Automotive Tier One Q4 2019

Industry Report

April, 2020

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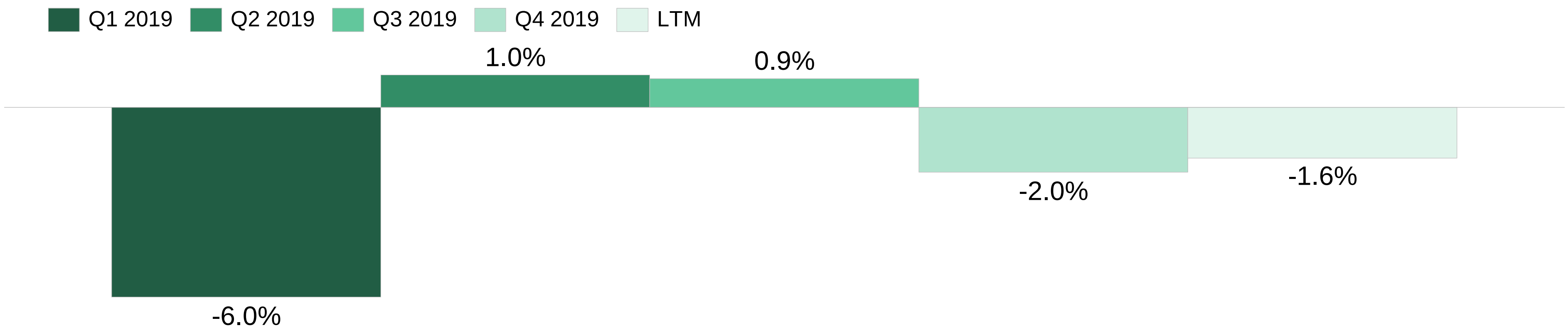
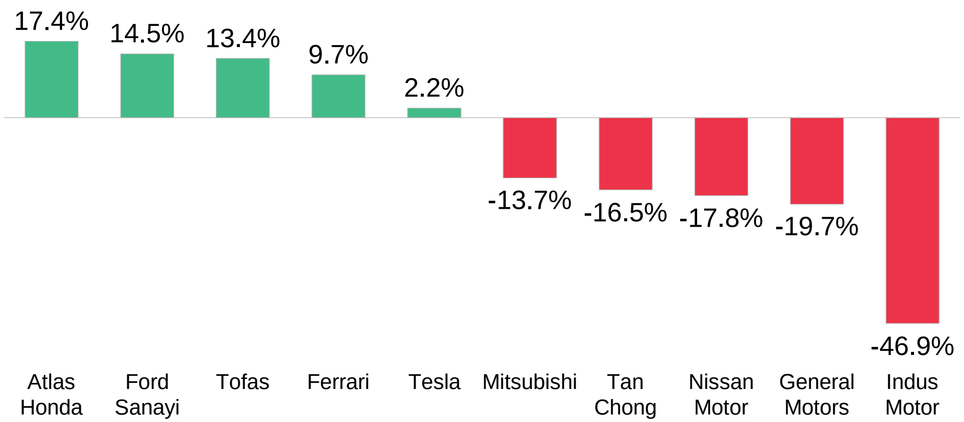
Auto OEMs face high levels of uncertainty as indicated by Q4 '19 revenue figures, which declined -2.0% compared with the same period last year.

Auto OEM Average Industry Revenue Growth
Quarterly & LTM, year over year comparison



Q4 Best and Worst Performing OEM by Revenue Growth
Quarter over Quarter Revenue Growth

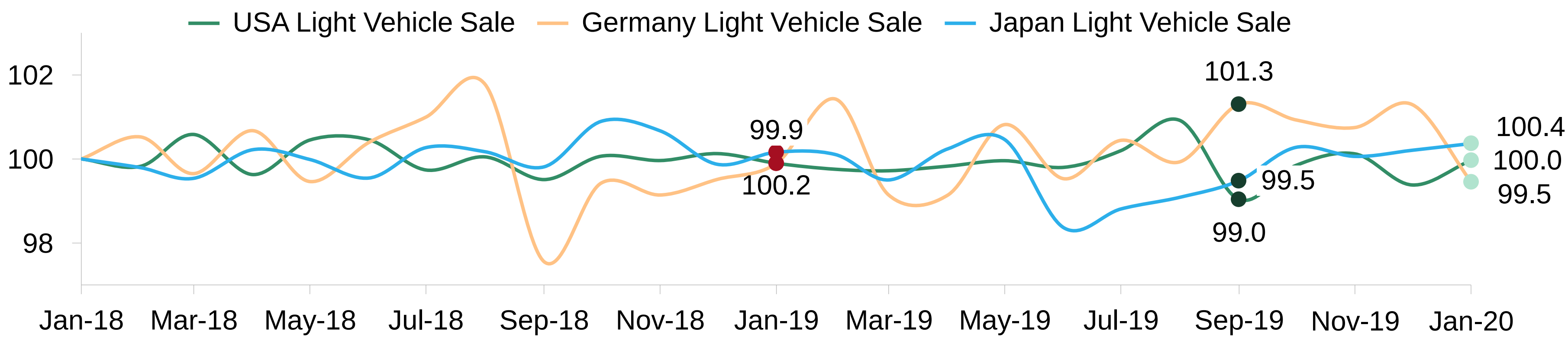


- Weakened global demand led to an overall revenue decline of -1.6% YoY in 2019, despite two brief growth quarters in Q2 and Q3.
- Though EBIT Margin suffered, dropping to 4.7%, Gross Margin increased slightly to 24.8%
- Global steel prices, which consistently fell throughout the 2019 and most significantly in the US and Europe, started to impact gross margins in Q4
- After an impressive run-up in stock price, Tesla is one of the few auto OEMs to post a revenue gain in Q4, although modest at 2.2% Y-o-Y

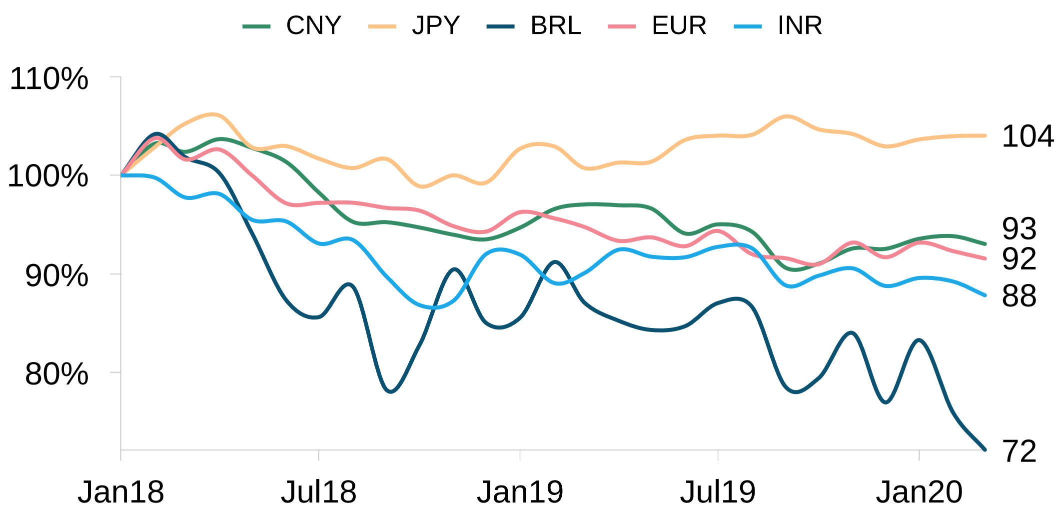
Notes: Based on world's largest 30 OEM's located throughout Asia, Europe & North America.
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Q4 2019 saw a massive decline in German Light Vehicle sales while the US and Japanese markets saw a slight uptick.

Monthly Light Vehicle Car Sales by Country, Indexed rolling 12-month average – 100 = Jan. 2018



Currency appreciation against USD, indexed at Jan - 2018



Source: MarkLines

US OEM Quarterly Wrap Q4 2019

- US Light Vehicle sale declined in December 2019, putting them 7% below the same period last year, but rebounded into January 2020
- Light vehicle sales in Germany were up significantly in Q4 '19, but gains were quickly wiped out by a massive decline in sales in January 2020
- Japan's light vehicle sale in Q4 of 2019 were at roughly the same level as compared to 2018 but large automakers expect decline slight decline in 2020
- Major currencies continue to depreciate against the dollar due to strong US economy and slowing growth in other regions.

● Last Year ● May Data ● Most recent data

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AV’s methodology breaks out Tier One Auto Companies into key Sub Segments.

Chassis

Axles, exhaust, suspension, brakes, bearings, 4WD components, fuel tanks, bearings

Powertrain

Drive controls, engines, transmissions, 5C components, pistons, heads, engine cooling and air management, injectors, turbochargers, tubes and hoses, antivibration systems

Electrical & Electronics

antilock braking system, lamp and headlights, batteries harnesses, entertainment and infotainment system, control modules, regulator, electrical wirings, and air conditioning units

Exterior/Body

Class A stamping, non-/structural stampings, frame/subframe components, body hardware glass, paint, body molding, fascias, wiper systems, door handles, seals, and wheels

Interior

Seats, seat belts, interior products, safety related products, analog instrument panels (IPs), trim, carpet, headlines, mirrors, climate control

Conglomerates

Suppliers a composite of the above categories with no distinct specialization

Applied Value has assessed 84 publicly traded Auto Tier 1 companies across 6 different operational segments.

Segment	Companies	Total in Analysis
Chassis	akebono, F.tech inc., Mando, SKF, Meritor, Press Kogyo, Dana, JTEKT, Dorman, AAM, SAF-Holland, Showa, Nissin, Cooper Standard, NSK, Martinrea	16
Powertrain	SMP, Cummins, Tupy, Musashi, Linamar, F.C.C., BorgWarner, Nemak, Hitachi, Modine, Delphi, Rheinmetall Automotive, NGK, Exedy, Allison Transmission, Sumitomo Riko, Tenneco, Denso	18
Electronics	Mitsubishi Electric, Valeo, Nippon Seiki, Hyundai Mobis, Hella, Omron, Voxx International Corporation, Hi-Lex, Koito, Stanley, Mitsuba, Aptiv, Gentex Corporation, Tokai Rika, Visteon, Metair, Flex, Stoneridge, Sumitomo Electric, Sanden, Panasonic	21
Exterior/Body	Shiloh, Sungwoo Hitech, Topre, G-Tekt Corporation, Superior Industries, Gestamp, Unipres	7
Interior	Toyota Boshoku, TS Tech, Nihon Plast Co., Ltd., Gentherm Electronics, Lydall, Toyoda Gosei, Lear Corporation, Tachi-S, Autoneum, Adient, Autoliv, Faurecia, Kasai	13
Conglomerates	NBHX, Continental, LG, Aisin, ITW, ZF, Horizon Global, Futaba, Magna	9

Applied Value has analyzed 16 companies in the Chassis segment.

Chassis

Axles, exhaust, suspension, brakes, bearings, 4WD components, fuel tanks, bearings

Executive Summary:

- The Chassis segment was the hardest hit in terms of revenue, posting a decline of 9.7% Q-o-Q and extending the decline for all 2019 to 4.0% YoY.
- NSK and Cooper-Standard had the largest gross margin decline in Q4 2019, while Akebono had the worst performance over the same period.

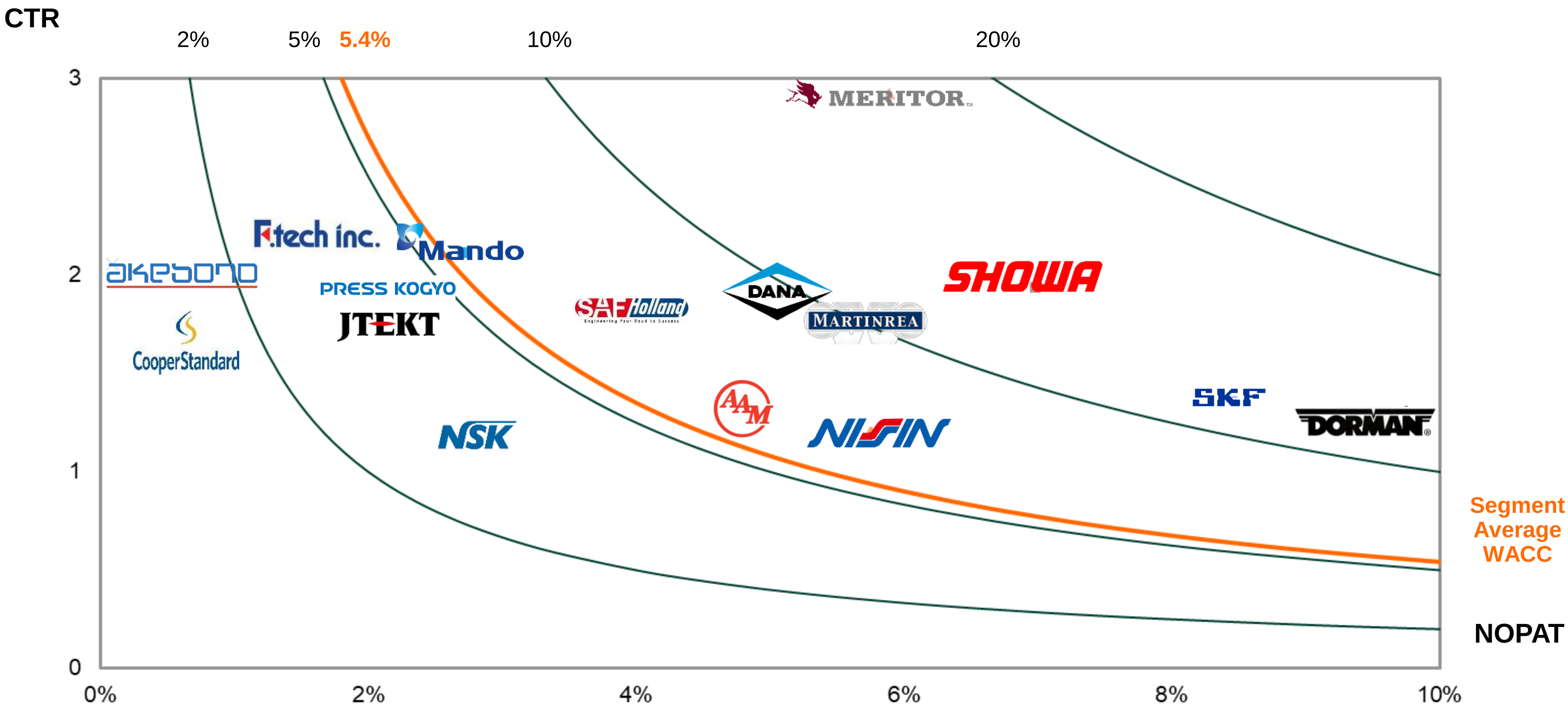
Chassis Segment Financial Performance Highlights:

LTM Average

Revenue Growth	EBIT Margin	SG&A/Sales
-4.0%	5.9%	8.9%

COGS/Sales	Gross Margin	Gross Margin Volatility
83.5%	16.6%	1.1%

ROIC snapshot for Chassis segment.
Peer Group ROIC LTM



Top Performers (LTM ROIC)	Meritor	17.2%	Showa	13.5%	Dorman	12.7%
Bottom Performers (LTM ROIC)	Akebono	0.2%	Cooper	1.6%	NSK	3.2%

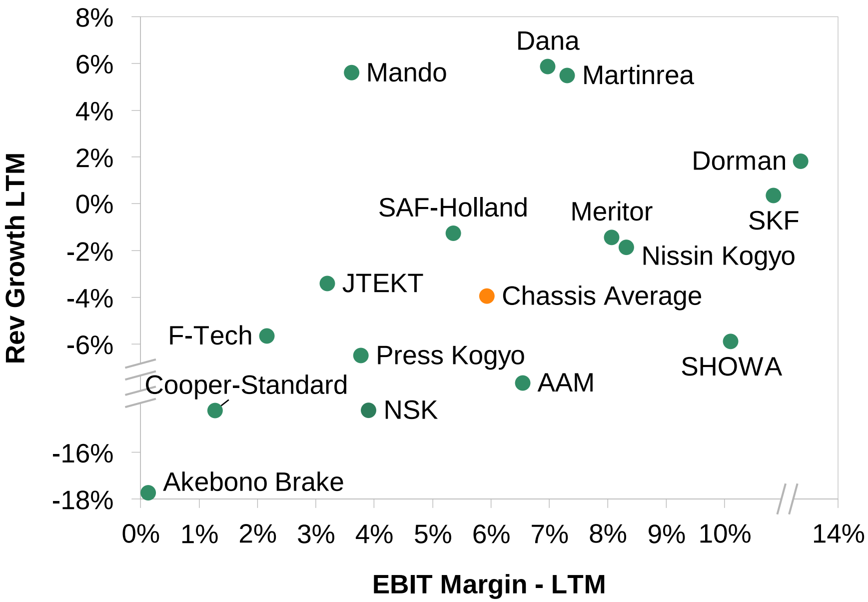
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

WACC = Weighted Average Cost of Capital (the required return that the company must generate in order create value, i.e. a ROIC>WACC creates shareholder value)

Source: Capital IQ, Annual reports, Applied Value Analysis.
WACC: Damodaran Online.

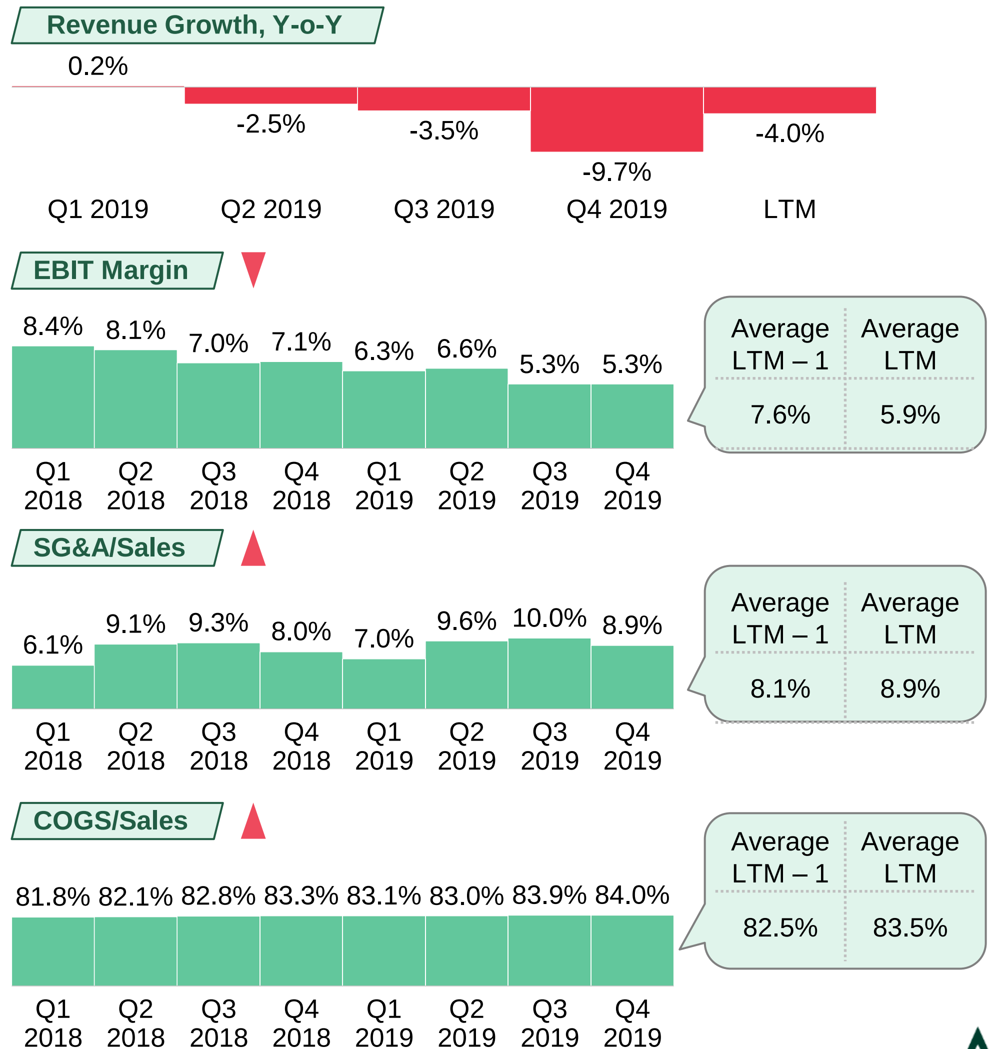
The Chassis segment was the hardest hit in terms of revenue, posting a decline of 9.7% Q-o-Q and extending the decline for all 2019 to 4.0% YoY.

Chassis' EBIT Margin x Revenue Growth, year-over-year



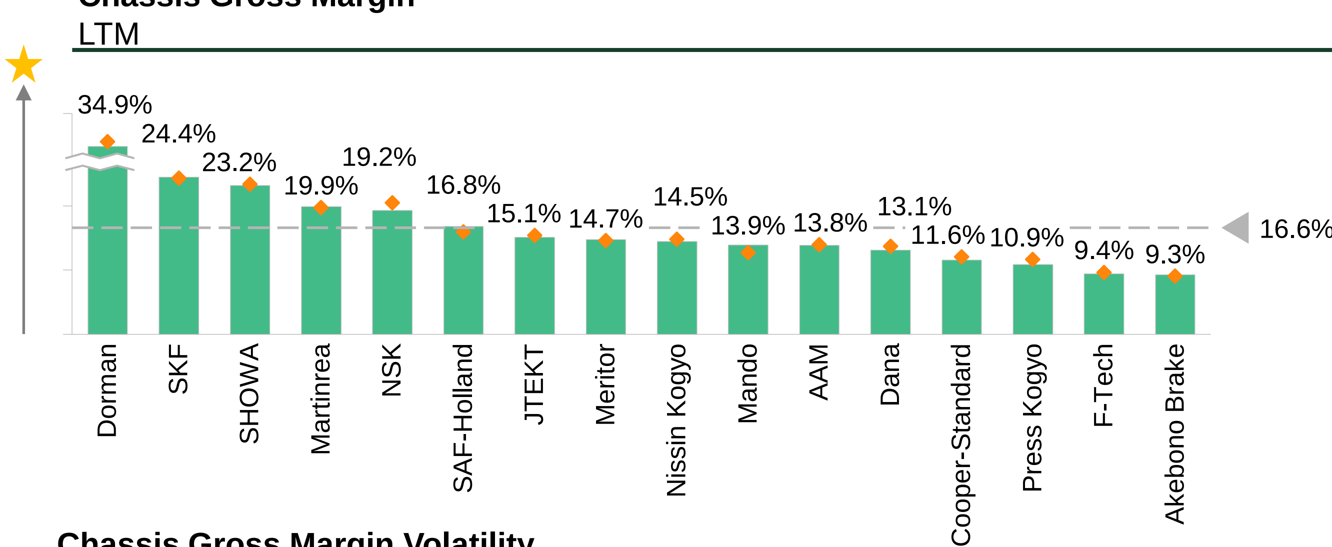
- The segment saw significant revenue decline in LTM of 4.0% with a 9.7% decline in the fourth quarter alone. Margin also declined significantly in the fourth quarter while SG/A and COGS expenses continue to rise.
- Major Japanese firms such as JTEKT and NSK significantly expanded their capacity for electric hydraulic brakes in 2019, indicating a positive outlook for electric vehicle demand despite the current weak market environment.
- Dana was an outlier in terms of revenue growth in FY 2019, claiming record earnings of $8.6 billion and a 6% YoY growth rate. Growth has been attributed to the successful medium-duty electric truck program with fully integrated Dana e-Powertrain.
- Akebono's revenue dropped 17% due to loss of product orders of next-generation models of major automakers in NA, Japan, and China.

Chassis' Quarterly Development

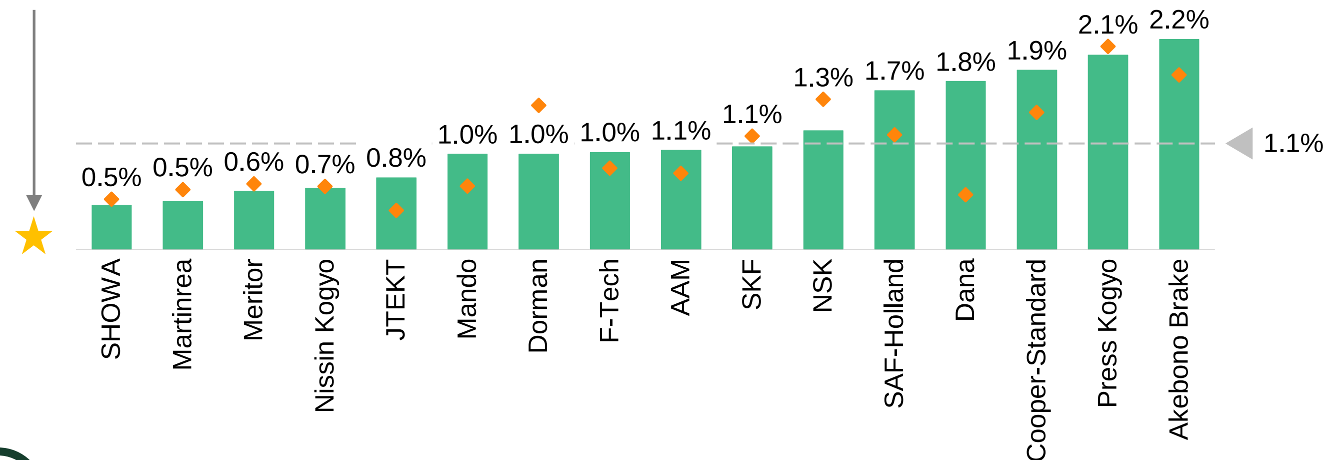


NSK and Cooper-Standard had the largest gross margin decline in Q4 2019, while Akebono had the worst performance over the same period.

Chassis Gross Margin
LTM



Chassis Gross Margin Volatility
LTM



- American Axle's revenue declined 10.1% in FY19, with both Gross Margin and EBITDA down more than 2%. The main contributing factor to this decline is weak global demand as well as the major GM worker strike and work stoppage that occurred in Q4 of 2019.
- Strong demand in China and successful cost cutting helped SKF maintain its relatively high EBIT margin at 10.8% in LTM despite a general segment wide trend of EBIT margin erosion.
- To build on the success of their medium-duty electric truck program, Dana announced partnership with Kenworth to collaborate on the development of new zero-emission truck as well as level 4 autonomous tractors. Dana will supply the e-power system as well as develop software and controls.

Note 1: Gestamp does accounting by nature, which only considers raw materials instead of all COGS
Note 2: Dorman only serves Aftermarket, thus the higher Gross Margins compared to peers
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Applied Value has analyzed 18 companies in the Powertrain segment.

Powertrain

Drive controls, engines, transmissions, 5C components, pistons, heads, engine cooling and air management, injectors, turbochargers, tubes and hoses, antivibration systems

Executive Summary:

- Powertrain segment performed relatively well in the first three quarters but saw a drastic decline of 5.9% in Q4 of 2019.
- Average gross margin saw slight decline of around 0.9% in LTM.

Powertrain Segment Financial Performance Highlights:

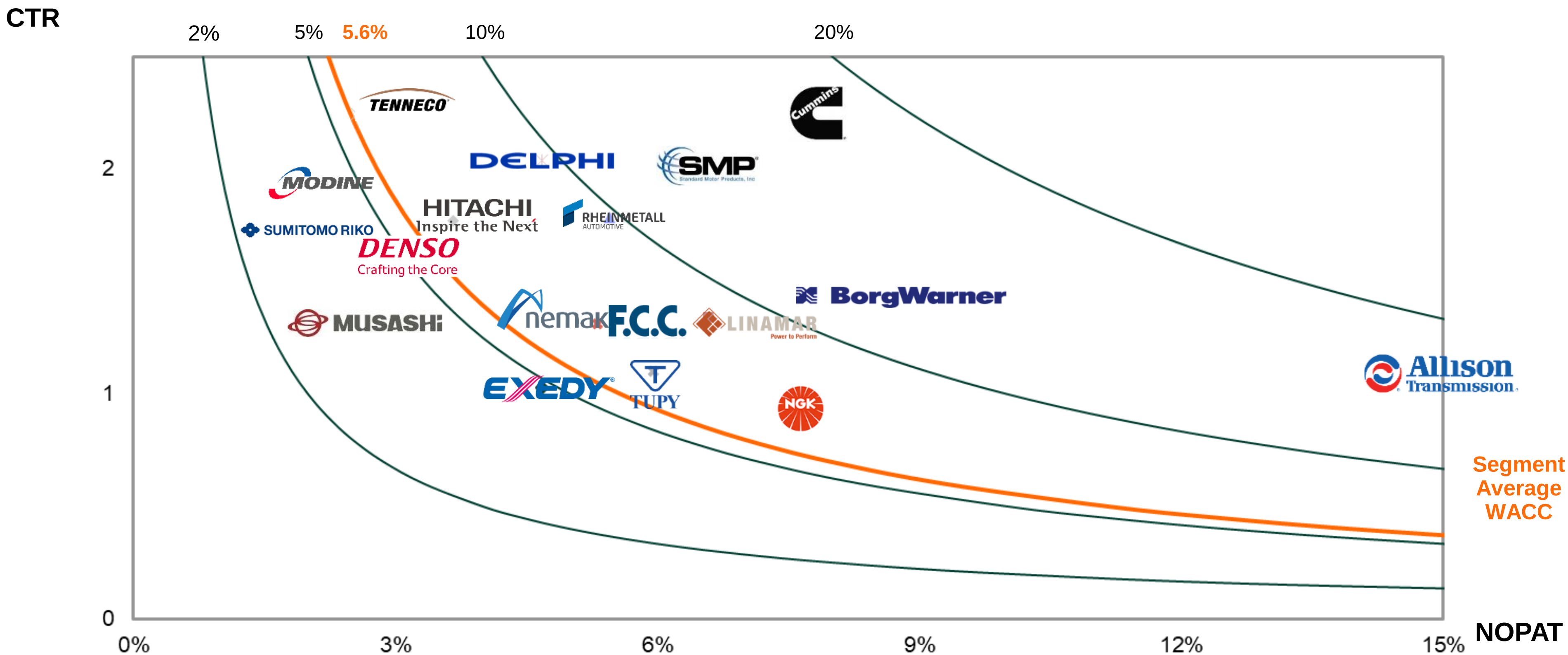
LTM Average

Revenue Growth	EBIT Margin	SG&A/Sales
0.2%	8.5%	11.2%

COGS/Sales	Gross Margin	Gross Margin Volatility
77.7%	22.7%	1.2%

ROIC snapshot for Powertrain segment.

Peer Group ROIC LTM



Top Performers (LTM ROIC)	Cummins	17.8%	Allison	16.6%	Standard Motor	12.5%
Bottom Performers (LTM ROIC)	Sumitomo Riko	2.6%	Musashi	3.4%	Modine	4.3%

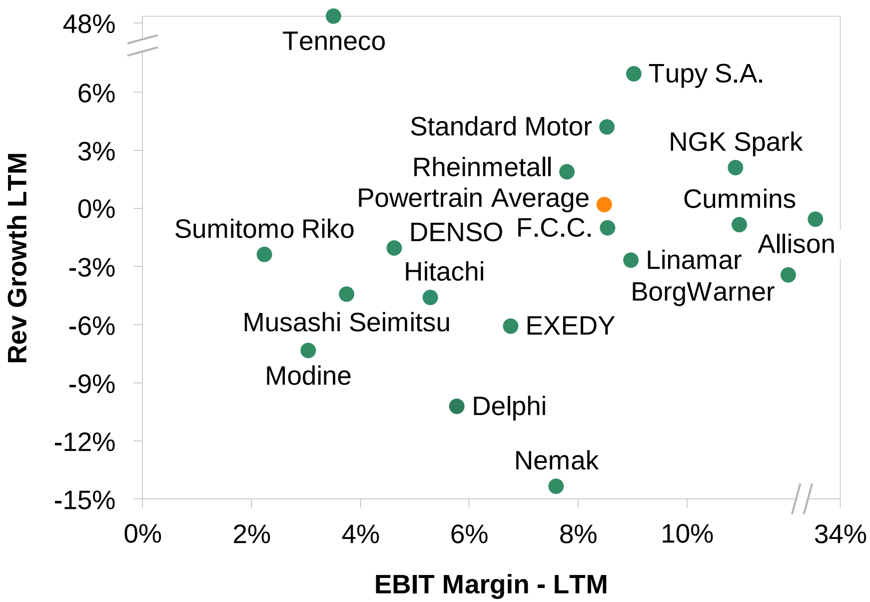
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

WACC = Weighted Average Cost of Capital (the required return that the company must generate in order create value, i.e. a ROIC>WACC creates shareholder value)

Source: Capital IQ, Annual reports, Applied Value Analysis.
WACC: Damodaran Online.

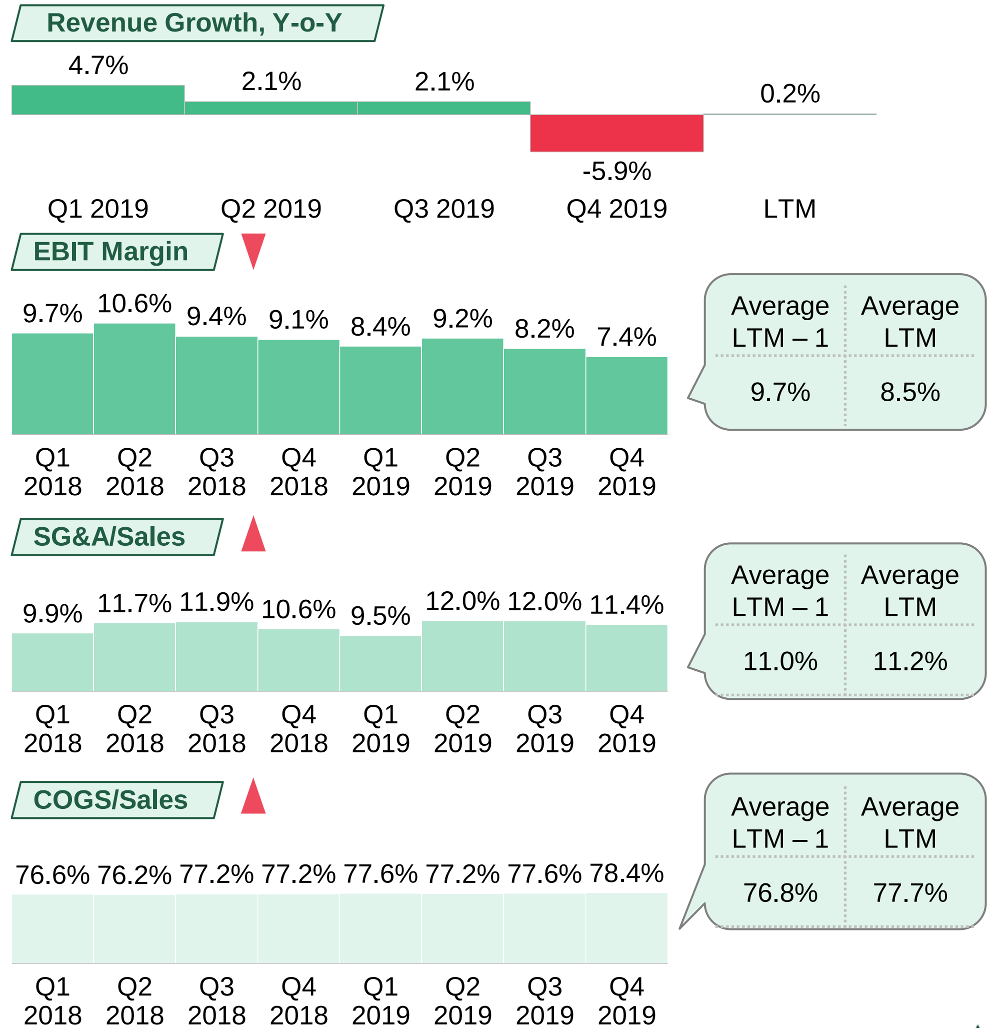
Powertrain segment performed relatively well in the first three quarters but saw a drastic decline of 5.9% in Q4 of 2019.

Powertrain's EBIT Margin x Revenue Growth, year-over-year

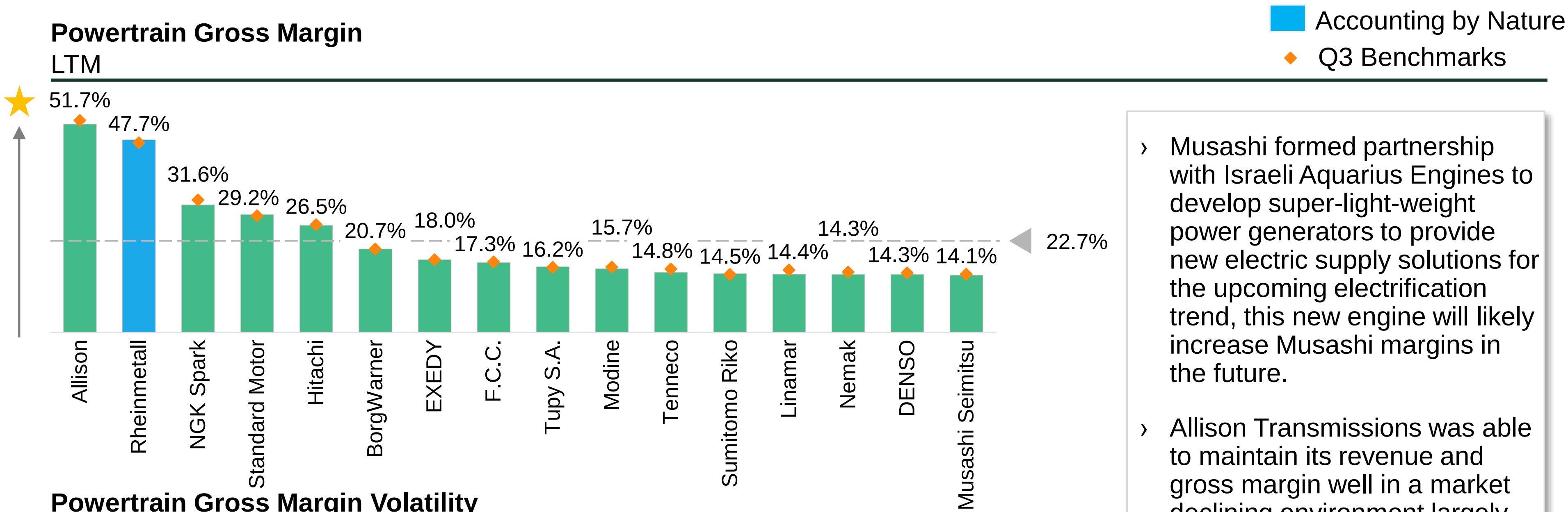


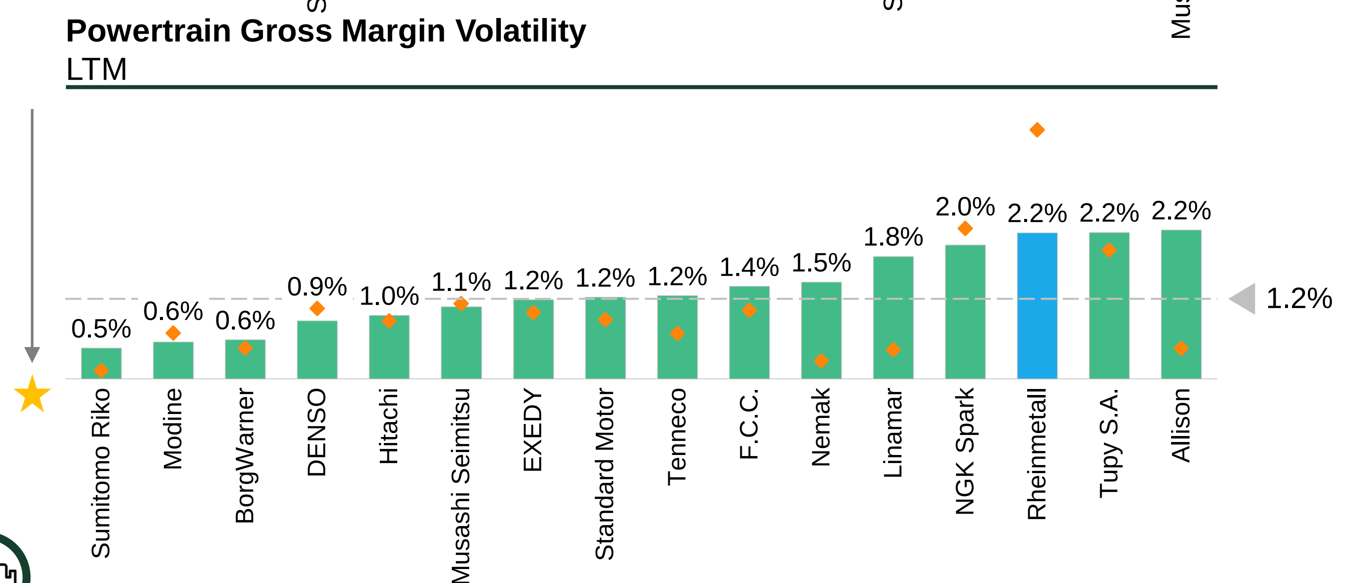
- Powertrain segment saw slight revenue increase for the first three quarters of 2019 but a drastic decline in Q4 driven mainly by Delphi and Nemak.
- Tupy had revenue increase largely due to favorable currency exchange ratio and pricing increases, volume declined in LTM.
- NGK was one of the firms that had revenue growth in LTM largely due to its joint-venture with CECYLLS and Mitsubishi Hitachi Power Systems to manufacture and sell cylindrical cell stacks used in hydrogen fuel cell technology.
- Tenneco's 48% revenue growth is due to its Federal Mogul acquisition in Q4 2018. Consolidated numbers show a revenue drop of 2%.

Powertrain's Quarterly Development



Average gross margin in the powertrain segment saw slight decline of around 0.9% in LTM.





- Musashi formed partnership with Israeli Aquarius Engines to develop super-light-weight power generators to provide new electric supply solutions for the upcoming electrification trend, this new engine will likely increase Musashi margins in the future.
- Allison Transmissions was able to maintain its revenue and gross margin well in a market declining environment largely due to rising demand for its automatic transmission system mainly used on light-duty trucks.
- Tupy managed to increase its EBITDA margin slightly despite gross margin decline largely due to its successful implementation of commercial pricing strategy as well as efficiency improvements in the manufacturing process.

Note 1: Allison's high gross margin is attributed to it's focus on automatic transmissions
Note 2: Automotive is only 10% of Hitachi's Revenue
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Applied Value has analyzed 21 companies in the Electronics & Infotainment segment.

Electronics & Infotainment

antilock braking system, lamp and headlights, batteries harnesses, entertainment and infotainment system, control modules, regulator, electrical wirings, and air conditioning units

Executive Summary:

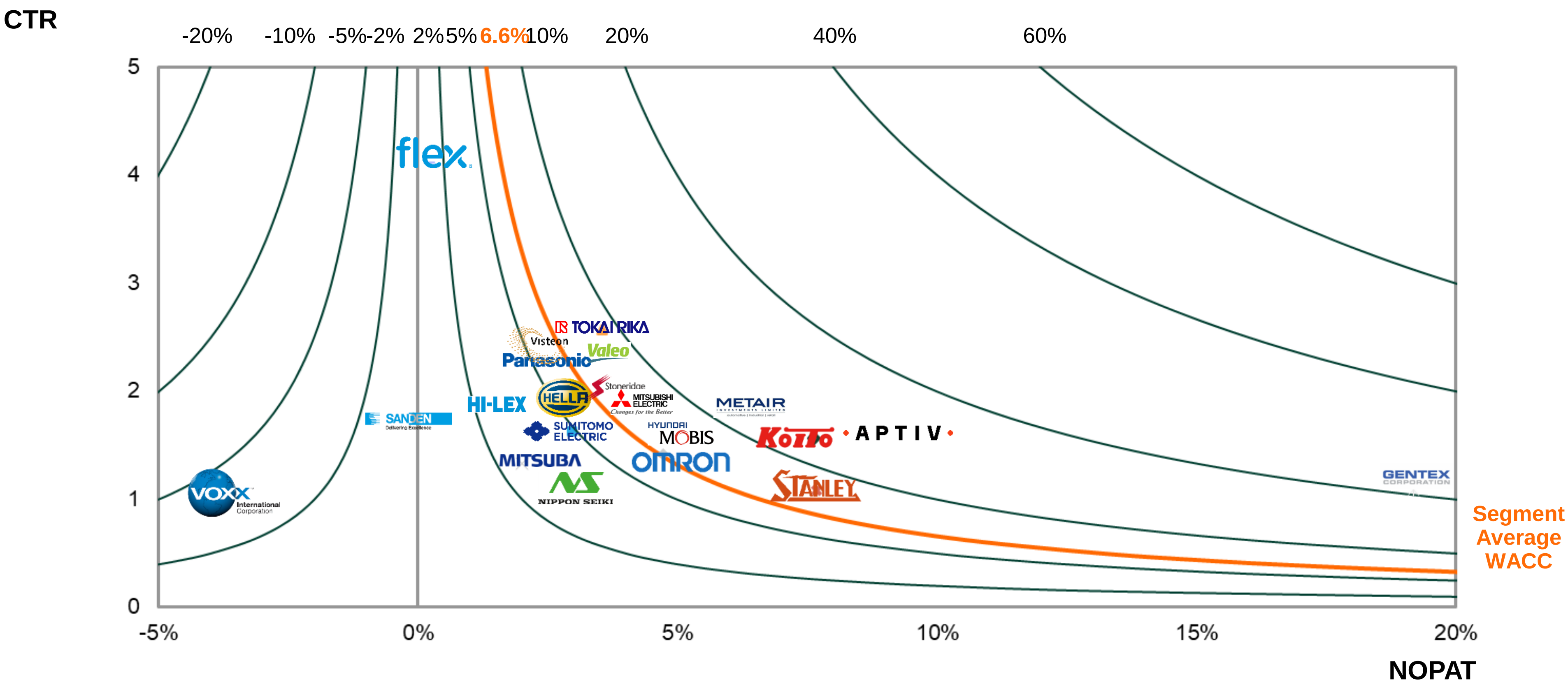
- Revenue in the Electronics & Infotainment segment declined significantly in Q4 2019, further pushing LTM trend of revenue reduction.
- The segment's Q4 gross margin is down 0.8% compared to Q3 2019, and 1.1% compared to 2018.

Electronics & Infotainment Segment Financial Performance Highlights:
LTM Average

Revenue Growth	EBIT Margin	SG&A/Sales
-4.0%	5.9%	11.6%

COGS/Sales	Gross Margin	Gross Margin Volatility
79.7%	20.9%	1.2%

ROIC snapshot for Electronics & Infotainment segment.
Peer Group ROIC LTM



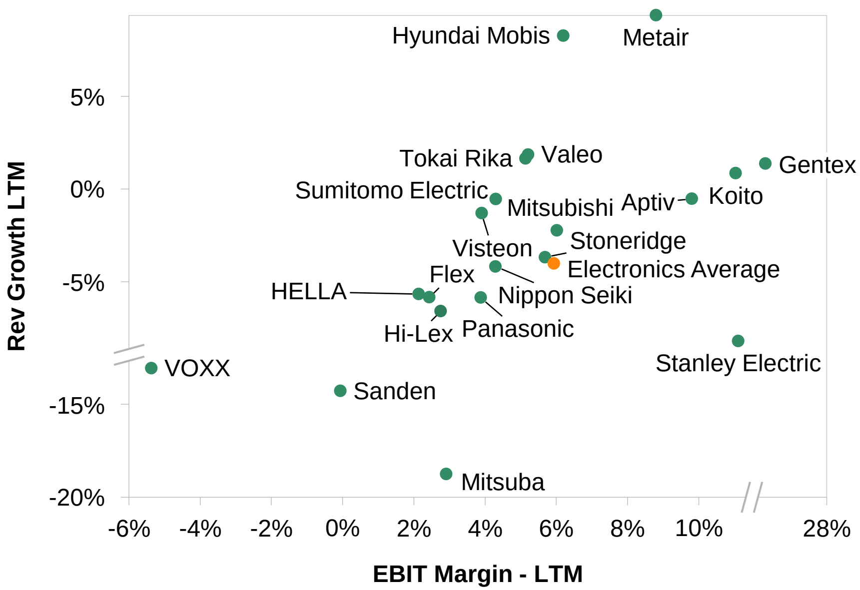
Top Performers (LTM ROIC)	Gentex	20.8%	Aptiv	13.7%	Koito	20.0%
Bottom Performers (LTM ROIC)	Voxx	-4.1%	Sanden	-0.1%	Mitsuba	2.7%

ROIC = Return on Invested Capital (actual return that the company has generated after tax)

WACC = Weighted Average Cost of Capital (the required return that the company must generate in order create value, i.e. a ROIC>WACC creates shareholder value)

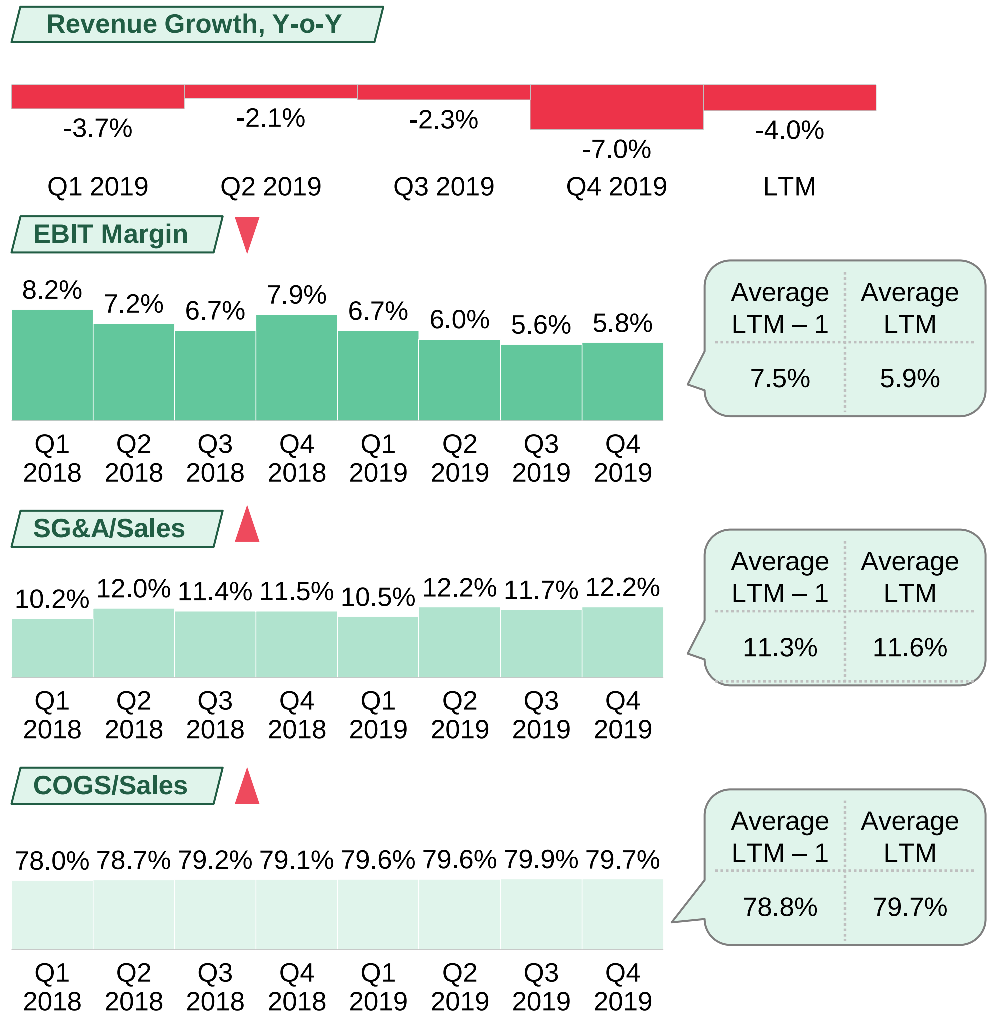
Revenue in the Electronics & Infotainment segment declined significantly in Q4 2019, further pushing LTM trend of revenue reduction.

Electronics’ EBIT Margin x Revenue Growth, year-over-year

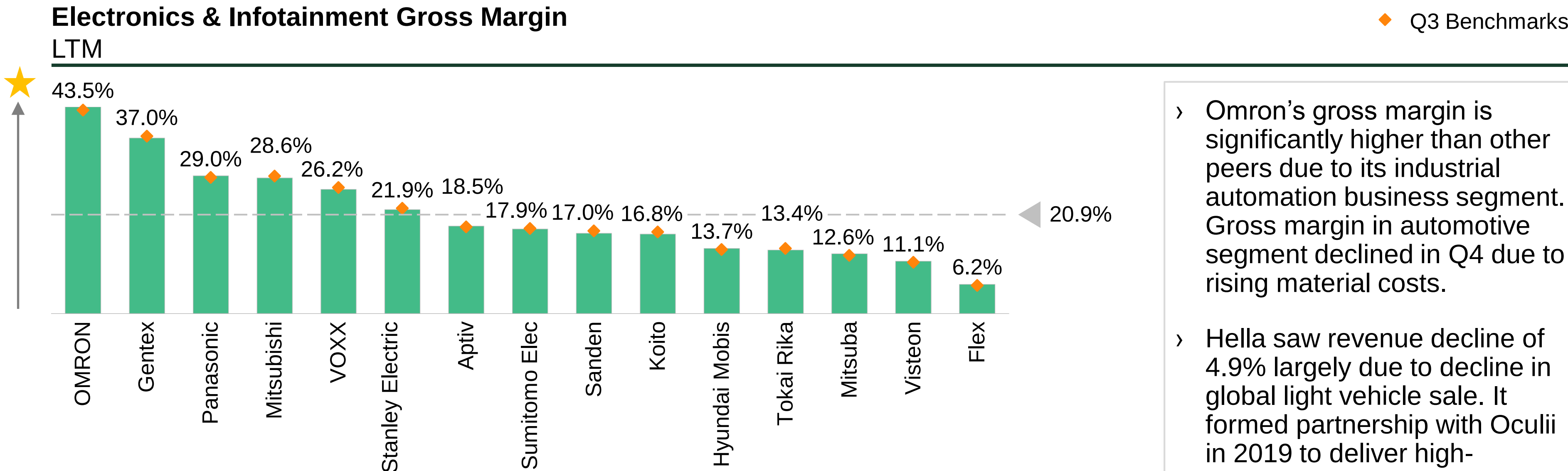


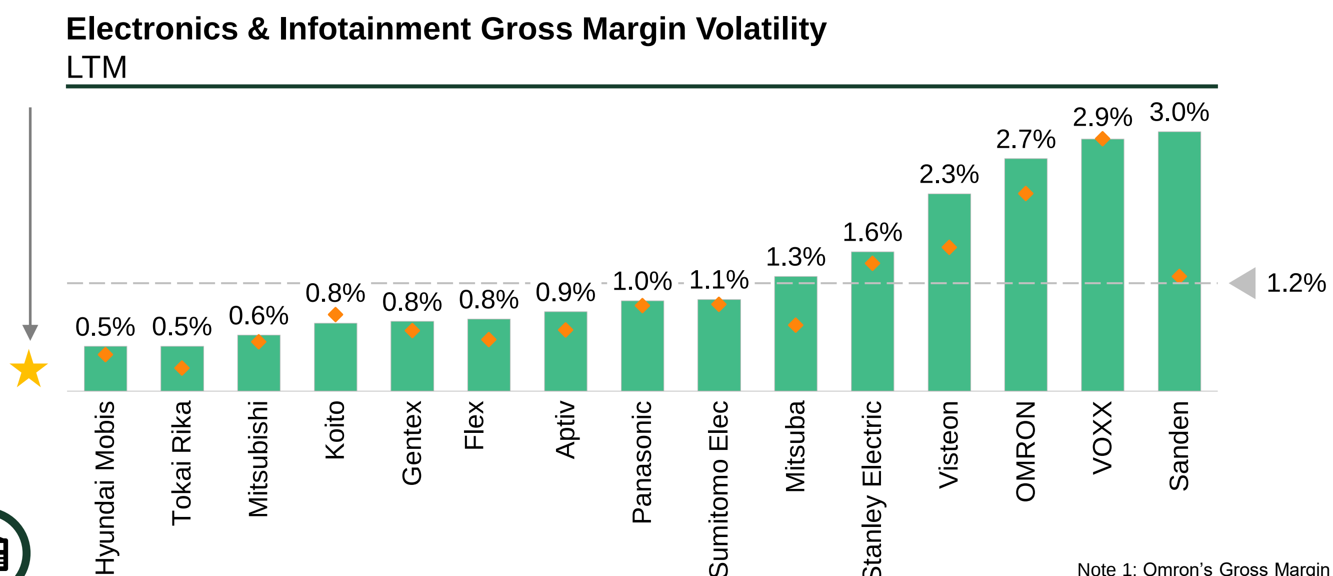
- Revenue in the electronic segment declined significantly in Q4 2019 along with the overall slump in the automotive industry.
- Gentex was able to increase annual revenue by 1.3% in 2019 due to rising demand of its full display mirror by 89%. Gentex estimated that the General Motor strike and work stoppage negatively impacted its quarterly revenue by 3%.
- Valeo is one of the few firms with a slight revenue increase in LTM, although the company estimates that its sales volume would have increased by 8% in the quarter if not for the impact of the GM worker strike. Overall the company estimates that the strike cost the company $180 million in revenue and $60 million in operating profit.
- Voxx net sales dropped 13%, dragged by delays on OEMs launching new models.

Electronics’ Quarterly Development



The segment's Q4 gross margin is down 0.8% compared to Q3 2019, and 1.1% compared to 2018.





- Omron's gross margin is significantly higher than other peers due to its industrial automation business segment. Gross margin in automotive segment declined in Q4 due to rising material costs.
- Hella saw revenue decline of 4.9% largely due to decline in global light vehicle sale. It formed partnership with Oculii in 2019 to deliver high-performance radar sensing solutions for autonomous vehicles. The sensing solution package will likely yield higher margin compared to its current array of sensors.
- Sanden's costs volatility was the highest among the peer group, as the company struggled to deal with the impact of currency volatility in raw material value chain.

Note 1: Omron's Gross Margin is higher because of their Industrial Automation Business segment
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Applied Value has analyzed 7 companies in the Exterior/Body segment.

Exterior/Body

Class A stamping, non-/structural stampings, frame/subframe components, body hardware glass, paint, body molding, fascias, wiper systems, door handles, seals

Executive Summary:

- The Exterior/Body segment revenue growth recovered slightly in Q3 but saw significant decline of 5.6% in Q4 2019.
- Topre and Unipres experienced the most significant drop in Gross Margin in Q4 2019.

Exterior/Body Segment Financial Performance Highlights:

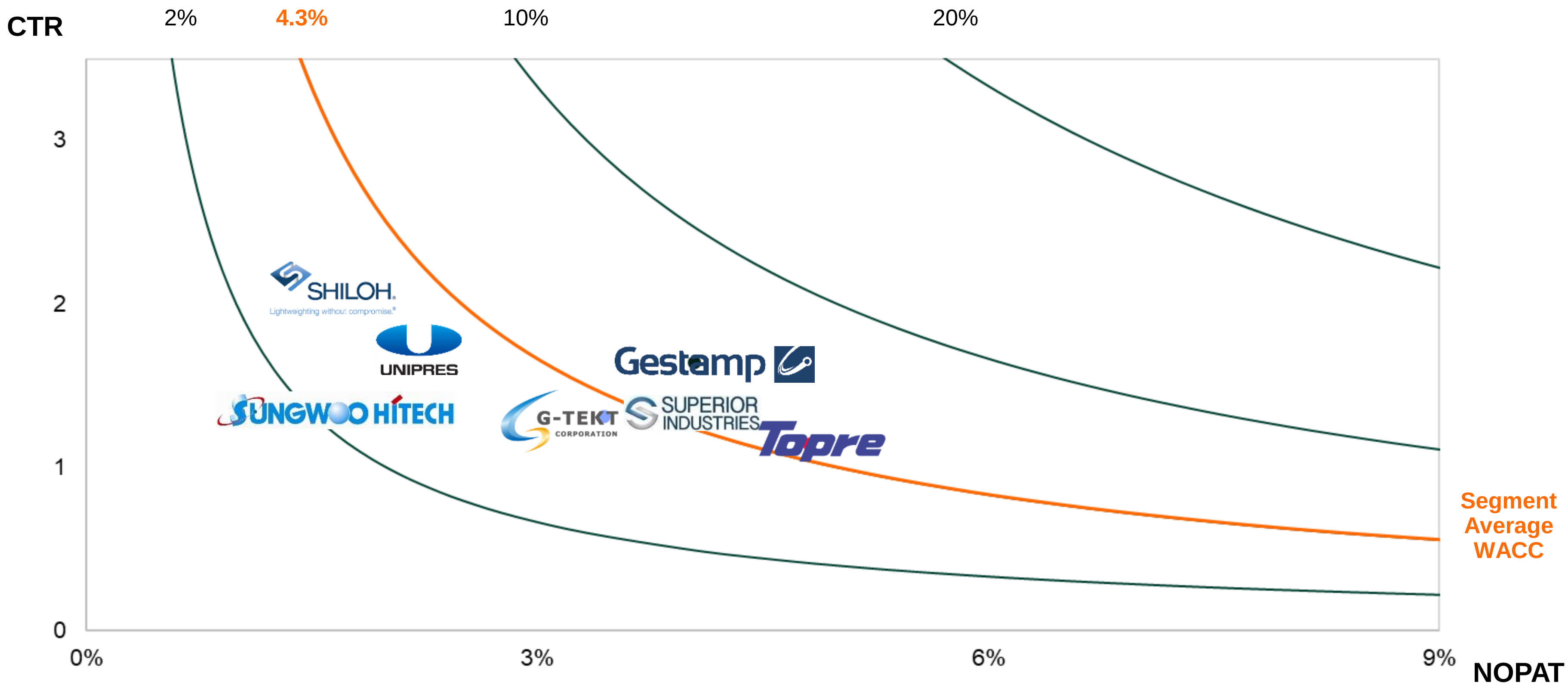
LTM Average

Revenue Growth	EBIT Margin	SG&A/Sales
-2.6%	4.2%	7.8%

COGS/Sales	Gross Margin	Gross Margin Volatility
85.9%	15.0%	1.5%

ROIC snapshot for Exterior/Body segment

Peer Group ROIC LTM



Top Performers (LTM ROIC)	Gestamp	6.6%	Topre	5.5%	Superior	4.9%
Bottom Performers (LTM ROIC)	Sungwoo	2.2%	Shiloh	3.1%	Unipres	3.7%

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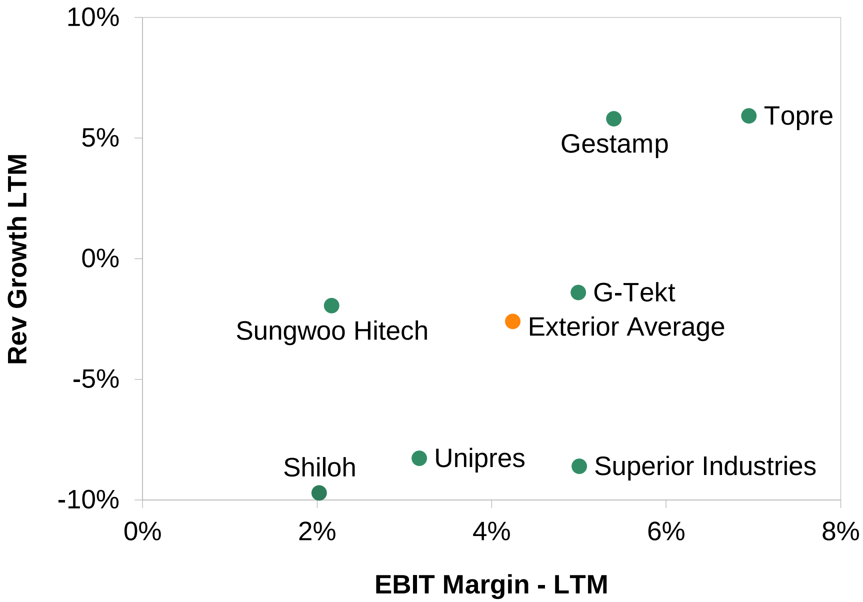
Source: Capital IQ, Annual reports, Applied Value Analysis.
WACC: Damodaran Online.

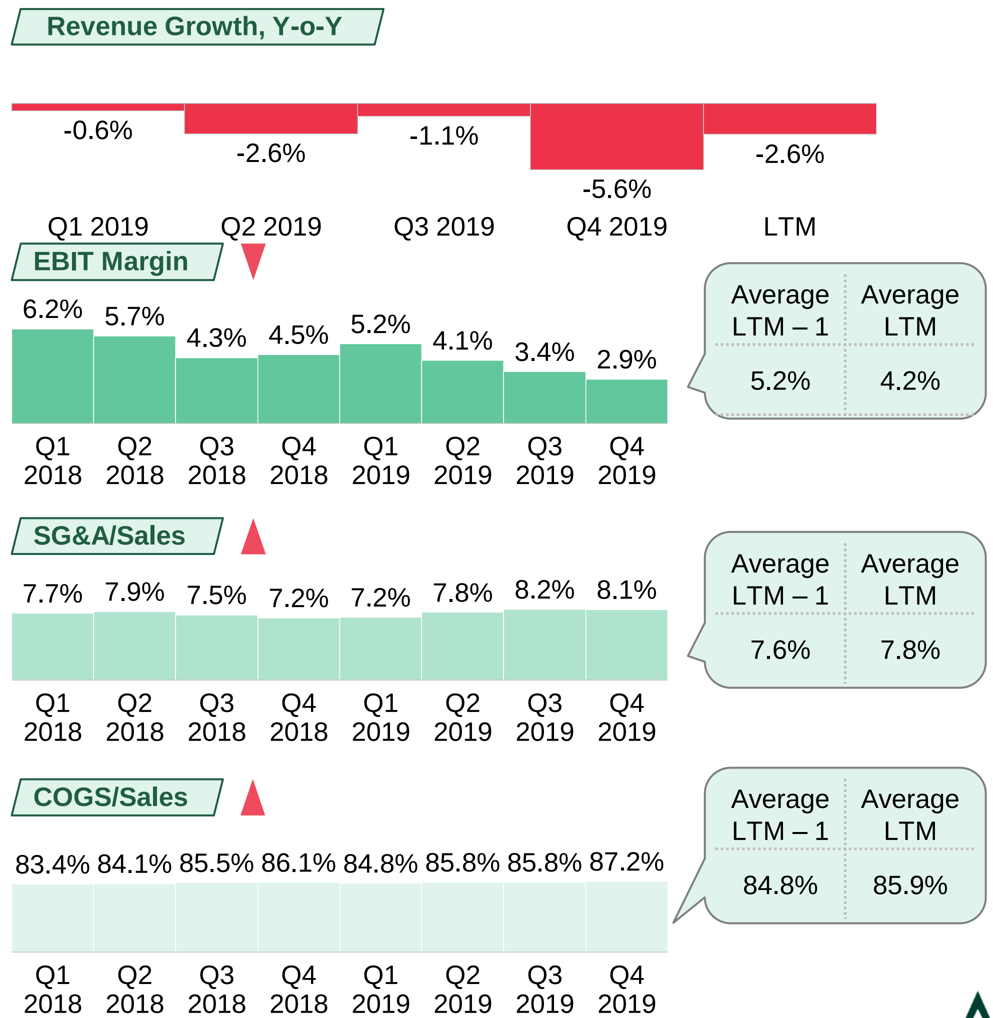
The Exterior/Body segment revenue growth recovered slightly in Q3 but saw significant decline of 5.6% in Q4 2019.

Exterior/Body's EBIT Margin x Revenue Growth, year-over-year



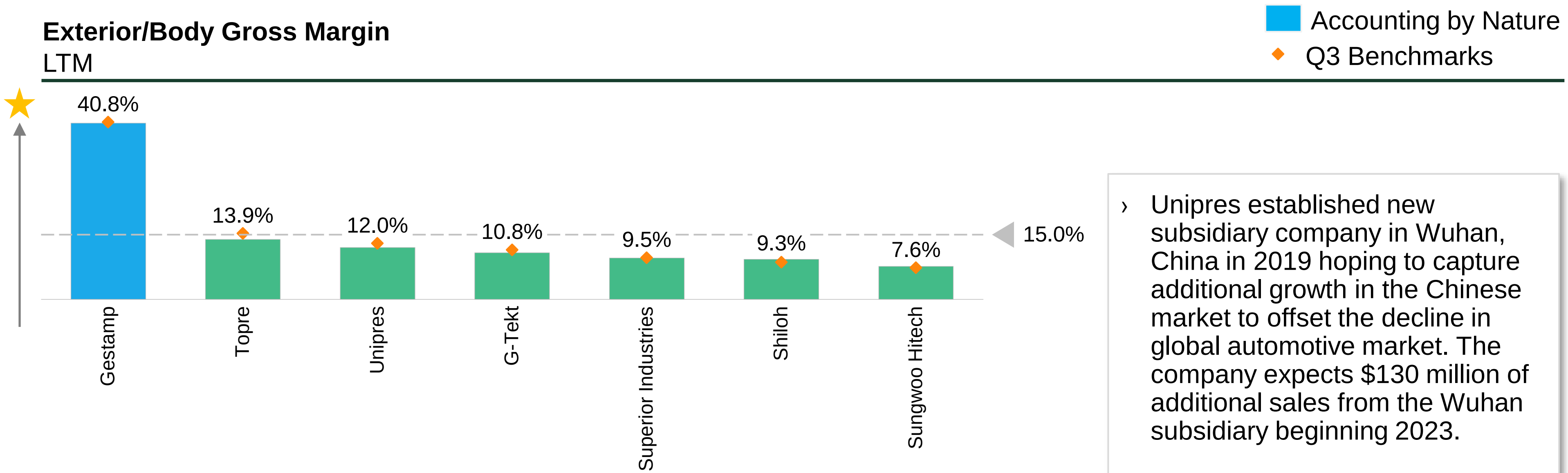
- The exterior/body segment had significant revenue decline in Q4 of 2019 with Superior Industries declining the most by 15% in Q4 and 8.6% in the LTM, as it is heavily reliant on GM as its largest customer, which had union strikes and a production slowdown in the same period.
- Exterior segment saw EBIT margin decline of 1.3% in the LTM, the largest decline of all segment in the same period.
- Gestamp group saw revenue increase of 5% in 2019 on top of successful cost cutting operations that boosted ROIC to 6.5%.
- Unipres' revenue dropped in 2019 due to customer's production reduction, slowing down demand, and negative foreign exchange impact.

Exterior/Body's Quarterly Development

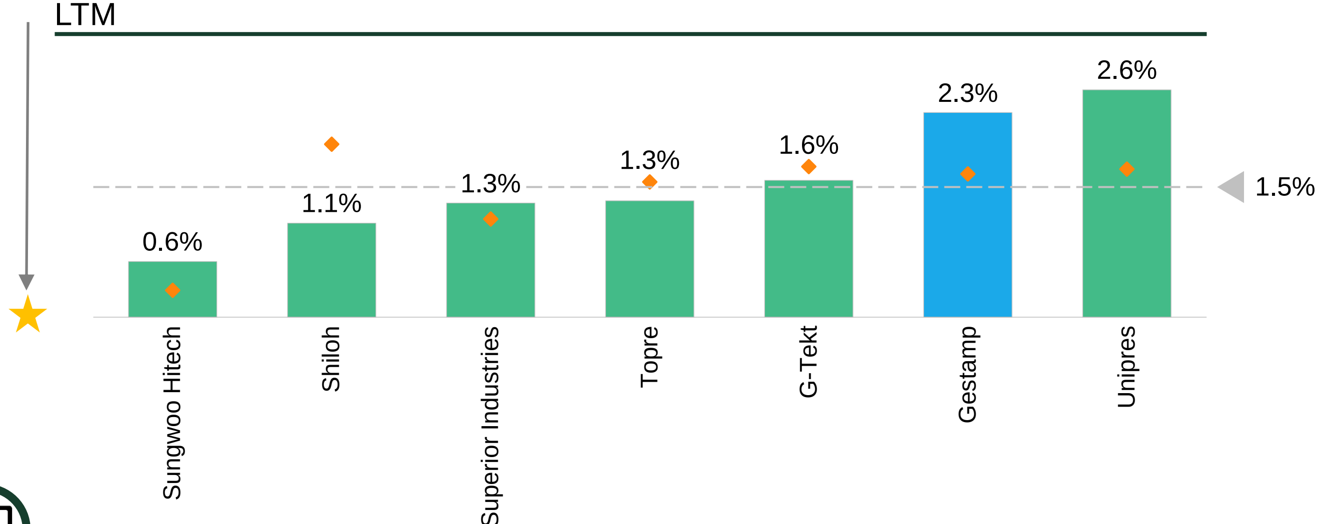


Topre and Unipres experienced the most significant drop in Gross Margin in Q4 2019.

Exterior/Body Gross Margin
LTM



Exterior/Body Gross Margin Volatility
LTM



- Unipres established new subsidiary company in Wuhan, China in 2019 hoping to capture additional growth in the Chinese market to offset the decline in global automotive market. The company expects $130 million of additional sales from the Wuhan subsidiary beginning 2023.
- Despite the uncertain auto market, Gestamp grew LTM revenue by 6.6% due to starting production in their new facility in Michigan.
- Superior Industries saw net loss of $100 million in Q4 2019 due to significant demand erosion on aluminum wheels.

Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Applied Value has analyzed 13 companies in the Interior segment.

Interior

Seats, seat belts, interior products, instrument panels (IPs), trim, carpet, headlines, HVAC, mirrors, climate control

Executive Summary:

- Interior segment saw revenue decline largely in line with the broad auto sector; TS Tech had the largest drop within the segment, decreasing 11.3%.
- Lydall experienced one of the most significant declines in Q4 Gross Margin, but remains among the top four performers in the segment.

Interior Segment Financial Performance Highlights:

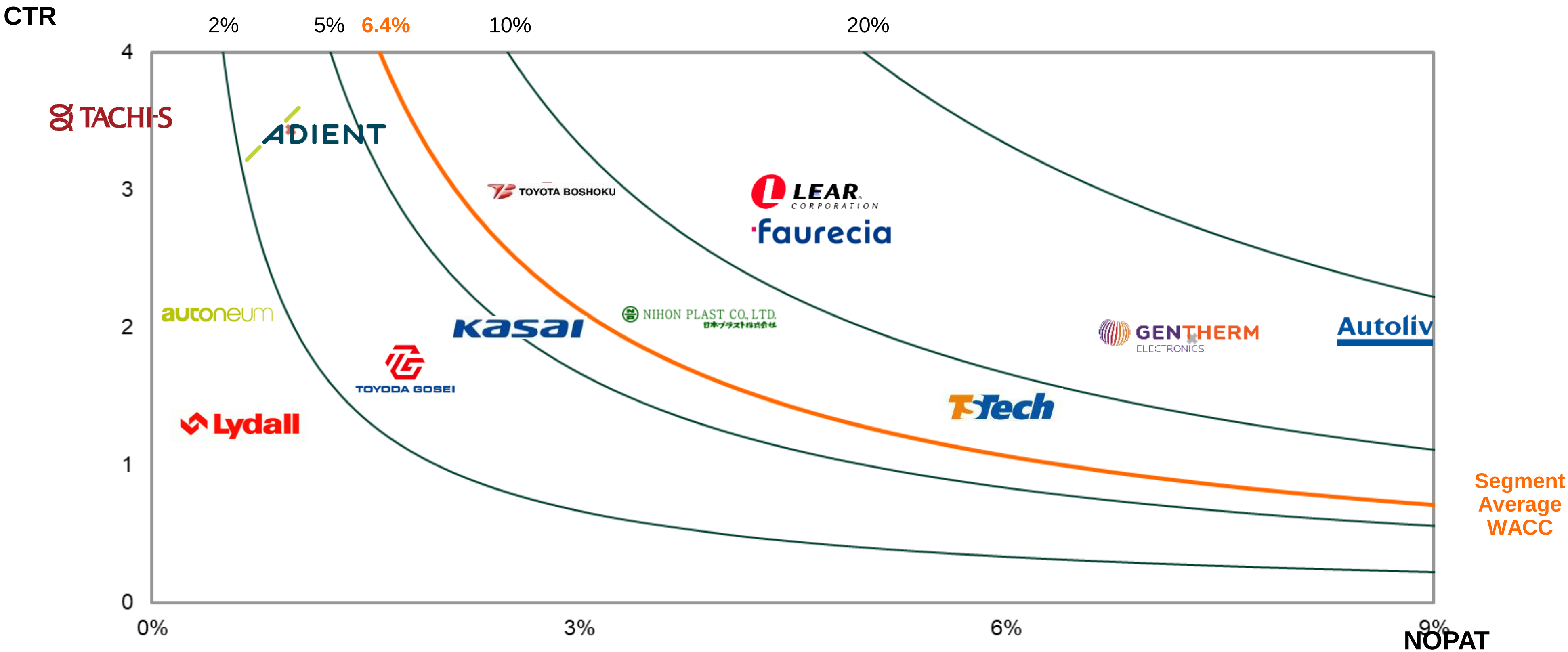
LTM Average

Revenue Growth	EBIT Margin	SG&A/Sales
-3.0%	4.2%	7.8%

COGS/Sales	Gross Margin	Gross Margin Volatility
85.9%	17.0%	0.9%

ROIC snapshot for Interior segment

Peer Group ROIC LTM



Top Performers (LTM ROIC)	Autoliv	17.5%	Gentherm	14.0%	Lear	13.9%
Bottom Performers (LTM ROIC)	Tachi-S	-0.9%	Autoneum	0.5%	Lydall	0.6%

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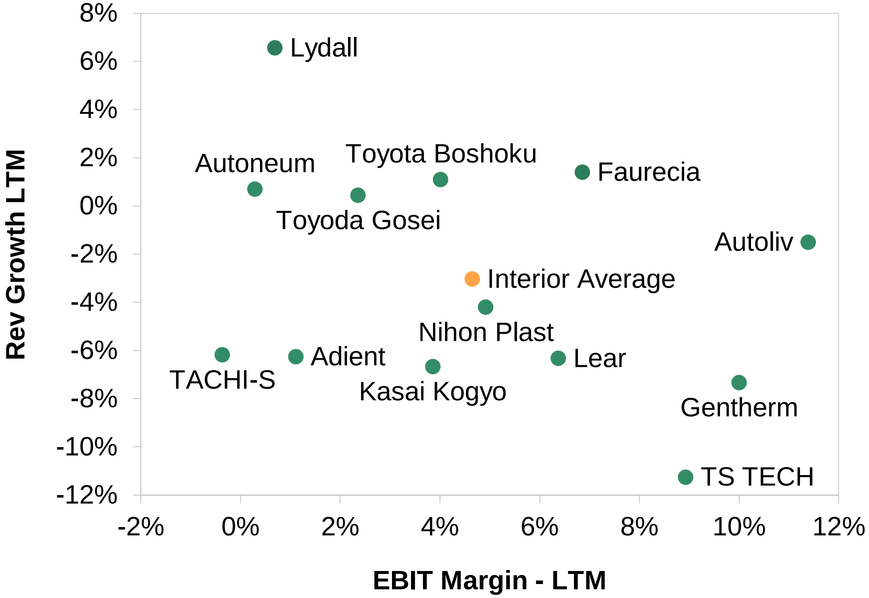
Source: Capital IQ, Annual reports, Applied Value Analysis.
WACC: Damodaran Online.

Interior segment saw revenue decline largely in line with the broad auto sector; TS Tech had the largest drop within the segment, decreasing 11.3%.

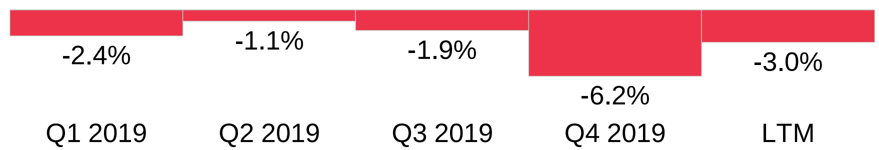
Interior's EBIT Margin x Revenue Growth, year-over-year



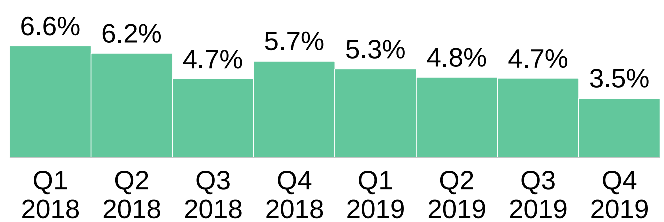
- TS Tech's reported revenue decline due to changes to the model mix, lower component and press tool sales, and the impact of exchange rates.
- Lydall was one of the only two firms that had significant revenue growth of 6% in 2019 largely due to strong performance in first half of the year with growth rate of 15%.
  - Lydall's revenue was severely impacted in Q4 of 2019 largely due to the worker strike and work stoppage at GM plants.
- Lear group had significant revenue decline of -10% in the first half of 2019 but was able to recover to -2% in Q4 of 2019, ending the LTM series down 6% Y-o-Y.

Interior's Quarterly Development

Revenue Growth, Y-o-Y

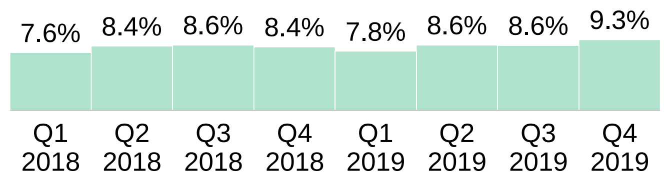


EBIT Margin



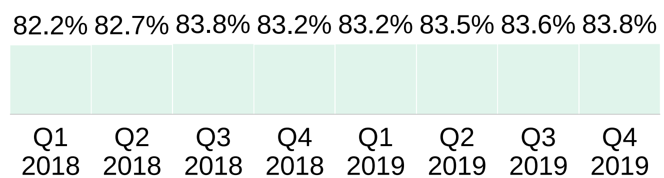
Average LTM – 1	Average LTM
5.2%	4.2%

SG&A/Sales



Average LTM – 1	Average LTM
7.6%	7.8%

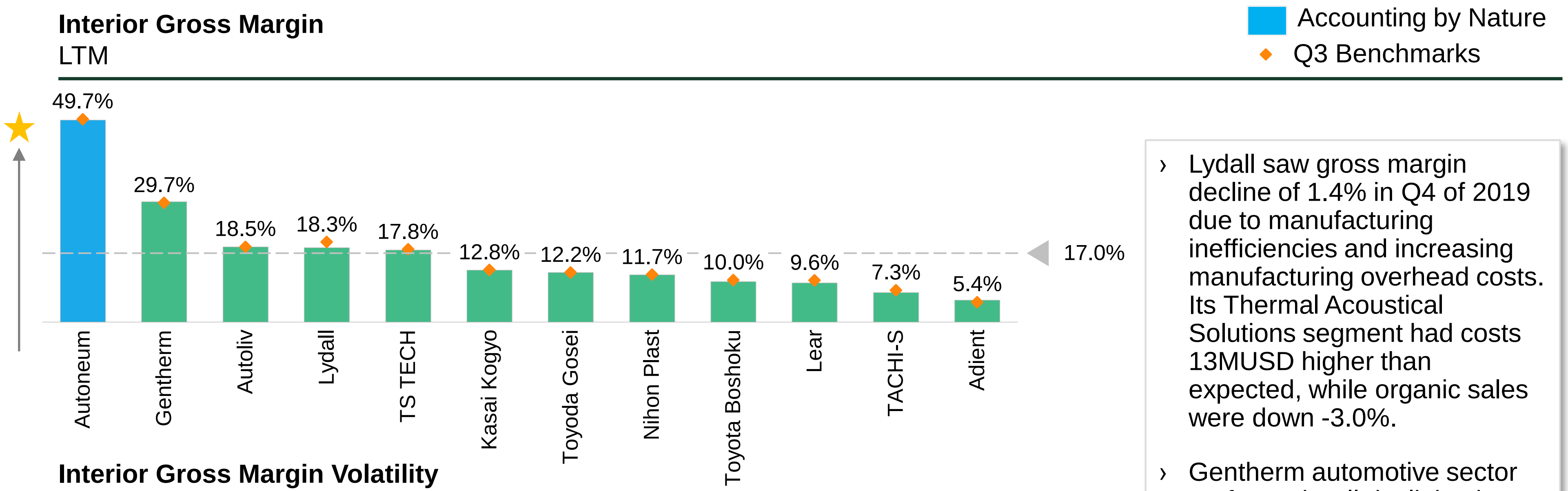
COGS/Sales



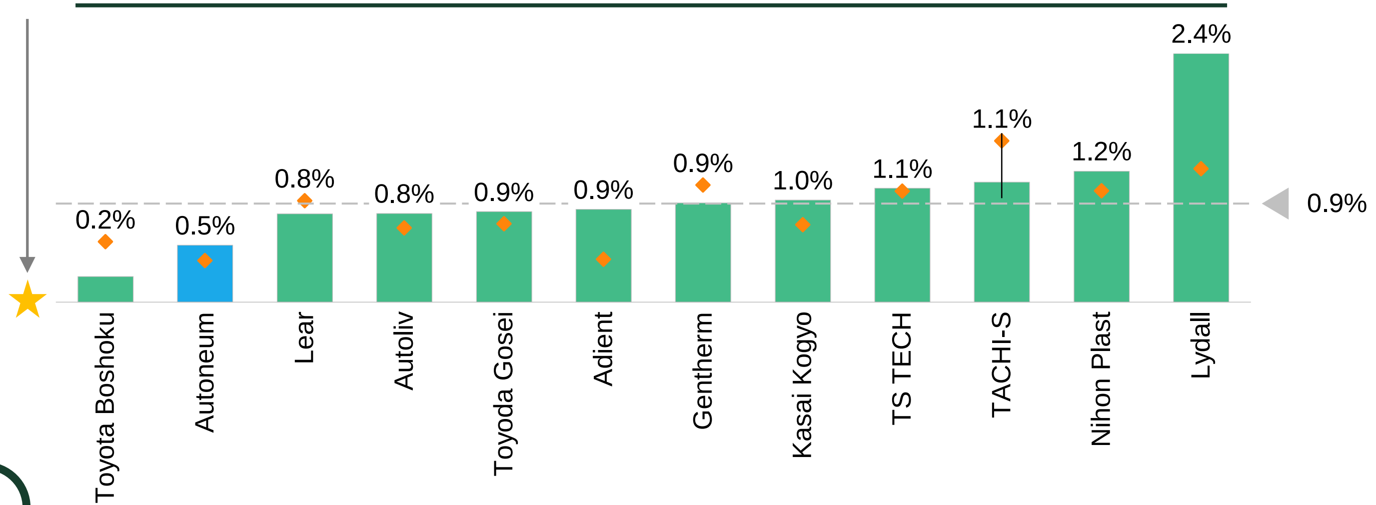
Average LTM – 1	Average LTM
84.8%	85.9%

Lydall experienced one of the most significant declines in Q4 Gross Margin but remains among the top four performers in the segment.

Interior Gross Margin
LTM



Interior Gross Margin Volatility
LTM



- Lydall saw gross margin decline of 1.4% in Q4 of 2019 due to manufacturing inefficiencies and increasing manufacturing overhead costs. Its Thermal Acoustical Solutions segment had costs 13MUSD higher than expected, while organic sales were down -3.0%.
- Gentherm automotive sector performed well declining by only 0.5% in 2019 compared to the 6% decline in automotive market. Gentherm also managed to secure $1.5 billion of contracts in 2019 in line with 2018 contract awards.
- Lear managed to book $1 billion of new business in 2019 despite challenging market conditions, however, gross margin declined due to price discounts as well as increase of material costs.

Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Applied Value has analyzed 9 companies in the Conglomerates segment.

Conglomerates

Suppliers a composite of the above categories with no distinct specialization

Executive Summary:

› Conglomerates' revenue growth stayed flat Y-o-Y, as it was the only segment to show growth in Q4 2019.

› Both gross and EBIT margins dropped for the conglomerates segment affected by unfavorable market conditions.

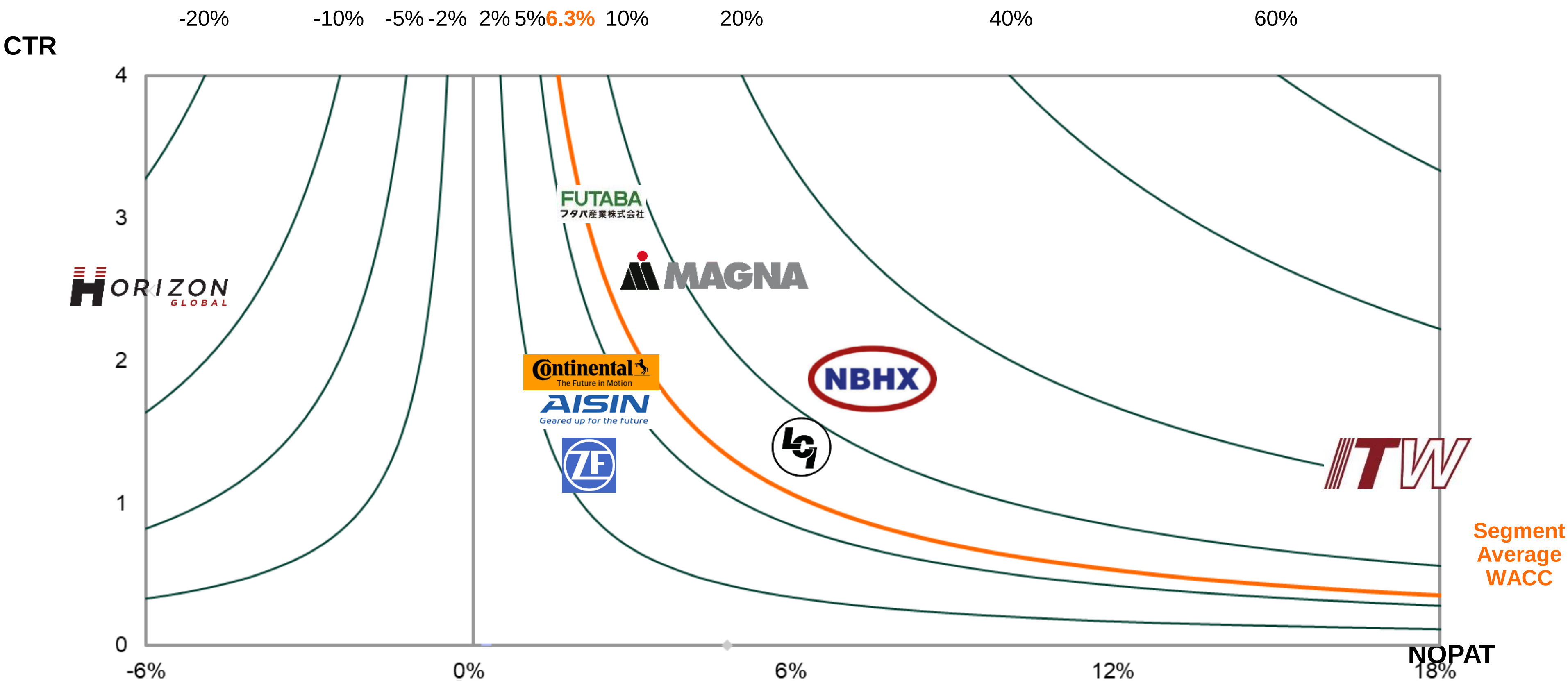
Conglomerates Segment Financial Performance Highlights:
LTM Average

Revenue Growth	EBIT Margin	SG&A/Sales
0.0%	5.6%	9.4%

COGS/Sales	Gross Margin	Gross Margin Volatility
81.8%	18.1%	0.7%

ROIC snapshot for Conglomerates segment

Peer Group ROIC LTM



Top Performers (LTM ROIC)	ITW	22.0%	Huaxiang	12.2%	Magna	11.8%
Bottom Performers (LTM ROIC)	Horizon	-15.1%	ZF	+3.2%	Aisin Seiki	3.8%

ROIC = Return on Invested Capital (actual return that the company has generated after tax)

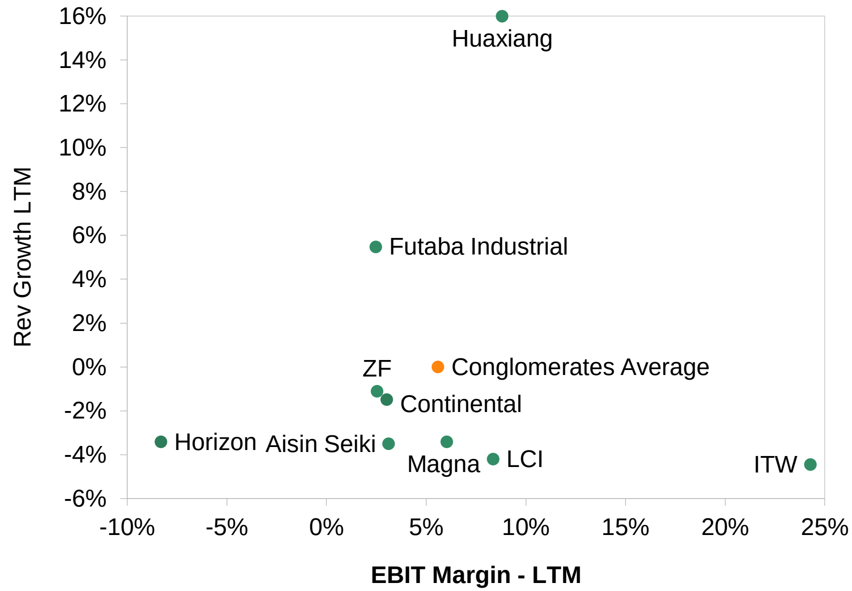
WACC = Weighted Average Cost of Capital (the required return that the company must generate in order create value, i.e. a ROIC>WACC creates shareholder value)

ZF reports semi-annual earnings, financial data based on twelve month prior to June of 2019

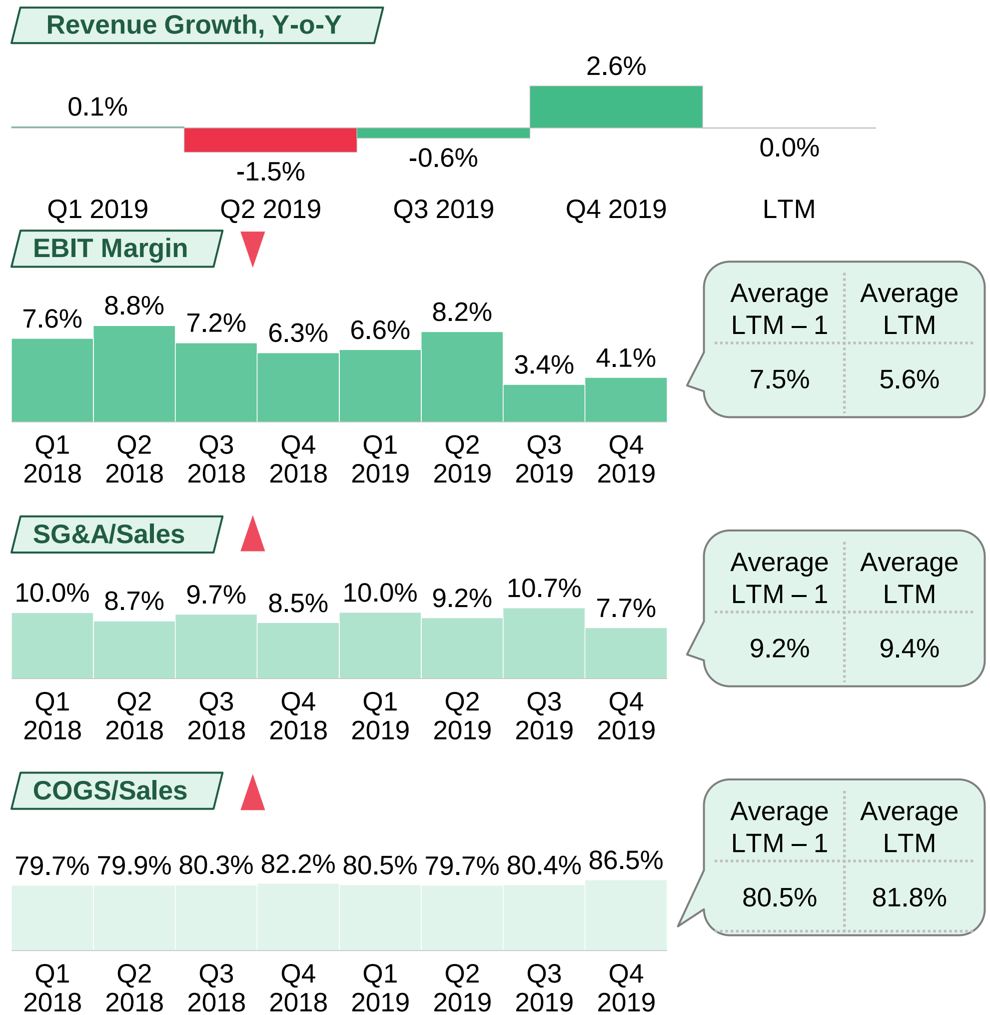
Source: Capital IQ, Annual reports, Applied Value Analysis. WACC: Damodaran Online.

Conglomerates' revenue growth stayed flat Y-o-Y, as it was the only segment to show growth in Q4 2019.

Conglomerate's EBIT Margin x Revenue Growth, year-over-year



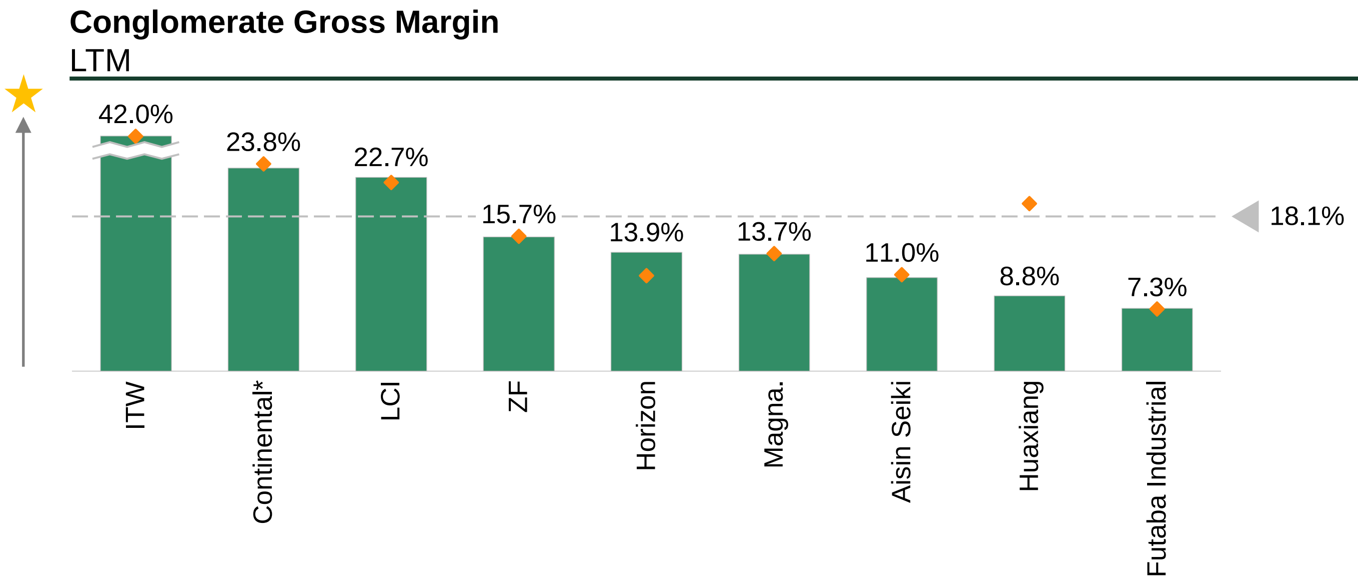
Conglomerate's Quarterly Development

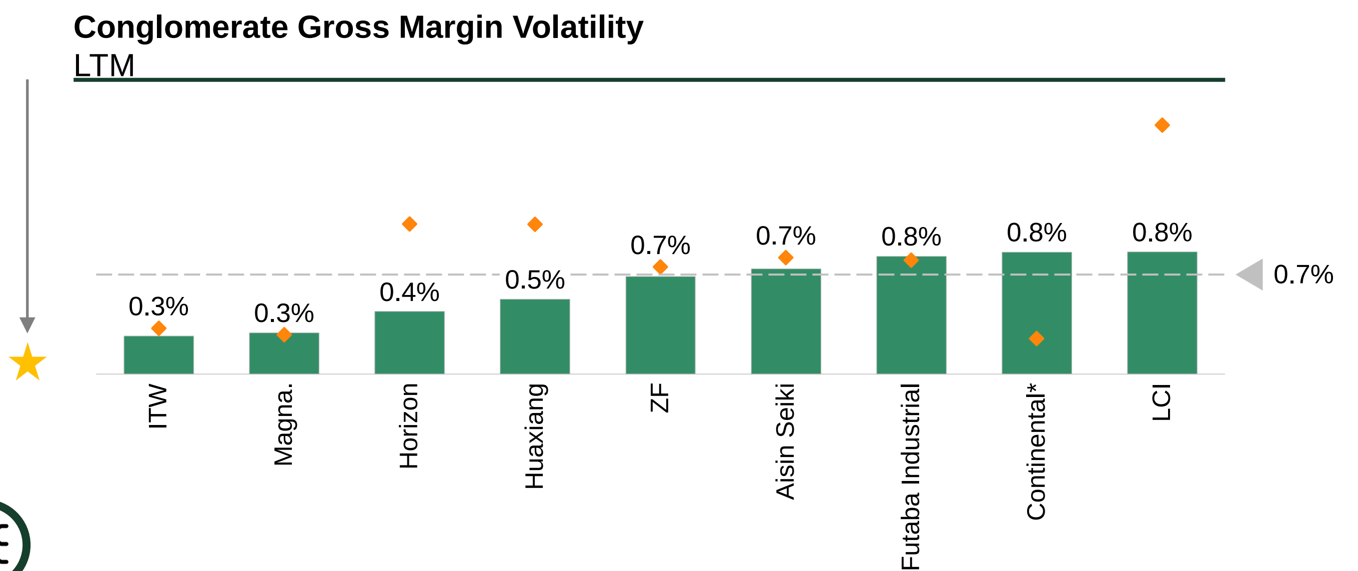


- The conglomerates segment is the only segment with an overall positive revenue growth in FY 2019 at 1.2%.
- Q3 and Q4 EBIT margin are drastically influenced by Continental due to its negative 20% EBIT margin in Q3 and uniquely high EBIT of 12% in Q4.
- Huaxiang reported 16% revenue increase largely due to its aggressive strategy of market expansion in China, capturing additional market share in the slowly declining market environment.
- Futaba Industrials also recorded positive yearly revenue growth largely due to very strong Q1 growth of ~15%.

ZF reports semi-annual earnings, financial data based on twelve month prior to June of 2019

Both gross and EBIT margins dropped for the conglomerates segment affected by unfavorable market conditions.





- Ningbo Huaxiang saw significant change in Gross Margin due to its changes in reporting format, no major material change occurred.
- Continental margins declined significantly in FY 2019 largely due to the -20% EBIT margin occurred in Q3. Management expect overall margin to further decline in 2020 due to weakening global economic environment and the severe impact of the coronavirus on its various business segments.
- Magna saw both earnings and margins decline in FY 2019 due to light vehicle production drops and unfavorable currency translations. The Body Exteriors & Structural unit is impacted the most with EBIT decline of more than 20% compared to 2018.

Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

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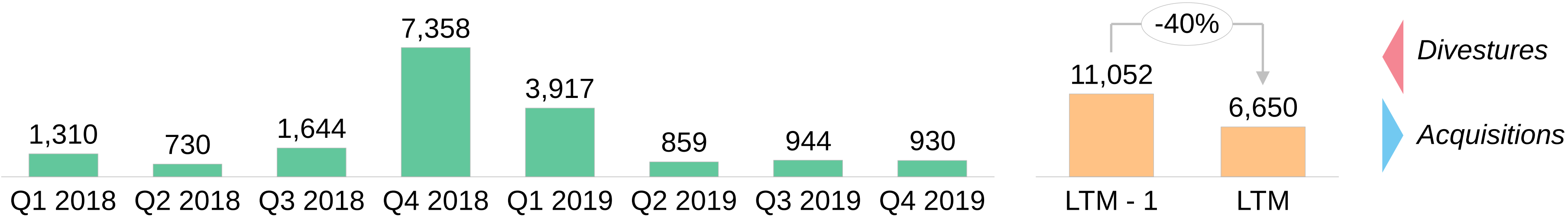
In Jan 2020, BorgWarner announced that it had entered into a definitive agreement to acquire Delphi in bid to strengthen product offerings.

Top 5 Most Recent M&A Activity

Company	Target	Close Date	Value, USD	Target Description
BorgWarner	DELPHI	Q1 2020	3.3B	*BorgWarner will acquire Delphi for 3.3 billion to expand product offering in clean energy engines.*
TOWER INTERNATIONAL	AGG AUTOKINITON GLOBAL GROUP	09/30/2019	900M	*Autokiniton Global Group, pursues investments in the global automotive supply industry and acquired Tower International.*
AAM	GAMUT CAPITAL	09/18/2019	245M	*American Axle sold its Castings business unit to a private equity firm that is based in New York City, Gamut Capital.*
HORIZON GLOBAL	PEP	07/16/2019	230M	*Horizon sold its Asia-Pacific Business segment to pacific equity partners, a firm focused on LBOs and growth capital.*
MERITOR	AXLETECH	07/29/2019	175M	*AxleTech is a leading manufacturer and supplier of drivetrain systems for on and off highway heavy-duty vehicles.*

Total M&A transaction amount previous 2 years, MUSD*



*Note – Total amount only includes the 86 firms that we have analyzed in the report

In January of 2020, BorgWarner announced the acquisition of Delphi for USD 3.3 billion to improve operational efficiency and enhance product lines.

Acquirer Information

BorgWarner

- BorgWarner is a leading automotive powertrain supplier with focus on transmissions and propulsion products for commercial automotive manufacturers
- Product line includes various transmission, clutch, turbochargers, engines, and drive components
- BorgWarner has an annual revenue of ~USD 10 billion and owns the majority of relevant market share in North American markets
- BorgWarner has strong strategic relationship with Ford, FCA, and GM in the North American markets

Deal Related Information

Horizontal Acquisition – All Stock
Goal of increase operational efficiency and enhance electrification related product lines

Total Deal Valuation: **$3.3 Billion**

Estimated Cost-Synergies **$125 million**

Share Price Before **$11.6**

Est. Purchase Price **~$14**

5-year EBITDA multiple **6.0x**

Acquisition EBITDA **4.9x**

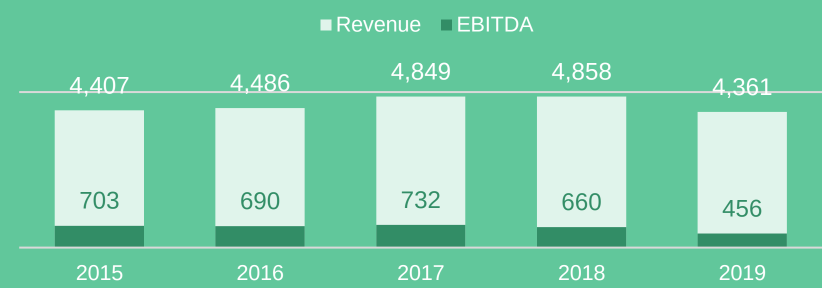
Premium Paid **~20%**

Industry Average **30%-45%**

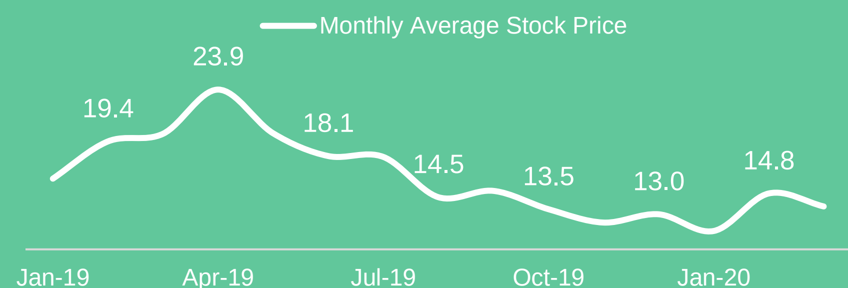
Target Information

Delphi Technologies

- Delphi Technologies is the powertrain unit of the former Delphi Automotive that was spun-off in 2017. The company is headquartered in London and provide mainly combustion product



- Delphi Technologies generated $4.4 billion of revenue in 2019 with declining revenue trend



- Delphi Technologies stock price declined by more than 40% in 2019 due to declining EBITDA margins
- Prior to its acquisition announcements, the company was valued at ~4.5x EBITDA

In September of 2019, AGG acquired competitor Tower International for $900 million in a horizontal merger.

Acquirer Information

Autokinition Group

- Autokinition Group is a leading North American Supplier of metal formed components and complex assemblies to the auto industry
- Manufacturers body structurer, interiors, closures, and chassis components
- Wholly owned by KSP Capital Partners which is a family owned private equity fund with portfolio companies aggregate revenue totaling $6.8 billion
- AGG has long-standing relationships with automotive manufacturer including GM, Ford, Nissan, Honda, Tesla, and BMW

Deal Related Information

Horizontal Acquisition
Goal of increase market size, efficiency, and competitiveness

Total Deal Valuation: **$900 million**

Good Will Created **$259 million**

Share Price Before **$19**

Acquisition Price **$31**

5-year EBITDA multiple **4.28x**

Acquisition EBITDA **7.56x**

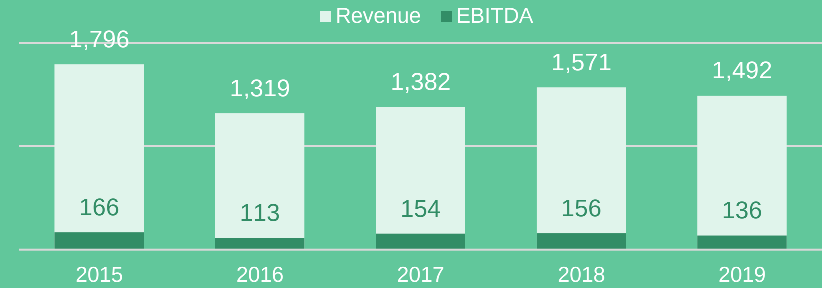
Premium Paid **~70%**

Industry Average **30%-45%**

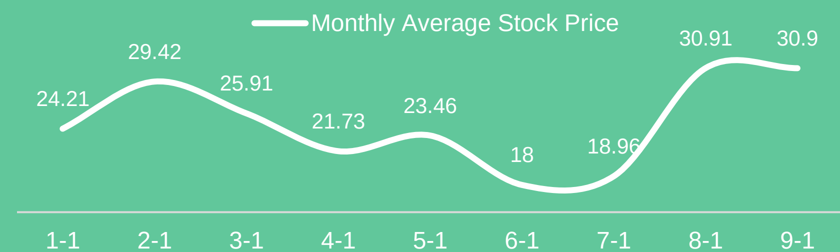
Target Information

Tower International

- Tower International is a leading global automotive structural metal components manufacturer with strong presence in the United States, Mexico, and Brazil



- Tower International recorded $1.5 billion in revenue in 2019 with EBITDA of $136 million, a margin of 9.1%



- Prior to acquisition, Towers International stock price declined by more than 40% in 2019 due to the decline in automotive industry
- Prior to its acquisition announcements, the company was valued at ~4x EBITDA

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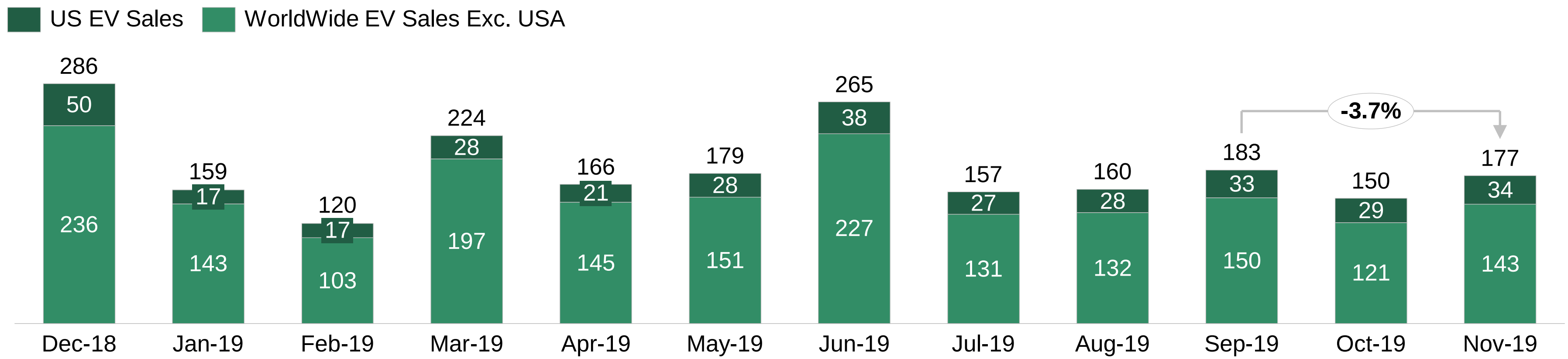
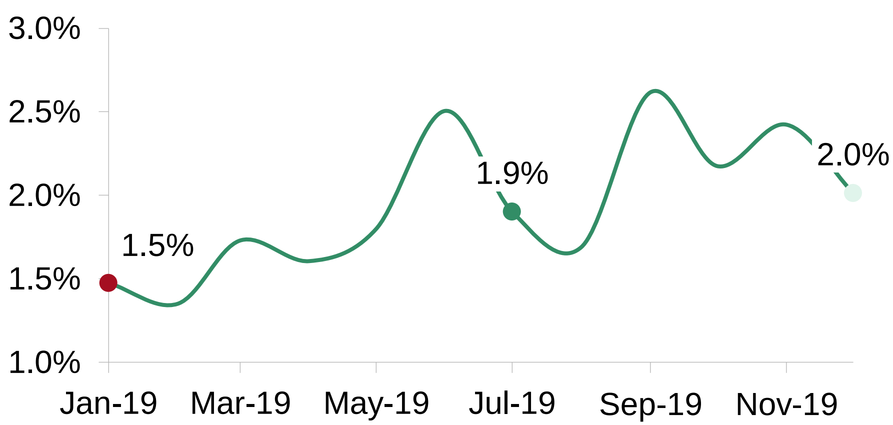
Worldwide EV sales cooled off in 2019, dropping 4% globally and 9% in the US, as H2 2019 had a slower pace of new vehicle sales.

EV Sales by month, (thousand units)



Sources: Applied Value analysis, Inside EV's Monthly .

US EV Sales as a % of US Total Light Vehicle Sales

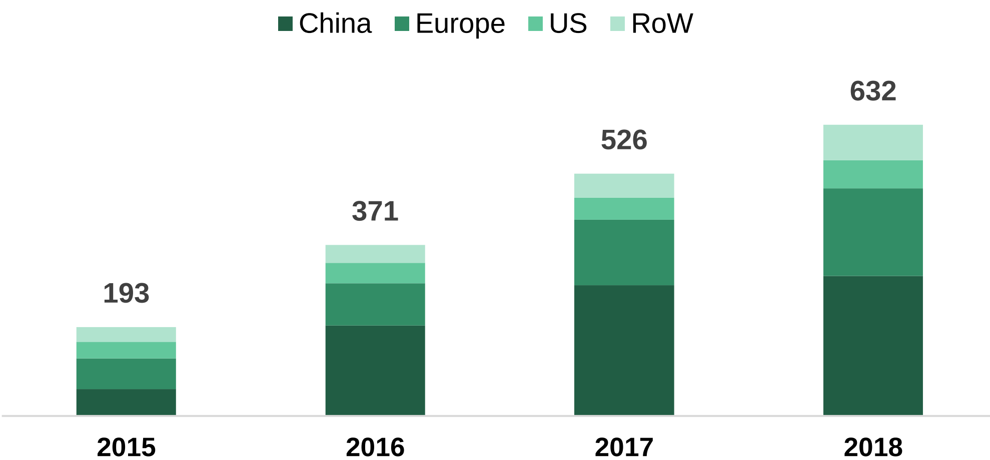


Sources: Applied Value analysis, BEA, Inside EV's Monthly .

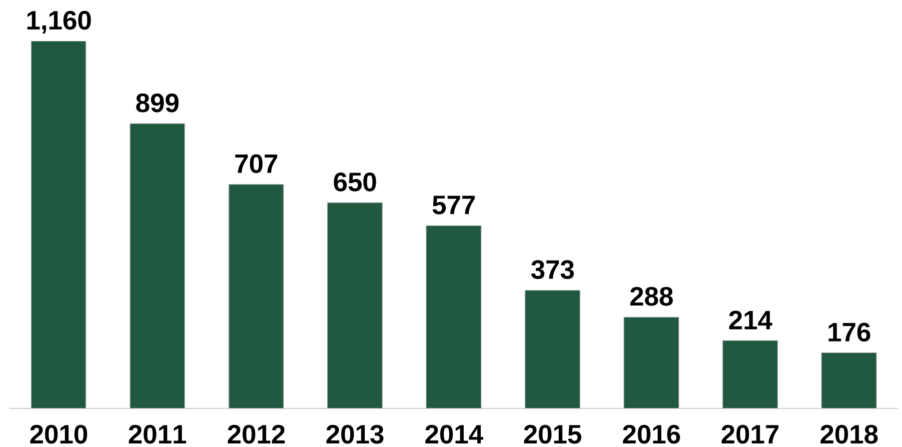
- The EV market is negatively affected by reduction in EV subsidies and cooling economy
  - Tesla led the race with about 159k sales YTD, consolidating its current position as world leader in the segment
- Worldwide and USA EV sales have decreased since June 2019, albeit they stayed steady in H2 2019
- Total EV sales in 2019, however, finished the year with slightly low numbers than recorded in 2018, finishing 9% lower in the US and 3% lower globally

Despite short-term elimination of tax credits and incentives, electric vehicles are becoming cheaper and more convenient to own.

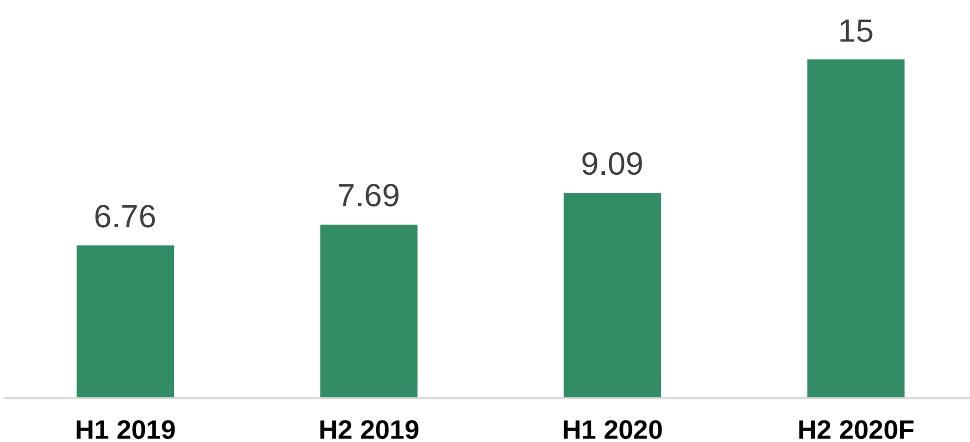
Number of Fast Charging Stations Globally
thousands



Average Cost of Electric Vehicle Battery
USD per KWH



Average Miles per Minute of Fast Charging
Miles per minute



- Since 2010, cost of lithium based electric vehicle batteries has declined by more than 80%. BEV and ICE vehicle price parity is expected to occur before 2022
- Since 2010, electric motor and BEV drive train component prices has also declined in price by ~50% due to higher volume attributed efficiencies and technological advances
- From 2015 to 2018, number of fast charging stations have tripled with the majority in Europe and China
- Advances in fast charging technology has also reduced charging time by more than 30% in the last year alone, new Tesla charging station is expected to provide 15 miles of range per minute of charging

Source: Bloomberg, Motor Trend, Inside EV, Tesla, Applied Value Analysis

As the industry pushes electrification, the efforts to shift the material composition of cars is also being accelerated.

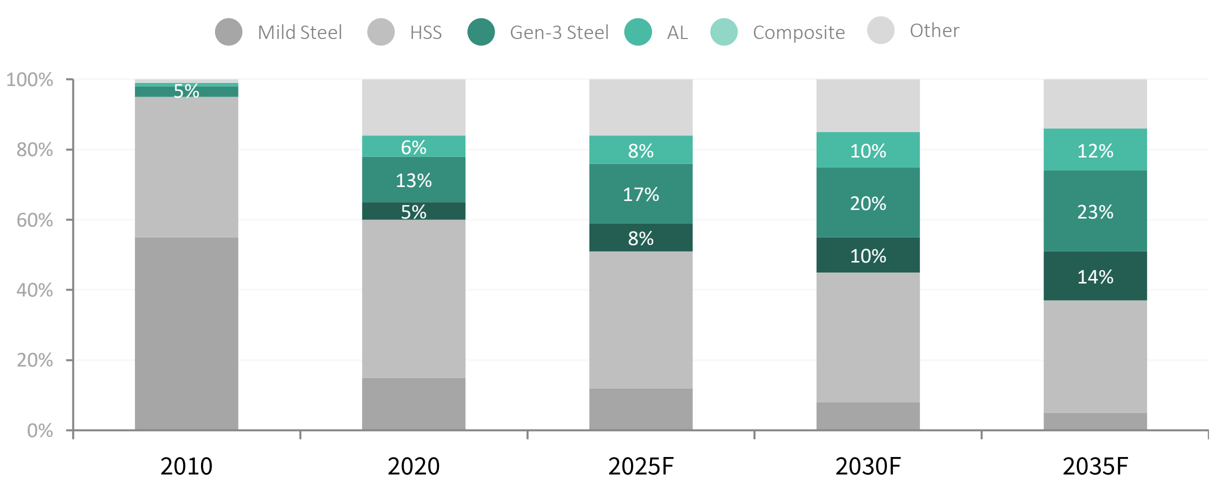
With fundamental shift in the automotive industry, OEM manufactures now require lighter parts to counterbalance the additional weight.

- BEV weighs an average of 300 lbs. more than similar ICE vehicle due to battery
- Sensor and infotainment for autonomous driving requires additional 300-400 lbs.

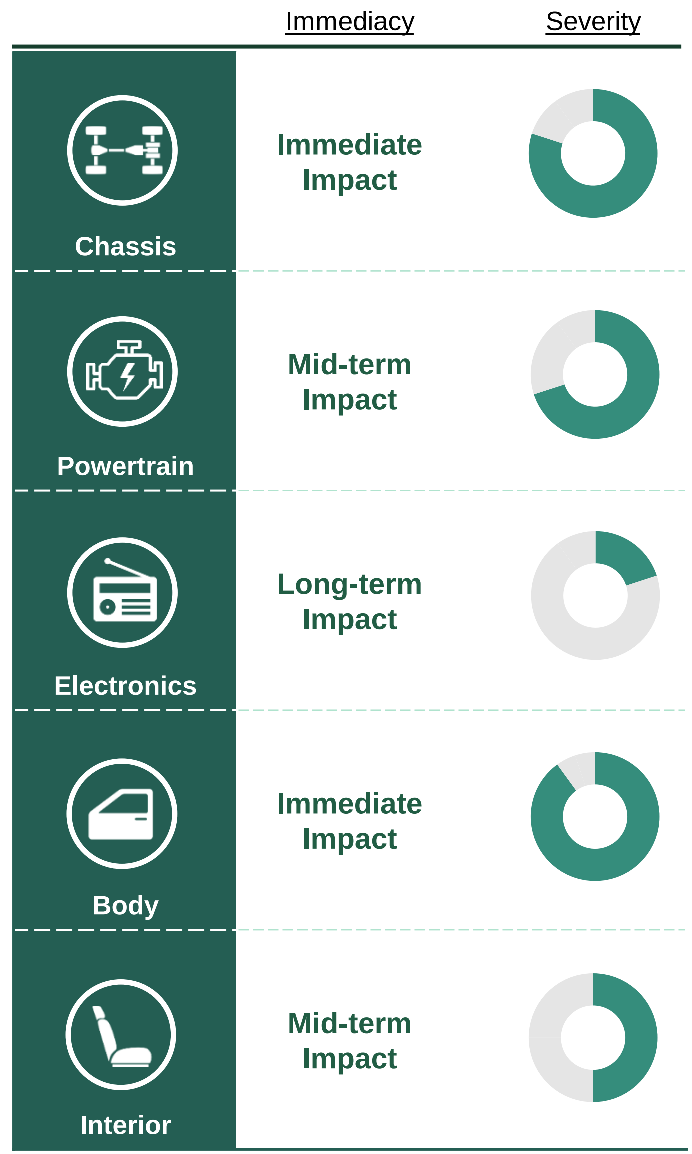
This shift is having a severe impact on various segment of tier one parts suppliers, as parts supplier must now utilize advanced materials and develop new process methods.

- Parts made of Gen3 Steel could result in **~20% weight savings** compared to regular HSS
- Parts made of Aluminum can be up to **~65% lighter** compared to mild steel or HSS
- Advanced composite material could provide for **~25% weight savings** for chassis parts and up to **35% weight savings** for body parts
- New bio-degradable resin and fibers provide for **~25% weight savings** for interior parts

Change in Material Mix of Vehicle Structure Parts
% of total units



Source: Center for Automotive Research



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Major automotive manufactures are forming complex, strategic partnerships to keep pace in the fiercely competitive autonomous driving race.

Company	Technology Platform	Key Strategic Partnerships	Developmental History
TESLA	Tesla Autopilot	NVIDIA (Ended 2016)	• Self development of camera and radar based self-driving platform since 2013, currently only provider of level four commercial product
General Motors	GM Cruise	Honda, lyft	• Acquired Cruise Automation in 2016 for $581 million • Formed $500 million partnership with Lyft by acquiring 9% stake
Ford	Argo AI	Volkswagen	• $1 billion investment in Argo AI in 2017 to develop autonomous vehicle • Formed $2.6 billion joint R&D partnership with Volkswagen
HONDA	Waymo (ended 2018) GM Cruise	GM	• Acquired 5.7% stake in Cruise for $750 million in 2018 • Joint R&D partnership with GM and pledged $2 billion over 12 years
TOYOTA	Toyota Self-Driving	NVIDIA	• Started autonomous development in 2014 with $1 billion investment • Formed strategic partnership with nVidia in 2019 for joint R&D
Volkswagen	Argo AI Aurora	Ford, Aurora, intel, Continental	• Joint R&D with Ford, pledged $1 billion in cash and $1.6 billion in assets • Strategic technology partnership with Aurora, undisclosed details
RENAULT	Waymo	Waymo	• Formed partnership with Microsoft in 2016 for joint R&D development • Entered exclusive partnership with Waymo in 2018
VOLVO	Inhouse Development with Uber	Uber	• Formed $300 million joint venture with Uber, development with Uber continues with goal of functional Level Four before 2030
HYUNDAI	Inhouse Aurora	Aurora	• $1.7 billion internal development with goal of urban Level Four by 2030 • Invested $30 million and formed partnership with Aurora in 2018
DAIMLER	Inhouse Development with BMW	BMW, BOSCH, NVIDIA	• Announced large scale agreement between Bosch and BMW Group for joint development of Level Four autonomous vehicle in 2017
BMW GROUP	Inhouse development with Daimler	DAIMLER, BOSCH, NVIDIA	• Large Scale joint-development agreement with Daimler and Bosch with goal of functional Level Four by 2025
FCA	Waymo Aurora	Waymo, Aurora	• Agreement with Waymo in 2016 for right of use of Waymo services • Partnership with Aurora for joint-development of Level Four technology

Tesla currently leads in the development of autonomous driving technology with a fully functional Level Four commercial product.

Levels of Autonomous Driving Technology

0	No automation, Driver controls all aspect of the car
1	Driver controls majority of car functions with some speed and steering interventions done automatically
2	Automatic cruise control where car could conduct steering and speed control, but driver needs to remain alert at the wheel
3	Car makes most driving functions while driver could take hands off the wheel, but could still possess some risk
4	Fully functional self-driving system in defined road conditions (for example, highway only, clear weather only, etc.), a car which the driver could sleep in
5	Fully functional self-driving system in all road and driving conditions, a car without steering wheel

Major Holistic AV Solutions Provider and Current Development Status

Tesla

Development **Since 2013**

Valuation at **$134 billion** (whole firm)

Camera, UV Sensor, and **Radar based**

Currently **functional Level Four** with over 1 billion miles driven

Goal of **functional Level Five by 2021**

Waymo (Google)

Development **Since 2009**

Valuation at **$105 billion**

Camera and **Lidar based** technology

Level Four in Testing with 20 million miles driven in selected cities

Offering **urban solutions by 2025**

Cruise (GM)

Development **Since 2013**

Valuation at **$19 billion**

Camera and **Lidar based** technology

Level Four in Testing with less than 1 million miles driven in selected cities

Goal of **Level Four solution before 2025**

Argo AI (Ford)

Development **Since 2016**

Valuation at **$7 billion**

Camera and **Lidar based** technology

Level Four in Testing undisclosed miles driven

Goal of Level Four solution by 2020 but delayed indefinitely

Aurora Tech

Development **Since 2016**

Valuation at **>$3 billion**

Camera and **Lidar based** technology

Level Four in Testing with less than 1 million miles, focus on simulated testing

Goal of **urban capable Level Four solution by 2030**

Apollo (Baidu)

Development **Since 2017**

Valuation at **>$1 billion** (internal)

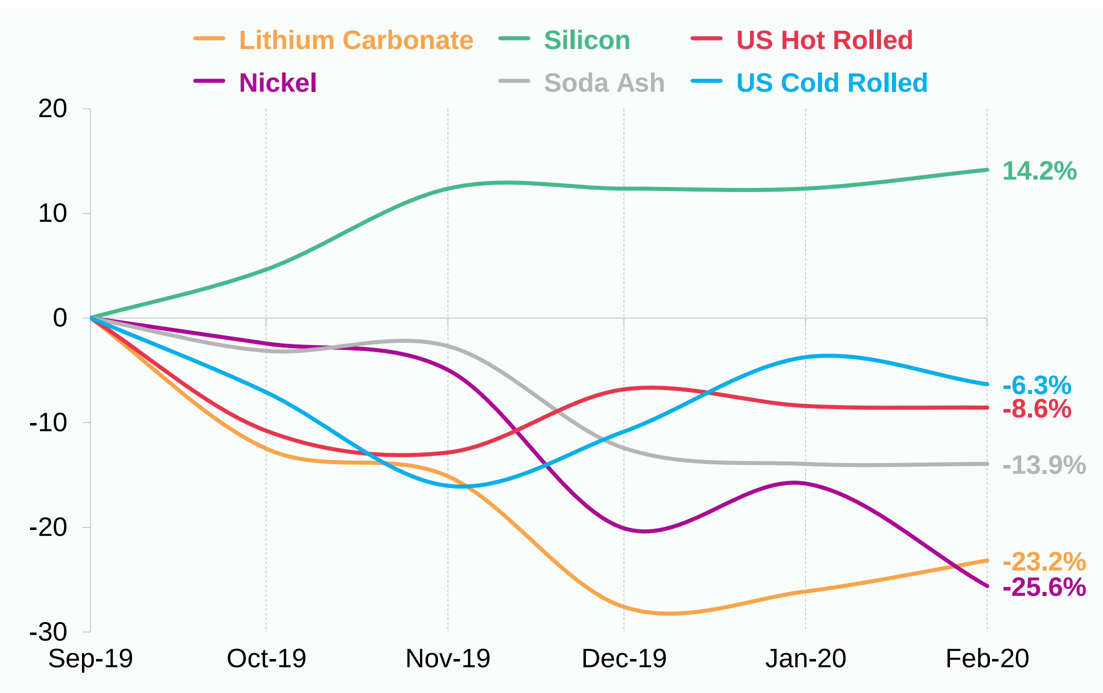
Camera and **Lidar based** technology

Level Four in Testing with 1.8 million miles across 23 cities

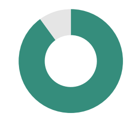
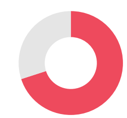
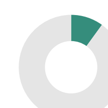
Goal of **Fully operational Level Four** vehicle in China by 2030

In the past six month, battery related commodities saw more than 20% price decline while silicon price has increased by nearly 15%.

Top Five Commodities with Largest Price Movement in Last Six Months
Price Movement Index from September 2019



- In the past six months, nickel and silicon price declined drastically largely due to decline in EV sales as well as an increase in global supply as new mine became operational.
- Silicon price increase significantly due to higher than expected demand by large chip manufacturers such as nVidia and AMD
- US Steel price declined slightly due to halting confidence in the overall economy and increasing automation in US steel mills that lowered cost

	Impact Commodities	Impact Severity
Chassis	• Hot Rolled Steel • Cold Rolled Steel	
Powertrain (non EV)	• Hot Rolled Steel • Cold Rolled Steel	
Powertrain (EV)	• Lithium Carbonate • Nickel • Hot Rolled Steel • Cold Rolled Steel	
Electronics	• Silicon • Nickel	
Body	• Soda Ash • Hot Rolled Steel • Cold Rolled Steel	
Interior	• Hot Rolled Steel • Cold Rolled Steel	

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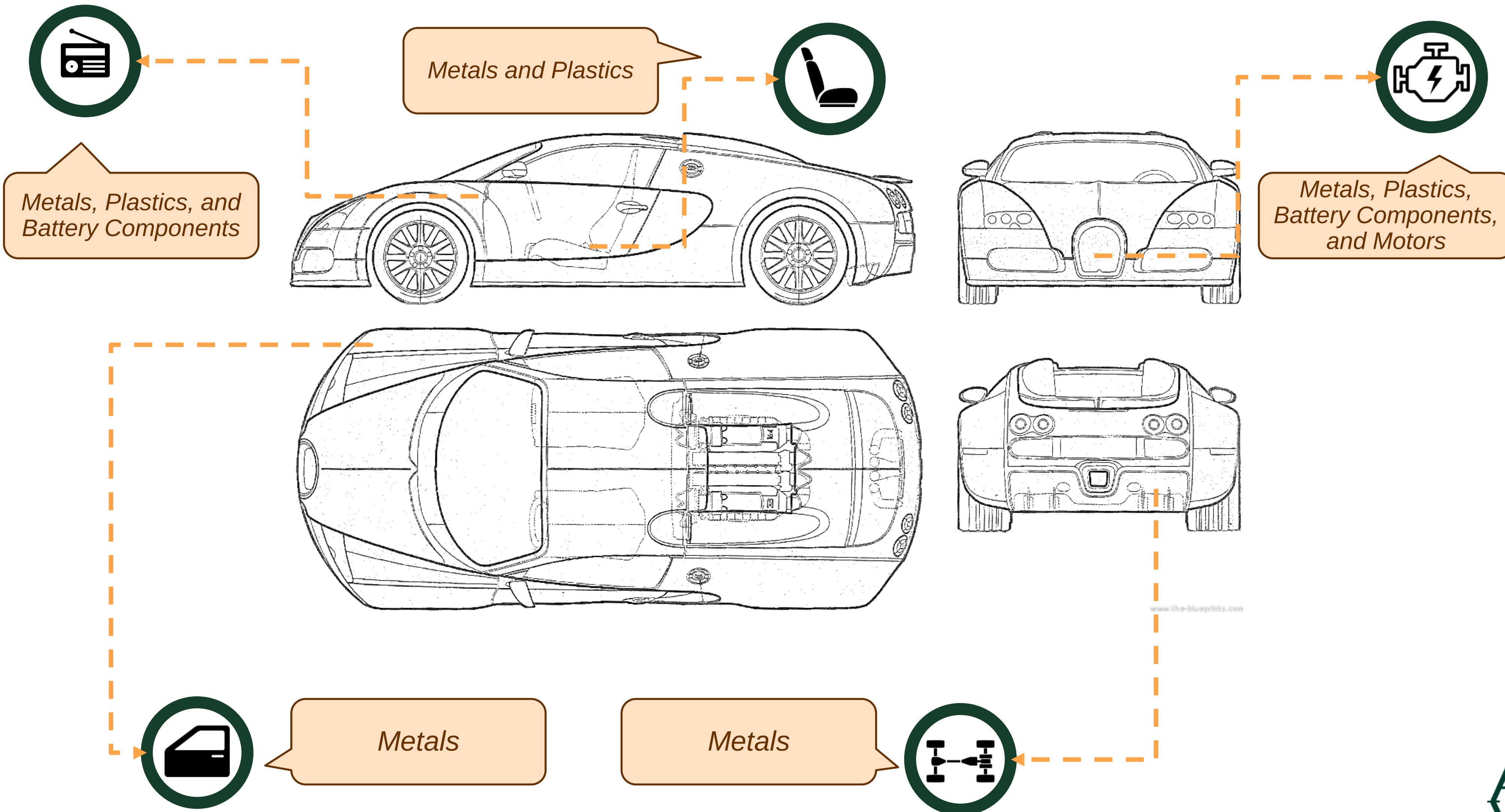
Applied Value has highlighted the main raw materials across for Auto Tier 1s.



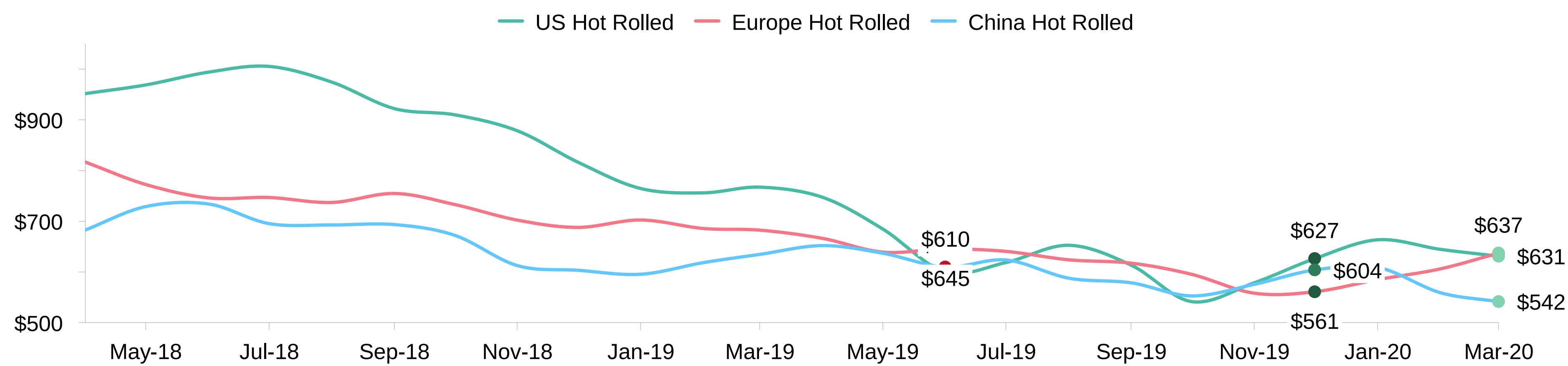
Market Trends Summary.

Key Takeaways

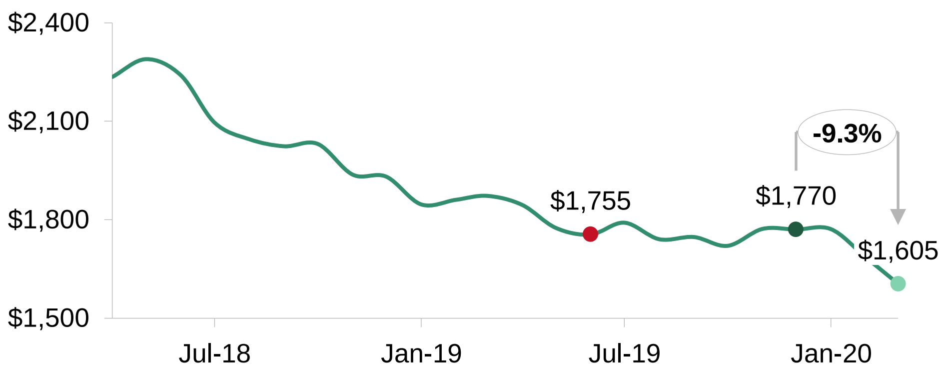
Metals	• In the last quarter, global steel prices dropped in US and in China, while Aluminium and Zinc plummeted in Q1 2020.
Plastics	• Plastic prices have been largely stable except for ethylene, which dropped by 11% in the last quarter, while soda ash is on series low and rubber has now approached low point of Q4 2018.
Battery & Electrical	• Battery component costs have mixed movements, lithium and nickel has seen major price decline while cobalt and graphite relatively price stable.
Motors	• Copper and Silicon Steel prices were largely stable while Neodymium price has seen a 5% drop in the last quarter.
Indirect Costs	• Natural gas price has declined by nearly 21% for the United States and plunged by 40% in Europe.
Trade & Employment	• Auto Tier 1 manufacturing wages started to drop in Q4 2019, and the decline accelerated in Q1 2020, as the total number peaked in Q1 2019.

In the last quarter, global steel prices dropped in US and in China, while Aluminium and Zinc plummeted in Q1 2020.

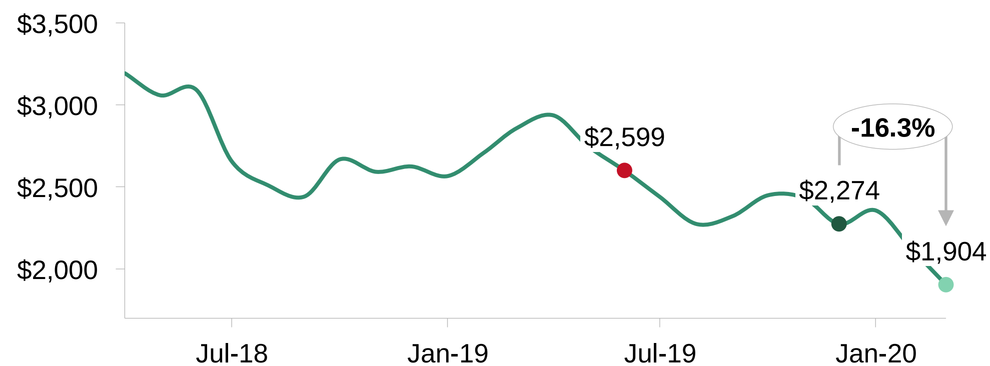
Global Steel Prices, Hot Rolled Coil
USD/MT



Aluminium LME Cash Spot
USD/MT



Zinc LME Cash Spot
USD/MT

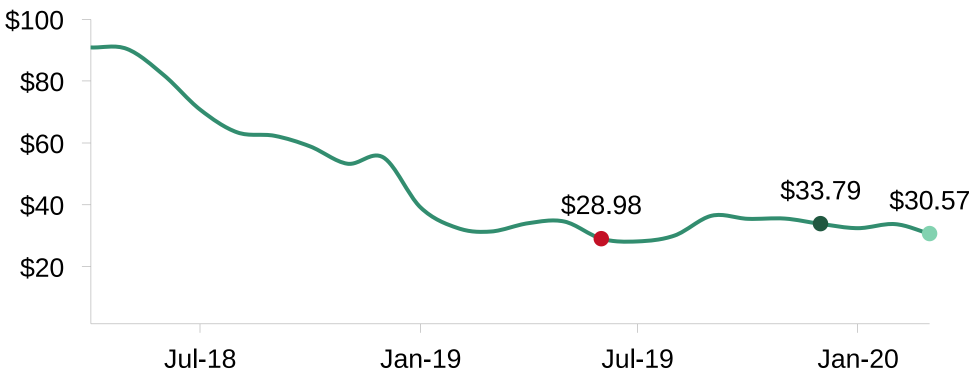


Last Twelve Month Last Six Month Most Recent

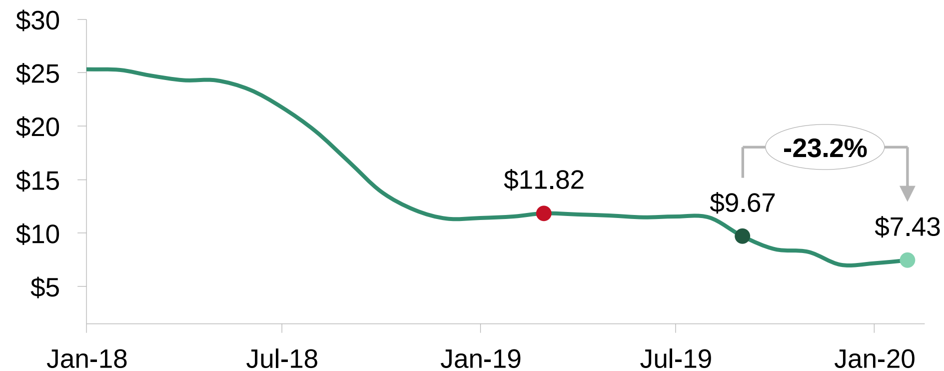
Source: AV Analysis

Battery component costs have mixed movements, lithium and nickel has seen major price decline while cobalt and graphite relatively price stable.

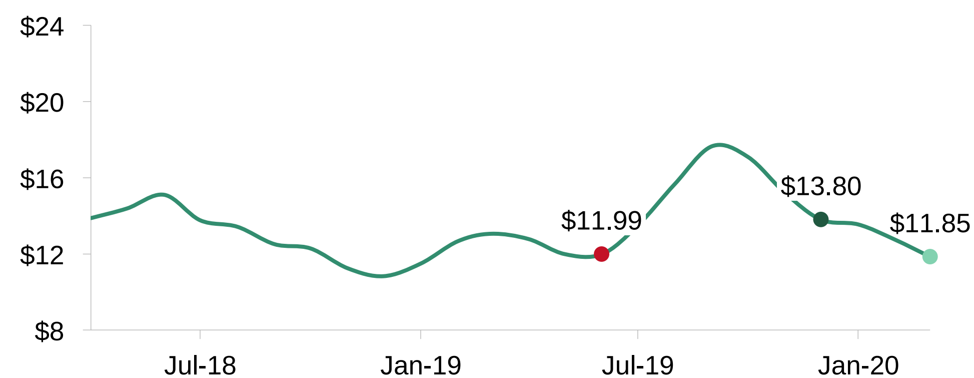
Cobalt LME Cash Spot
USD/KG



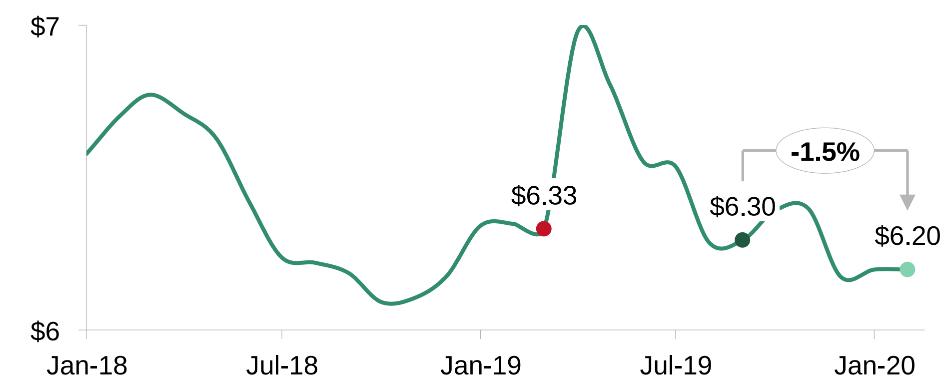
China 99.5% Lithium Carbonate Cash Spot
USD/KG



Nickel LME Cash Spot
USD/KG



Zhongrui Natural Graphite
USD/KG

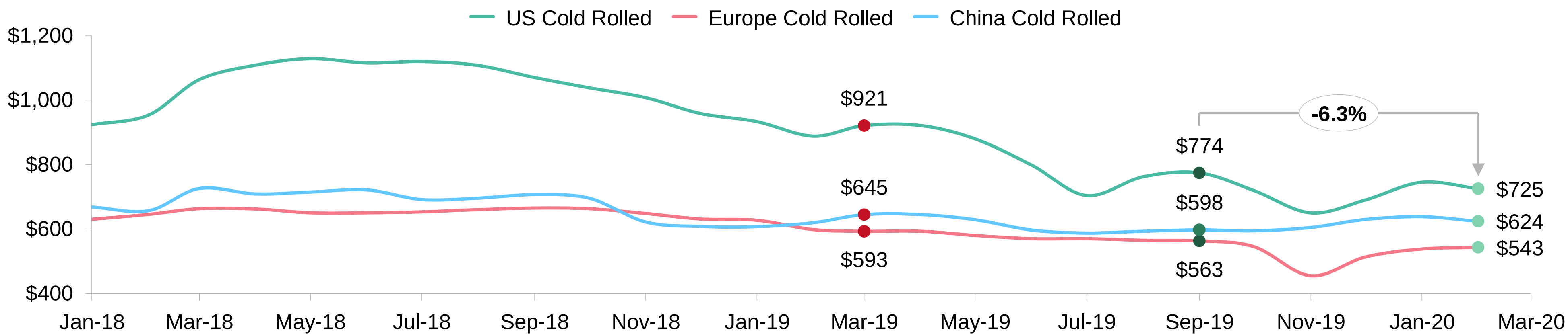


Last Twelve Month | Last Six Month | Most Recent

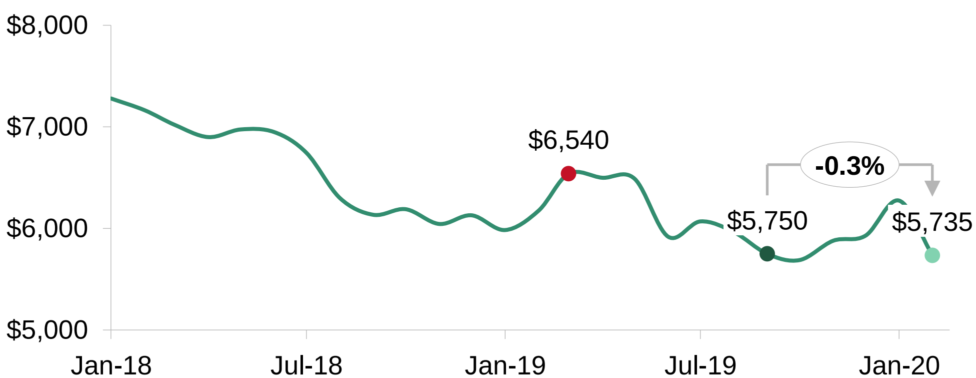
Source: AV Analysis

Copper and Silicon Steel prices were largely stable while Neodymium price has seen a 5% drop in the last quarter.

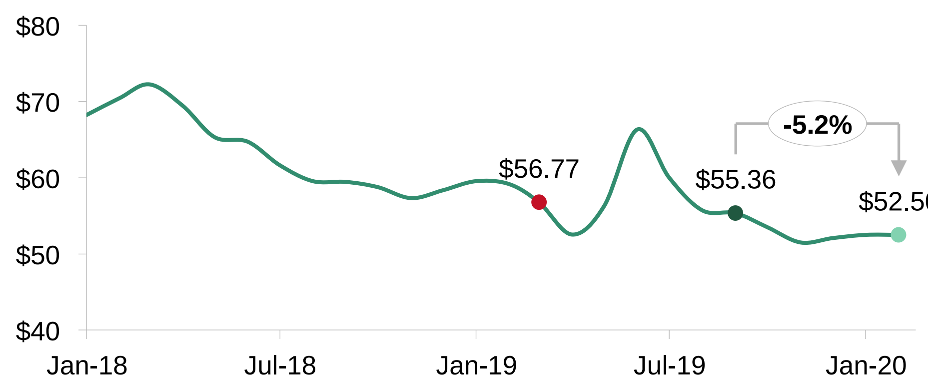
Silicon Steel – Cold Rolled
USD/MT



Copper LME Cash Spot
USD/Ton



China Natural Neodymium Price
USD/KG

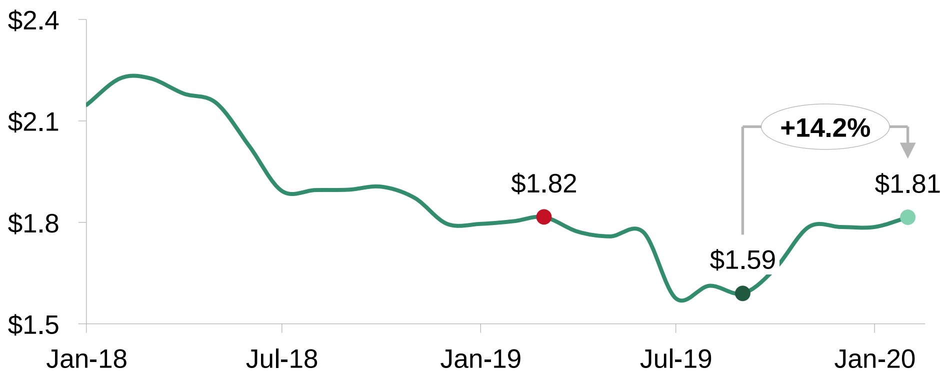


● Last Twelve Month ● Last Six Month ● Most Recent

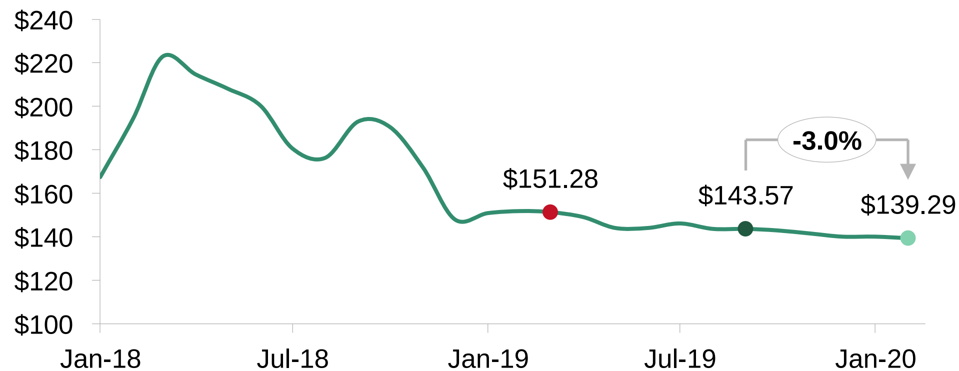
Source: AV Analysis

Silicon price has increased significantly in the last quarter while clear PET price declined by 14%.

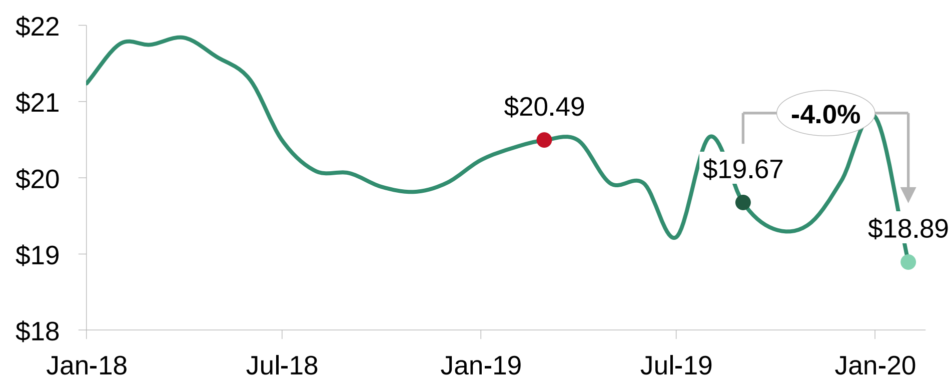
#441 Silicon Shanghai Port
USD/KG



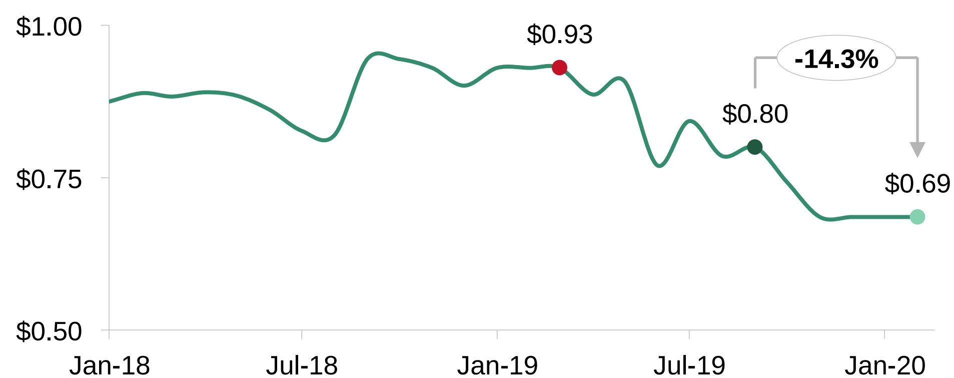
China High Grade 99.99% Gallium
USD/KG



Grade #1 Stannic Oxide
USD/KG



China PET Clear Cold Formed
USD/KG

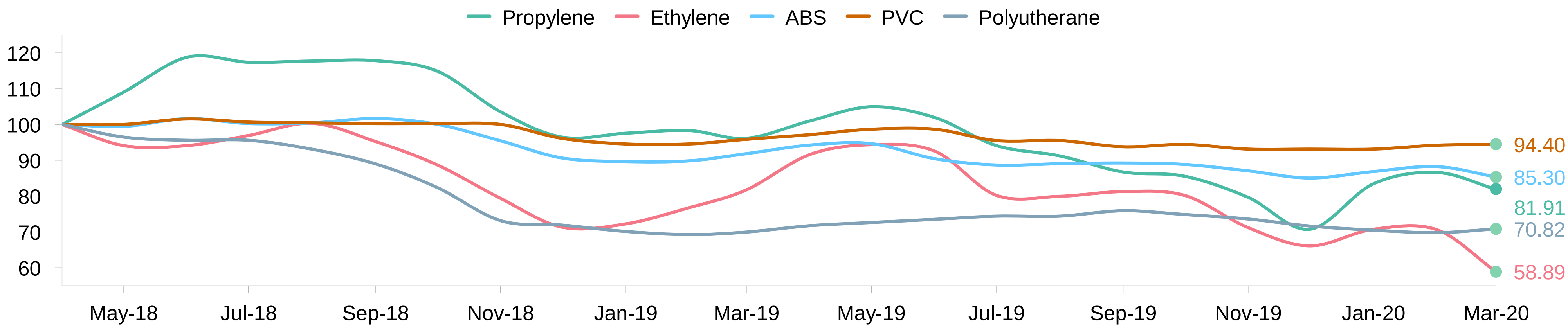


Last Twelve Month Last Six Month Most Recent

Source: AV Analysis

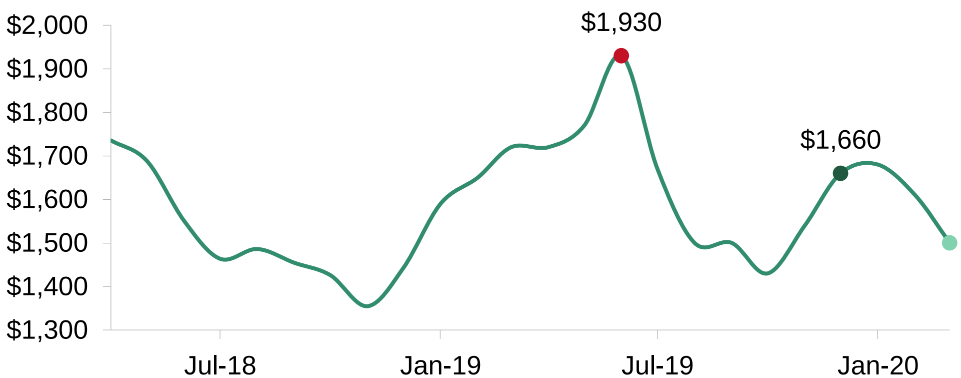
Plastic prices have been largely stable except for ethylene, which dropped by 11% in the last quarter.

Europe Plastic Price Index
Baseline March 2018

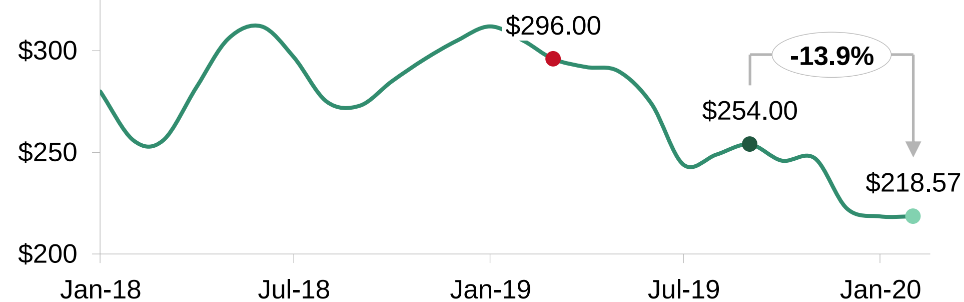


Source: PlastEurope

Rubber SICOM RSS3
USD/MT



Grade 99.20% Soda Ash Eastern China
USD/MT

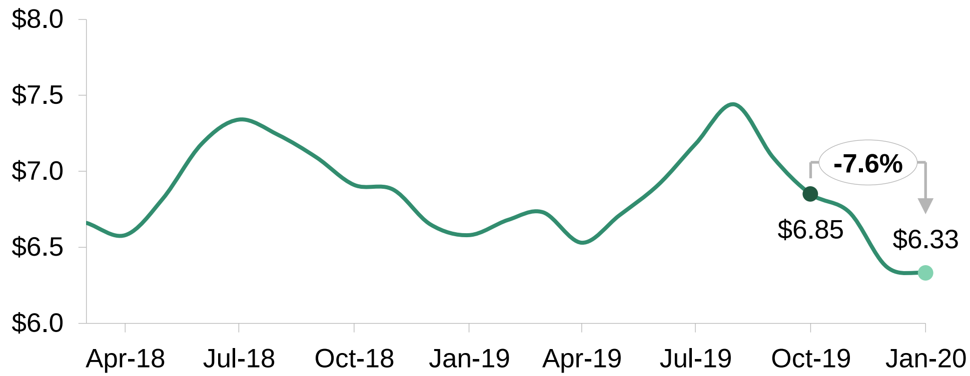


Last Twelve Month Last Six Month Most Recent

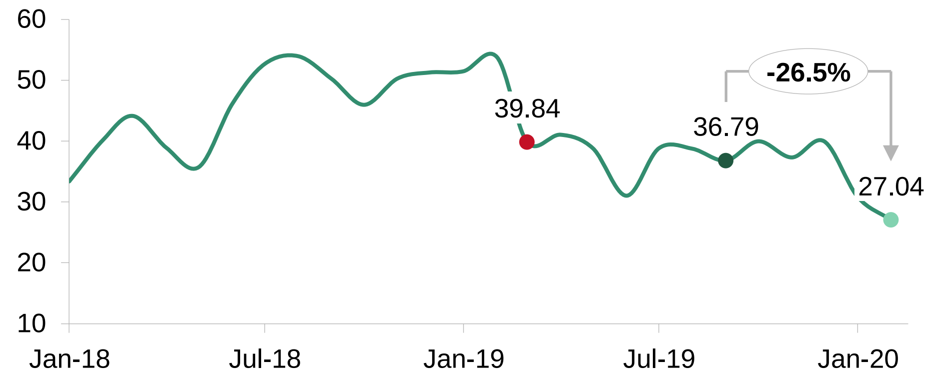
Source: AV Analysis

Natural gas price has declined by nearly 21% for the United States and plunged by 40% in Europe.

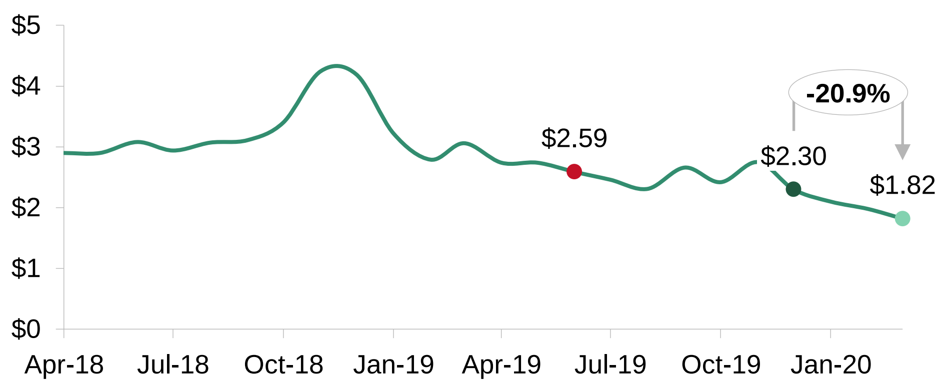
US Industrial Electricity Price
US Cents/KWH



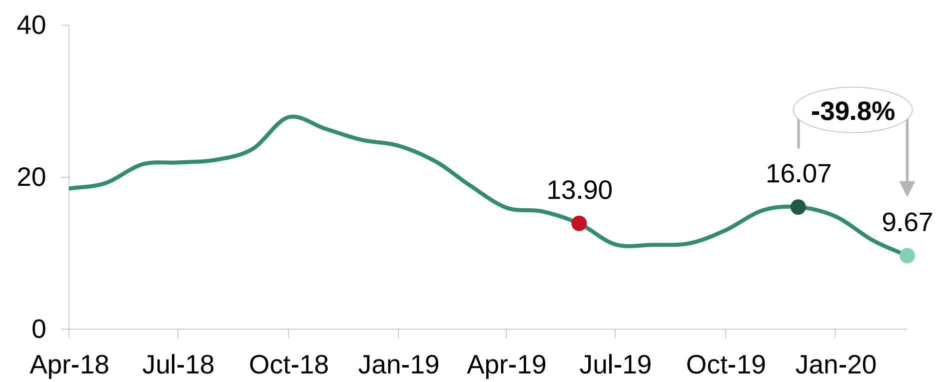
Europe Industrial Electricity Price
EUR Cents/KWH



US Natural Gas Price
USD/mmBTU



Germany Natural Gas Price
EUR/MWH

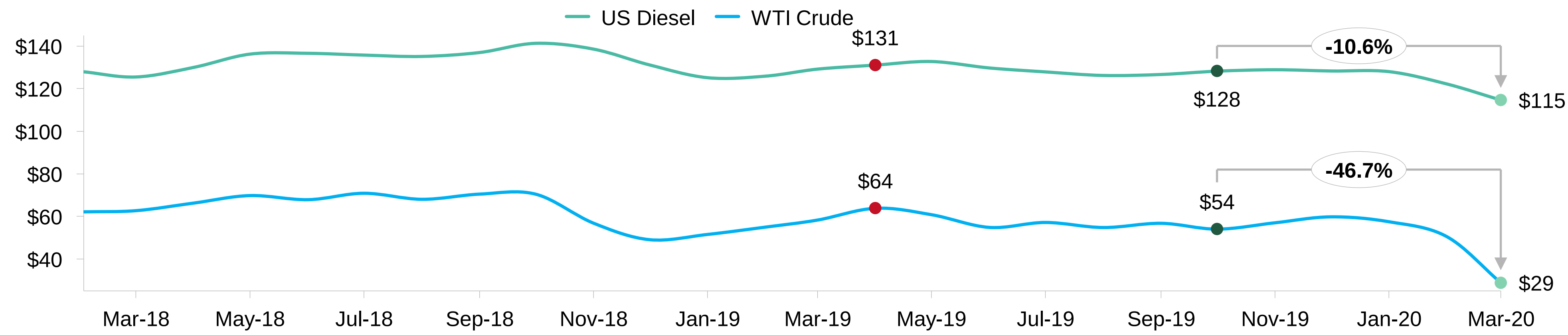


Last Twelve Month   Last Six Month   Most Recent

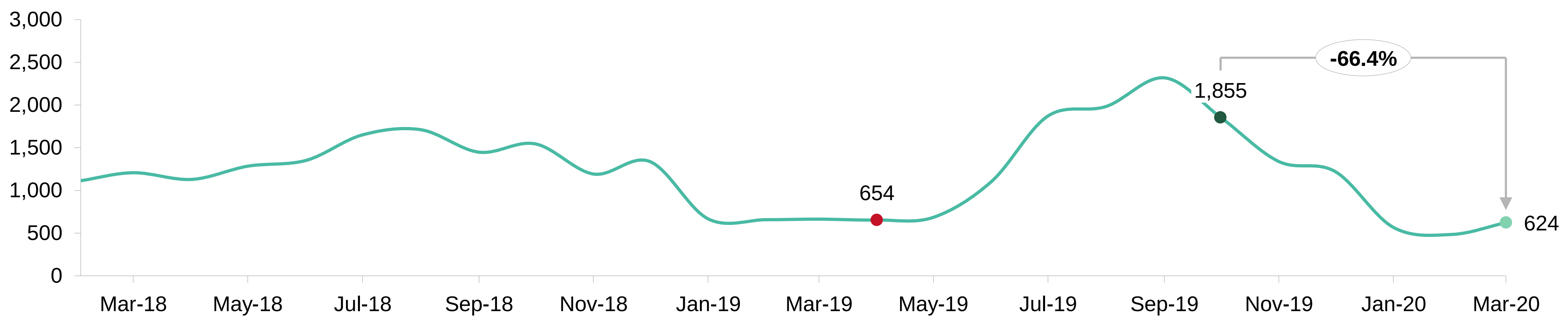
Source: AV Analysis

Oil price seen a sharp decline in the last quarter while freight and shipping cost declined drastically due to global trade conflicts.

Crude Oil and Diesel Price US
USD/Barrel



Baltic Dry Index - Shipping
Index

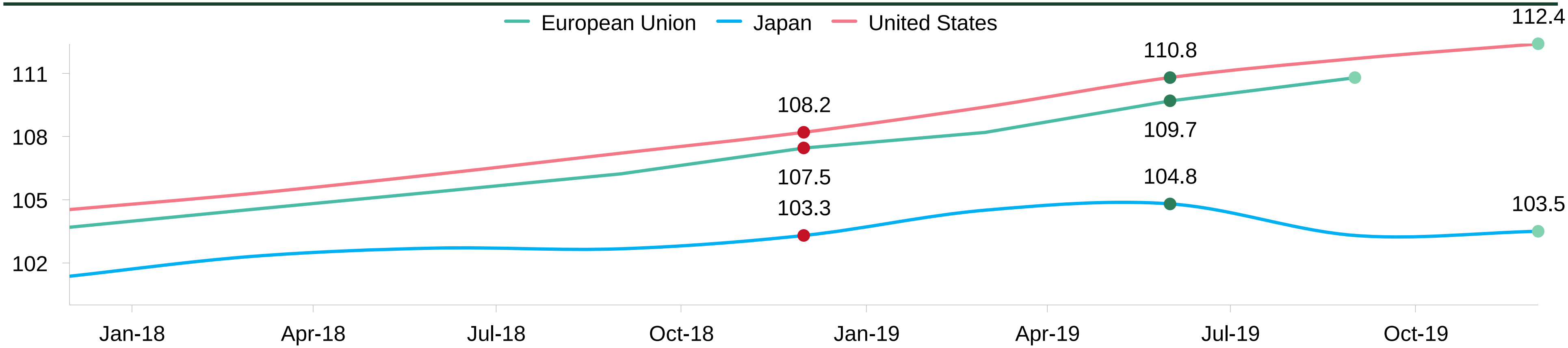


Last Twelve Month Last Six Month Most Recent

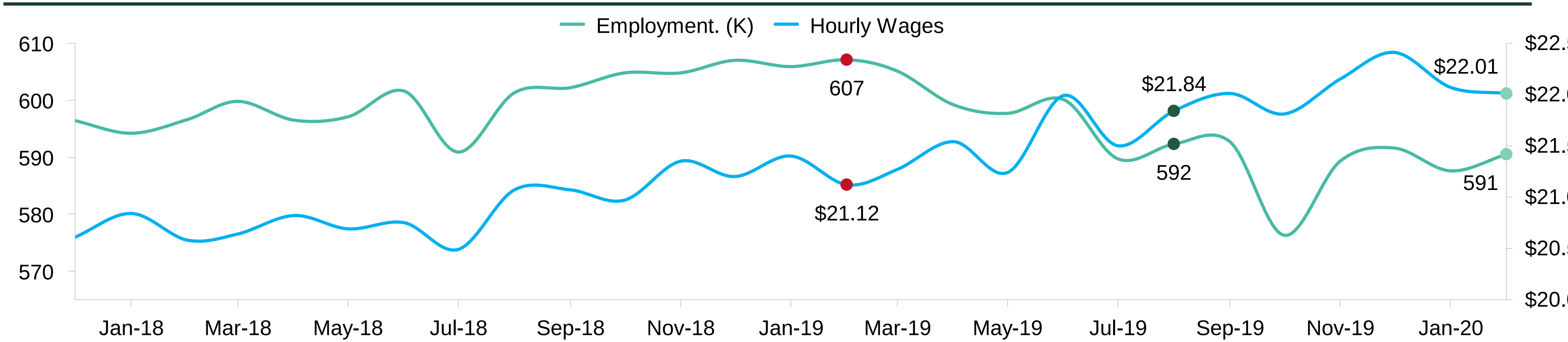
Source: AV Analysis

Auto Tier 1 manufacturing wages started to drop in Q4 2019, and the decline accelerated in Q1 2020, as the total number peaked in Q1 2019.

MEI Manufacturing Hourly Wage Index
Index



Auto Parts Tier One Manufacturing Job and Wage
Wage in USD/Hour, Job in Thousands



Last Twelve Month   Last Six Month   Most Recent

Source: AV Analysis

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› **About Applied Value**

Applied Value is a management consulting & investment firm founded on the principles of lean growth and entrepreneurship.

1997 Background as an internal consultancy and change agent within the Swedish ***Stenbeck Group…***

KORSNÄS MTG TELE2 MILLICOM THE DIGITAL LIFESTYLE

2019 …today, a hands-on consultancy supporting clients **across industries**

Industries of Expertise

- Telecom & Media
- Chemicals & Process
- Industrials & Engineering
- Consumer Goods
- Automotive

Applied Value Group

Investments

Management Consulting

Social Responsibility

Selected portfolio companies

HUMAN CARE Your Life. Your Way. · COSMOSID · rivermeadow · Bake My Day · Division 5 Inc STEEL FABRICATION · SODERFORS STEEL · flexenclosure

APPLIED VALUE

HAND IN HAND · Straight Ahead MINISTRIES OFFERING KIDS A WAY OUT · Exodus

ROI driven · *Fact-based* · *Practical over theoretical* · *Hands-On* · *Global perspectives*

Our Lean Growth framework is based on Focus, Simplicity, Speed – guiding principles to raise client performance

Lean Growth

Focus
- ✓ Define strategic focus
- ✓ Excel in key capabilities
- ✓ Use partners for non-core activities

Simplicity
- ✓ Reduce complexity
- ✓ Simplify and standardize processes, organization and supply chain

Speed
- ✓ Set targets
- ✓ Measure and improve
- ✓ Reduce Time to Market-Customer-Cash

Offerings

Go-to-Market
Segmentation, Positioning, Product/Channel Mix

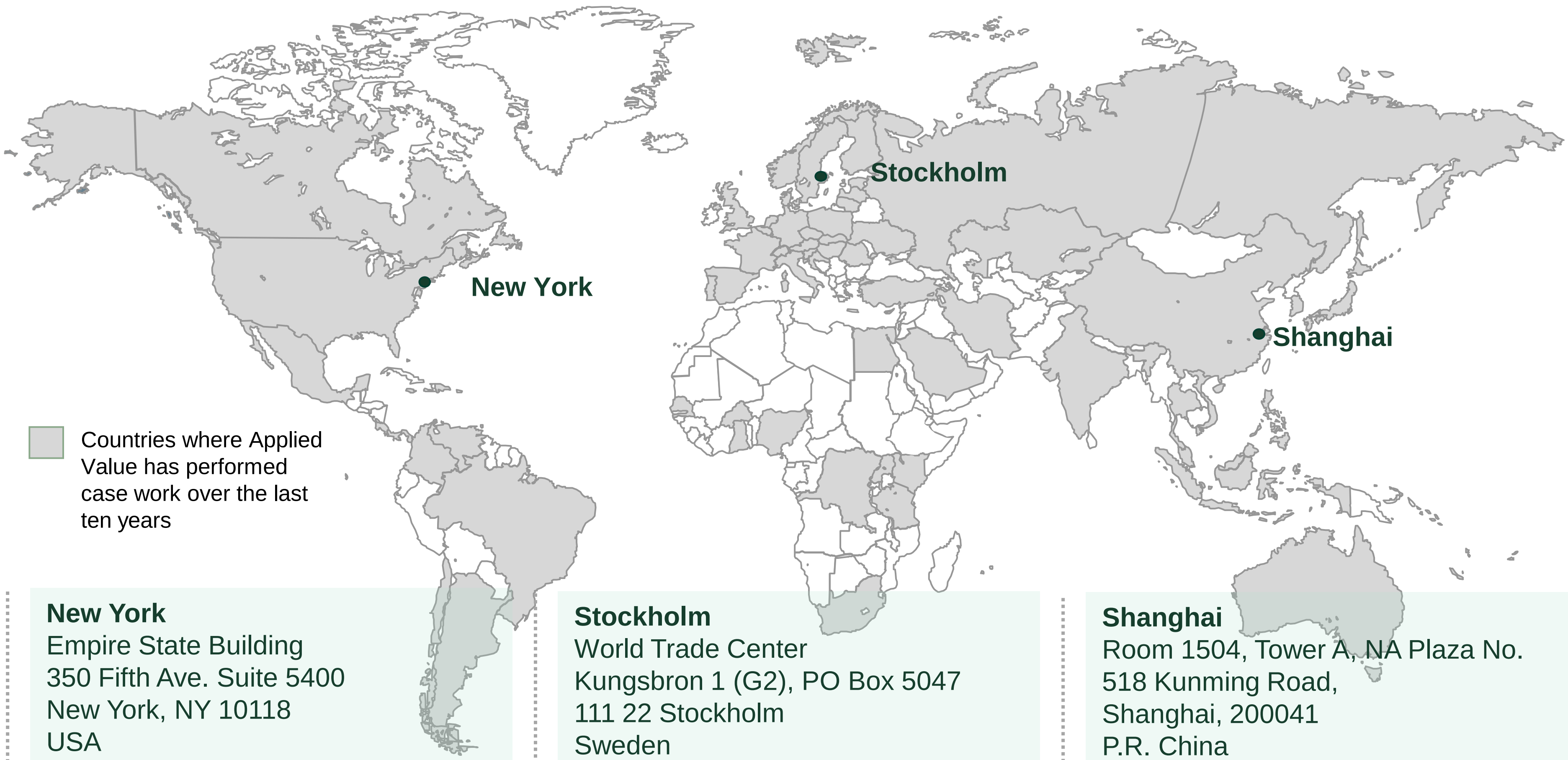
Gross Margin Improvement
Pricing, Sourcing, VA/VE, Supply Chain, Operations

OPEX Efficiency
Operational efficiency, S&M / G&A productivity, Organization

Capital Efficiency
Working Capital mgmt., Innovation/R&D performance, M&A, Fixed asset leverage

Digital Transformation and Efficiency
Strategy, Capability improvement, Execution

Applied Value challenges and supports repeat global clients across industries from three offices.



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