,630.20
Days in Receivables	43.83	36.92	41.37	40.71	40.71	40.71	40.71	40.71	40.71
Inventories	1,379.50	1,616.80	2,111.80	1,491.96	1,548.61	1,849.07	2,168.14	2,519.63	2,888.36
COGS	4,025.50	4,249.00	4,369.50	3,709.78	3,850.65	4,597.74	5,391.11	6,265.11	7,181.95
Days in Inventory	125.08	138.89	176.41	146.79	146.79	146.79	146.79	146.79	146.79
Other Current Assets	240.10	351.30	382.10	343.08	354.17	403.55	460.92	527.51	604.71
% of Revenue	3.56%	4.22%	4.63%	4.14%	4.14%	4.14%	4.14%	4.14%	4.14%
Total Current Assets	\$2,429.00	\$2,810.40	\$3,429.30	\$2,759.93	\$2,857.58	\$3,340.55	\$3,871.65	\$4,469.24	\$5,123.27
Total Payables	\$635.10	\$852.10	\$725.60	\$648.43	\$673.06	\$803.64	\$942.31	\$1,095.08	\$1,255.33
COGS	4,025.50	4,249.00	4,369.50	3,709.78	3,850.65	4,597.74	5,391.11	6,265.11	7,181.95
Days in Payables	57.59	73.20	60.61	63.80	63.80	63.80	63.80	63.80	63.80
Accrued Expenses and Other	734.90	1,047.30	663.20	701.71	727.37	831.21	953.56	1,104.84	1,266.53
% of (Revenue - EBIT)	13.48%	17.55%	11.61%	14.21%	14.21%	14.21%	14.21%	14.21%	14.21%
Total Current Liabilities	\$1,370.00	\$1,899.40	\$1,388.80	\$1,350.14	\$1,400.42	\$1,634.85	\$1,895.87	\$2,199.92	\$2,521.86
NWC	\$1,059.00	\$911.00	\$2,040.50	\$1,409.79	\$1,457.16	\$1,705.70	\$1,975.77	\$2,269.31	\$2,601.41
Change in NWC	NA	-\$148.00	\$1,129.50	-\$630.71	\$47.37	\$248.54	\$270.07	\$293.54	\$332.09



Annual Net Working Capital (NWC) was projected by deriving the expected Accounts Receivables, Inventory, Other Current Assets, Accounts Payable, and Accrued Expenses throughout the discrete projection period. The historical metrics associated with these line items, namely Receivable Days, Inventory Days, % of Total Cost Base (for Prepaid and Accrued Expenses) and Payable Days were initially calculated. The historical average was taken as the base projection, and the resulting line items were backed out. The change in the cumulative NWC on a year-to-year basis was then calculated and can be seen above.

Valuation



We calculated the rolling betas for ON along with a peer group to get a sense of beta evolution over the last ~9 years which can be seen above. We can see a tightening of beta movement for every single firm and we see a stabilization since ~2022.

Cost of Equity	
Levered Beta	1.690
Risk Free Rate	4.15%
Market Risk Premium	5.87%
Cost of Equity	14.07%

Cost of Debt	
Default Spread via Credit Rating	1.74%
Risk Free Rate	4.15%
Pre-tax Cost of Debt	5.89%
Tax Rate	21.00%
Cost of Debt	4.65%

WACC Calculation	
Cost of Equity	14.07%
Equity Weight	88.53%
Cost of Debt	4.65%
Debt Weight	11.47%
WACC	12.99%

We derived our cost of equity using Professor Damodaran's (NYU) equity risk premium table, and the levered beta from our rolling beta calculation. These items were combined with the US 10Y yield to find the resulting cost of equity. For cost of debt, we used S&P's credit rating for ON (BB+) to find the implied default spread, through another table published by Professor Damodaran. Lastly, these items were combined with the cumulative market capitalization of the firm and its total debt to arrive at a WACC of 13.52%.

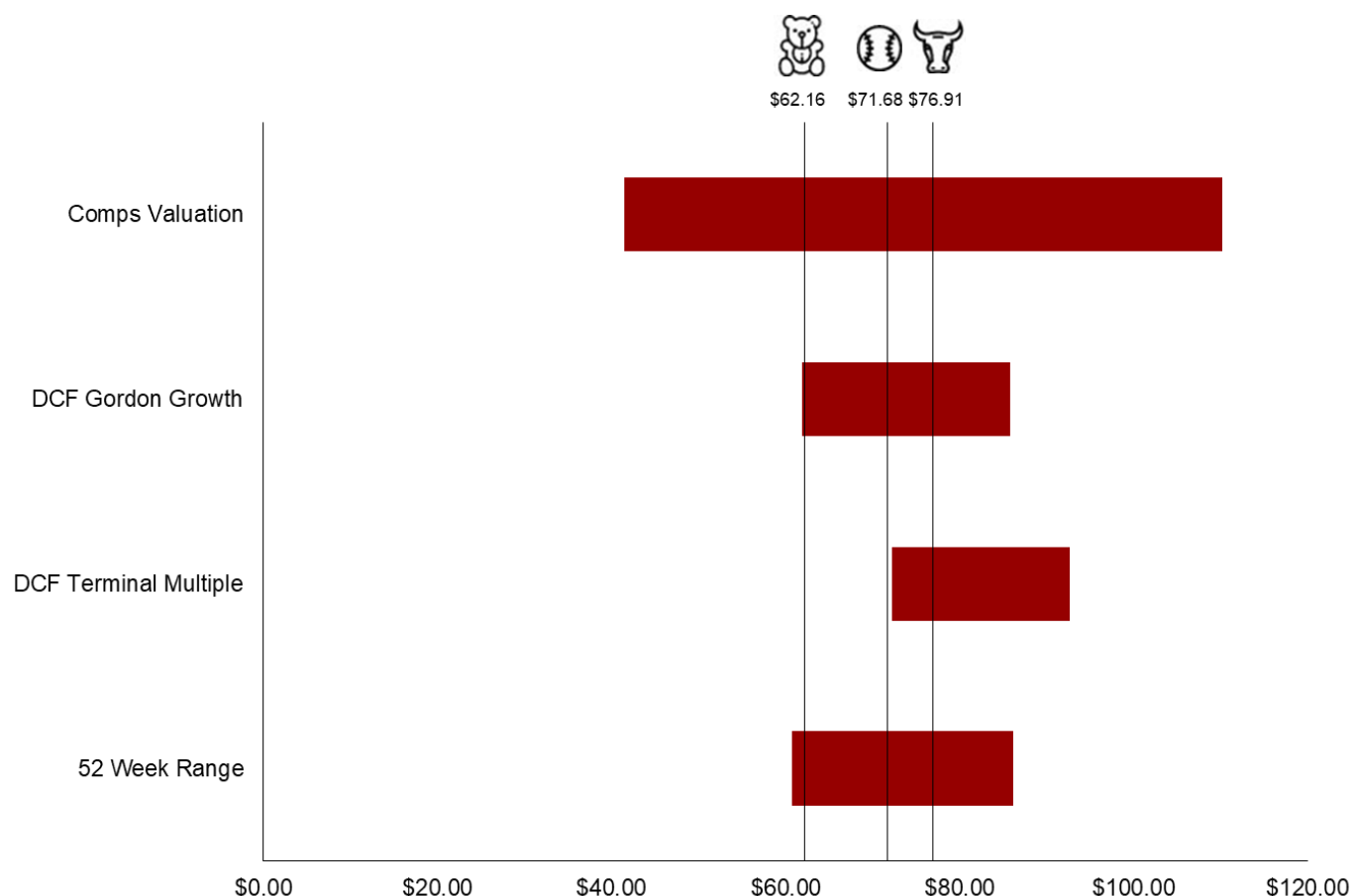
Discounted Cash Flow						
Unlevered Free Cash Flow	2024E	2025E	2026E	2027E	2028E	2029E
Revenue	\$691.05	\$8,560.75	\$9,754.36	\$11,141.06	\$12,750.54	\$14,616.47
EBITDA	294.16	3,617.49	4,100.45	4,648.09	5,216.84	5,970.84
EBIT	279.63	3,443.12	3,906.11	4,431.97	4,977.05	5,705.39
EBIT Margin	40.46%	40.22%	40.04%	39.78%	39.03%	39.03%
Less: Taxes	58.72	723.05	820.28	930.71	1,045.18	1,198.13
Add: D&A	14.53	174.37	194.35	216.12	239.79	265.45
Less: Capex	22.47	289.86	347.55	415.77	496.25	590.97
Less: Change in NWC	-52.56	47.37	248.54	270.07	293.54	332.09
Unlevered Free Cash Flow	\$265.53	\$2,557.20	\$2,684.09	\$3,031.53	\$3,381.86	\$3,849.64
Discount Period	0.08	1.08	2.08	3.08	4.08	5.08
Mid-Year Discount Period	0.04	0.58	1.58	2.58	3.58	4.58
PV of Unlevered Free Cash Flow	\$264.18	\$2,381.34	\$2,212.12	\$2,211.20	\$2,183.12	\$2,199.36

Bridge to Equity						
Gordon Growth Method						
Discount Rate	12.99%					
Terminal Growth Rate	2.00%					
Sum of PV of UFCF	\$11,451.32					
Terminal Value	35,724.74					
PV of Terminal Value	20,410.10					
Implied Enterprise Value	\$31,861.42					
Add: Cash	2,770.20					
Less: Debt	3,668.80					
Less: Preferred & Minority	19.90					
Equity Value	\$30,942.92					
Fully Diluted Shares Outstanding	431.7					
Implied Share Price	\$71.68					
Current Share Price	\$64.93					
Implied Upside	10.39%					

WACC	Terminal Growth Rate				
	1.00%	1.50%	2.00%	2.50%	3.00%
11.99%	13.6%	17.6%	21.9%	26.8%	32.1%
12.49%	8.4%	12.0%	15.9%	20.2%	24.9%
12.99%	3.7%	6.9%	10.4%	14.2%	18.5%
13.49%	-0.7%	2.2%	5.4%	8.8%	12.6%
13.99%	-4.7%	-2.1%	0.8%	3.9%	7.3%

As seen above, the projections detailed throughout this report were used to build a discounted cash flow model. The implied upside through the academically-driven Gordon Growth Method is ~5.69%, which has been sensitized with the WACC and growth rate inputs. This helped us arrive at our given target price and the resulting HOLD recommendation.

Football Field



The football field above helps quantify the impact of a change in our underlying assumptions, both on the upside and the downside, and we can see that in each scenario, our implied stock price hovers between ~4% downside and ~18% upside. **Therefore, we are comfortable in our BUY recommendation given the limited downside risks and considerable upside that isn't reflected, in the form of the firm's pricing power, due to timing uncertainty.**

What the Market is Missing

To gain a better understanding of why the market is mispricing ON's stock, we dove into analyst reports and Q&A on earnings calls. The main downside risk that analysts have focused on in the past 24 months has been whether ON's silicon carbide growth and market leadership is sustainable. ON entered this market a few years late through its acquisition of GTAT in 2021 but has leveraged its existing technological prowess to gain an edge on peers in terms of product performance, allowing it to disproportionately win and hence, take market share. However, analysts have been worried about whether this trend will continue. We observe this quantitatively as we notice that by reducing our automotive volume multiple from 1.62x to 1x, thereby expecting ON to grow in line with the market going forward, our implied upside falls to ~2.51%. This reflects a target price that's roughly in line with the current market price, showing that the market is discounting the prospect of a continuation in ON's market leadership. However, we disagree with this view. Firstly, the firm has continued to take market share during the automotive downturn by racking up design wins and increasing its OEM exposure in high-growth markets such as the 50% market share it gained within the Chinese EV industry. Since ON focuses on EV drivetrains, management has noted that it's not possible for customers to source a few parts from ON, and the others from peers as OEMs must source from a singular chip supplier. Resultantly, ON's content wins mean that much of the new vehicle architecture is built on its silicon carbide chips, creating a strong, sustainable moat. Hence, we retain strong conviction in the firm's ability to continue winning in the wide bandgap automotive chip space and resultantly, in our BUY recommendation.