Automotive Tier One
Q1 2019

Applied Value Industry Reports
March 2019

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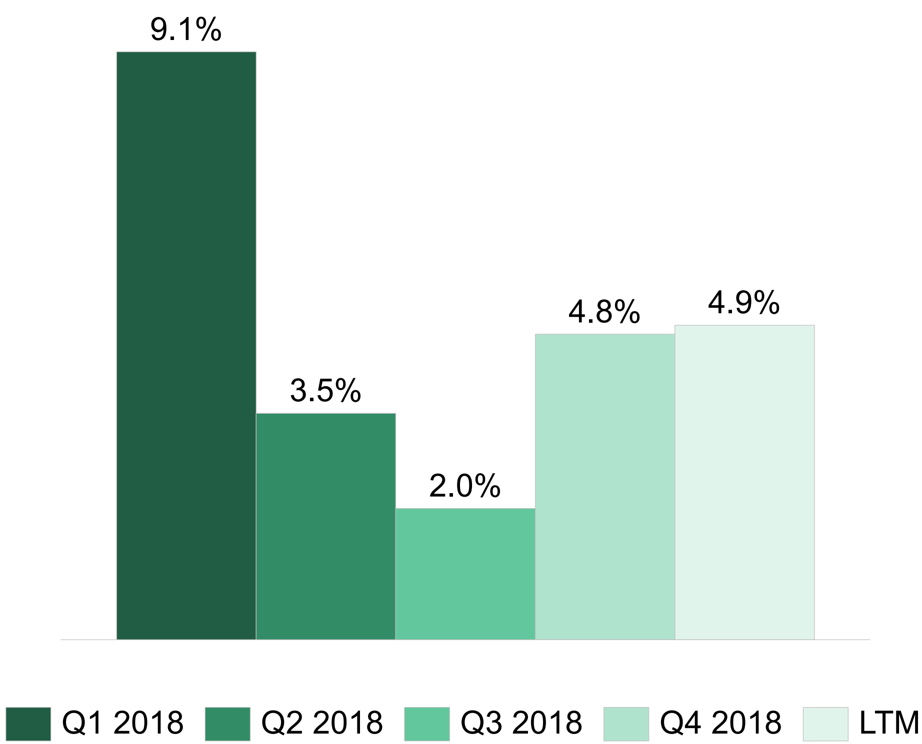
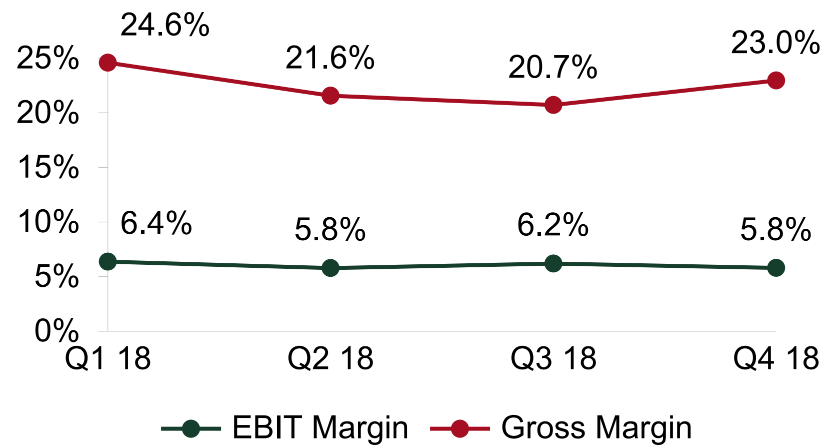
March 2019

Auto OEM's revenue development had strong momentum in 2018, growing 4.9% over the last twelve months (LTM); margins were flat.

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



Auto OEM Margins
LTM

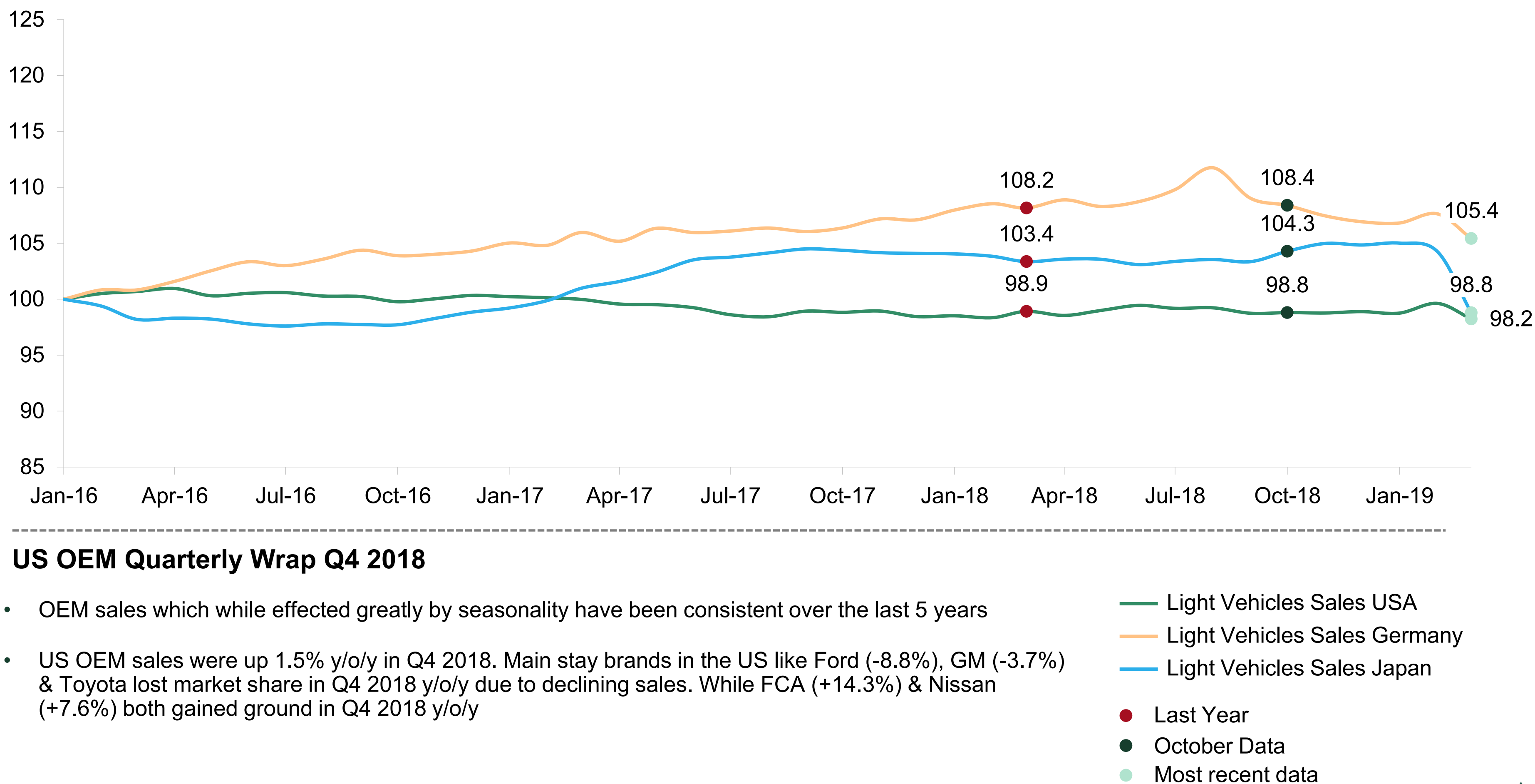


- OEMs had a strong 2018, as revenue grew at 4.9% for the whole industry.
- Gross Margins were the highest in Q1 and Q4, the same months when the industry saw the highest growth
- Though revenue and gross margin fluctuated, EBIT margin remained stable, moving at most 0.6% on a quarter over quarter comparison

Notes: Based on a sample size of 22 OEM's located throughout Asia, Europe & North America.
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

The annualized rate of car sales declined globally in Q1 2019, marking a reversal of the growth observed in 2017 and 2018.

Monthly Light Vehicle Car Sales by Country, Indexed rolling 12-month average - thousand units



US OEM Quarterly Wrap Q4 2018

- OEM sales which while effected greatly by seasonality have been consistent over the last 5 years
- US OEM sales were up 1.5% y/o/y in Q4 2018. Main stay brands in the US like Ford (-8.8%), GM (-3.7%) & Toyota lost market share in Q4 2018 y/o/y due to declining sales. While FCA (+14.3%) & Nissan (+7.6%) both gained ground in Q4 2018 y/o/y

Source: MarkLines

APPLIED VALUE

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

Chassis

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

Powertrain

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

Electronics & Infotainment/ Connectivity

Airbag/controller, antilock braking system, harnesses, heating, entertainment, control modules, regulators as well as Infotainment including entertainment, info, navigation services

Exterior/Body

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

Interior

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

Conglomerates

Suppliers a composite of the above categories with no distinct specialization

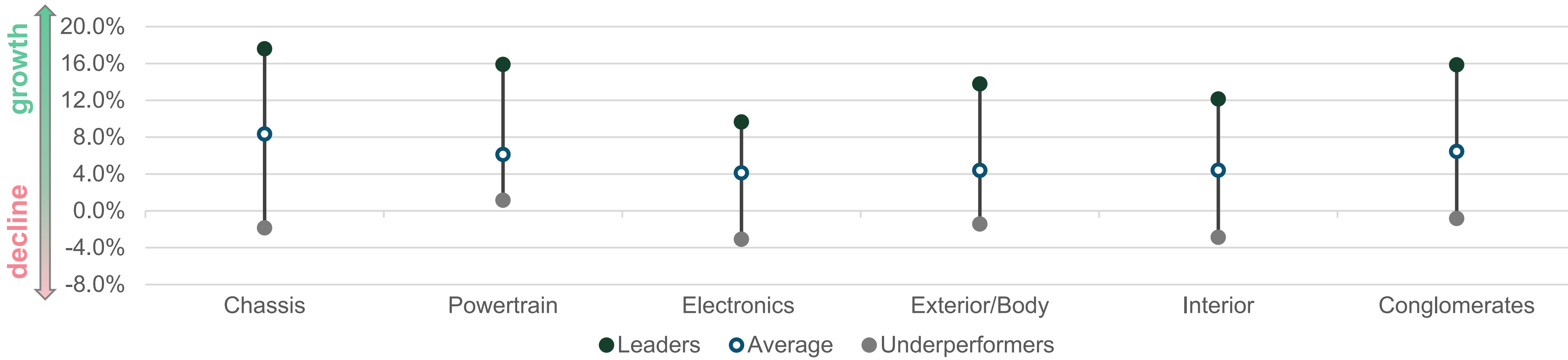
Applied Value has assessed 86 publicly traded Auto Tier 1 companies across 6 different operational segments.

Segment	Companies	Total in Analysis
Chassis	JTEKT, Gestamp, SKF, DANA, Lippert Components, 住友理工 Sumitomo Riko, Press Kogyo, F.tech inc., Meritor, Martinrea, Showa, Akebono, Tower International, Nissin, AAM, Dorman	16
Powertrain	Hitachi (Inspire the Next), Denso (Crafting the Core), BorgWarner, NSK, Rheinmetall, Delphi, Nemak, Linamar, NGK, Exedy, Allison Transmission, F.C.C., Musashi, Briggs & Stratton, Nexteer Automotive, CIE Automotive	16
Electronics	Metair Investments Limited, Visteon, Sanden, Hella, flex, Aptiv, Sumitomo, Hyundai Mobis, Omron, Pioneer, Nippon Seiki, Modine, Hi-Lex, Valeo, Gentherm, VOXX International Corporation, Stoneridge	17
Exterior/Body	Superior Industries, ITW, Koito, Futaba (Futaba Industrial Co., Ltd), Topre, Unipres, CooperStandard, Mitsuba, NBHX, Gentex, Stanley, Tupy, Shiloh	13
Interior	Faurecia, Lear Corporation, Adient, Toyota Boshoku, TS Tech, Autoneum, Minth Group, Tachi-S, Kasai, G-Tekt Corporation, Nihon Plast Co., Ltd. 日本プラスト株式会社, Grammer	12
Conglomerates	Toyoda Gosei, Kautex (A Textron Company), Mitsubishi Electric, Magna, Continental, Mando, SMP (Standard Motor Products, Inc), Aisin, Panasonic, Autoliv, Tokai Rika, Tenneco	12

Note: The following suppliers are normally included, but are not in this report because they have not yet reported Q4 results.
ZF, Polytec, Rassini, Changchun Faway, Chaowei Power, China XD Plastics, FAWER, Saf-Holland, Seojin, Seoyeon, Sungwoo, and China Shipbuilding Industry Group Power

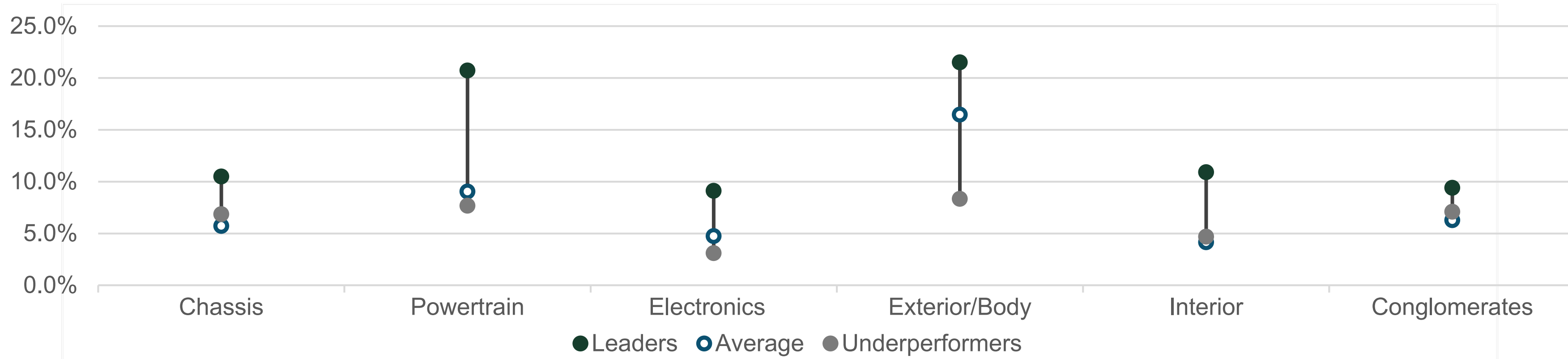
Companies that make up the Powertrain and Exterior segments had wider variability on EBIT Margin performance in LTM.

Revenue Growth by Tier One Industry Segment LTM



Source: Capital IQ, Applied Value analysis.

EBIT Margin by Tier One Industry Segment LTM



Source: Capital IQ, Applied Value analysis.

APPLIED VALUE

Applied Value has analyzed 16 companies in the Chassis segment.

Chassis

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

Executive Summary:

- Chassis EBIT margins have worsened over LTM, as the strong demand from OEMs was not enough to offset rising material costs
- LTM gross margin in the Chassis segment was fairly stable, with volatility only at 1%, despite an increase in COGS of 0.2ppt in the same period

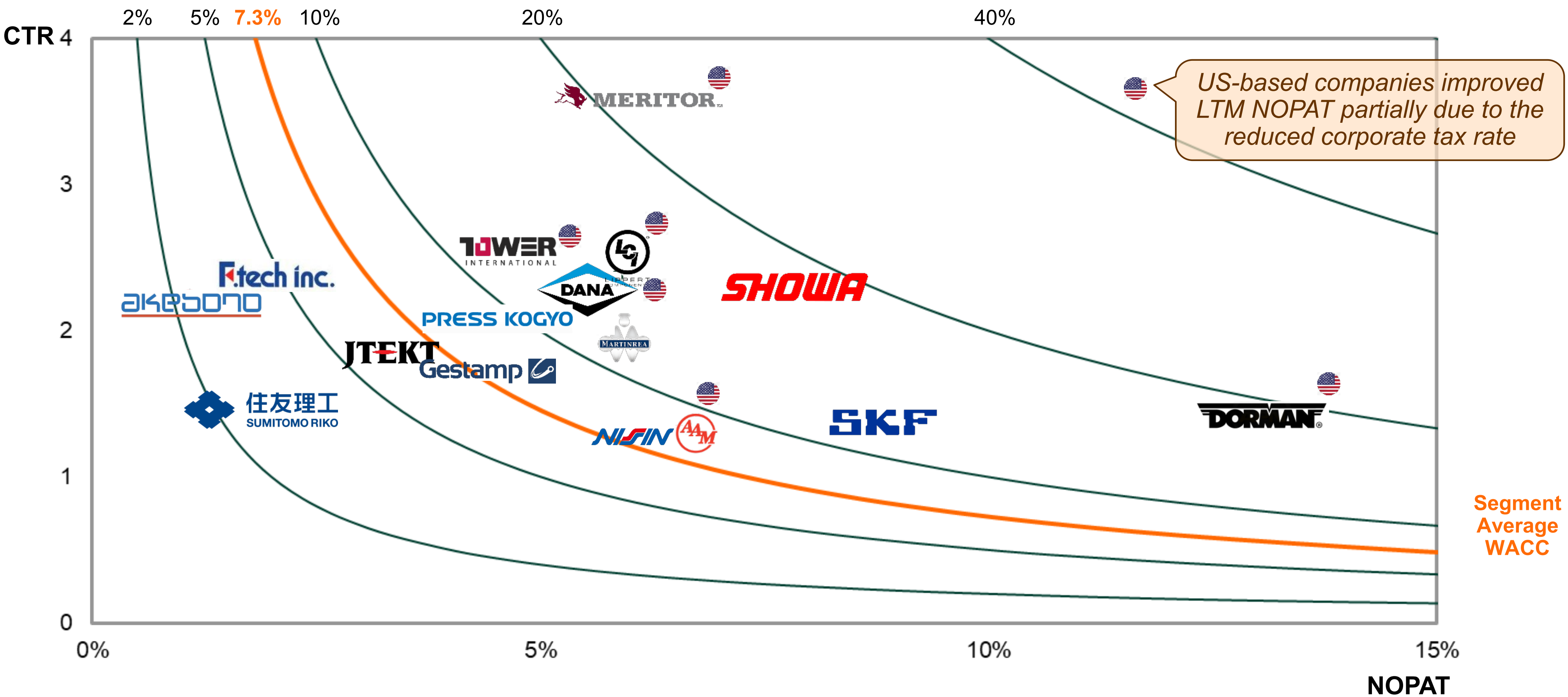
Chassis Segment Financial Performance Highlights:
LTM Development

Revenue Growth	EBIT Margin	SG&A/Sales
8.1%	7.1%	9.0%

COGS/Sales	Gross Margin	Gross Margin Volatility
81.5%	17.1%	1.0%

ROIC development for Chassis segment.

Peer Group ROIC LTM



Top Performers (LTM ROIC)	Meritor	+22.0%	Dorman	+18.5%	SHOWA	+18.3%
Bottom Performers (LTM ROIC)	Akebono	+2.4%	Sumitomo Riko	+2.9%	F Tech	+4.2%

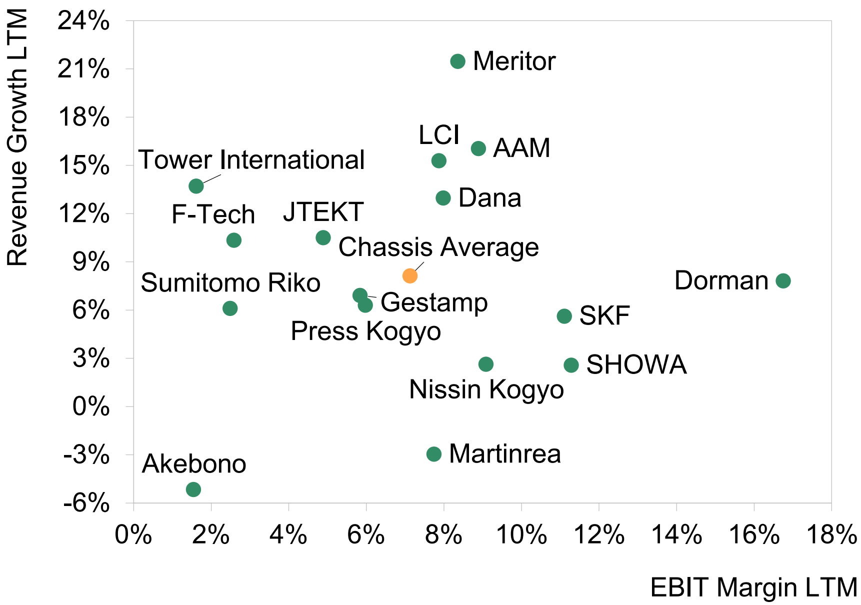
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

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.

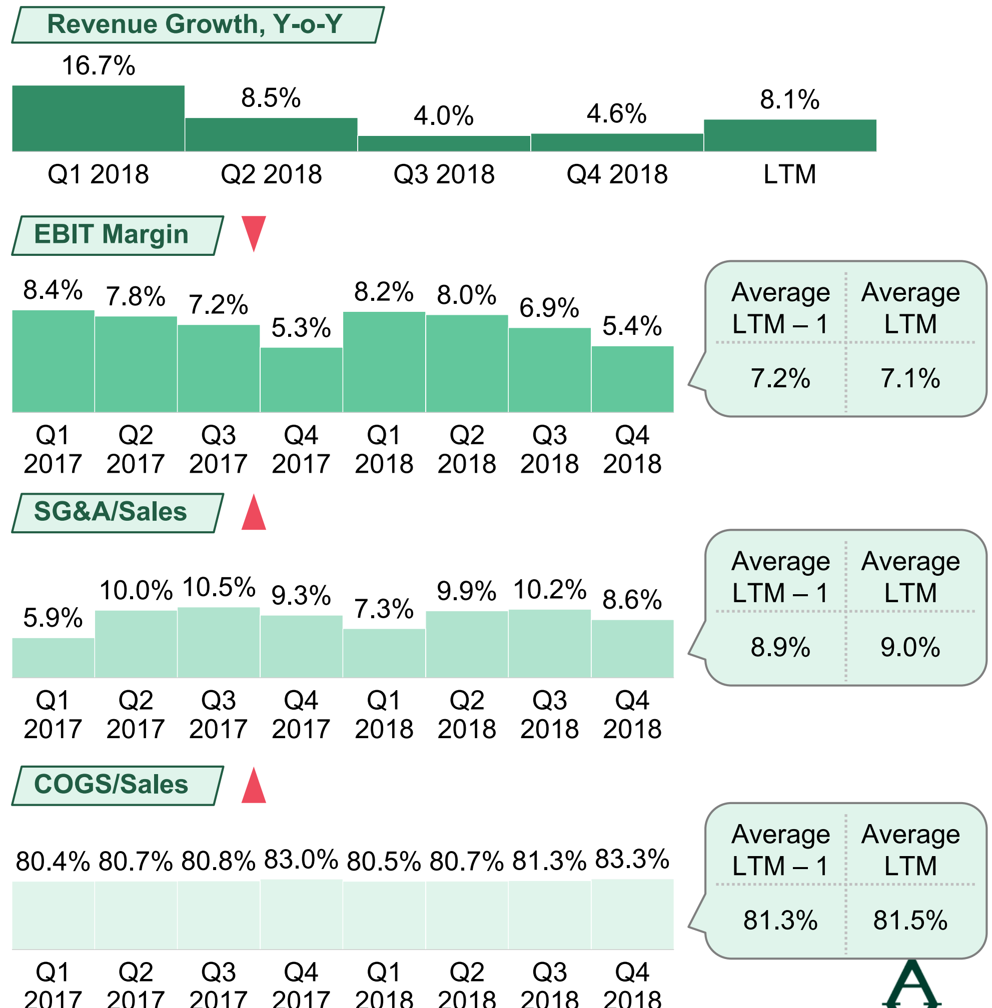
Chassis EBIT margins have worsened over LTM, as the strong demand from OEMs was not enough to offset rising material costs.

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



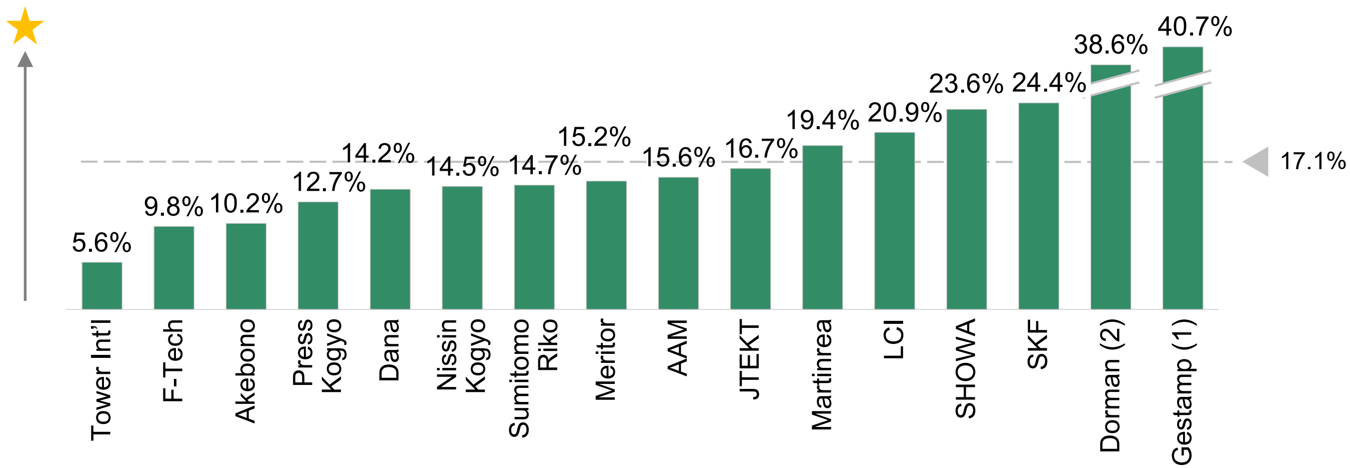
- The segment had an overall strong revenue growth over LTM, at 8.1% compared to the same period one year before
  - Though, it is interesting to note that both the average COGS / Sales and SG&A / Sales also increased
- The EBIT Margin decreased over LTM, on an year over year comparison. It went down to 7.1% from 7.2%, driven mainly by Lippert, AAM, and Akebono
- Meritor's revenue grew 21.5% supported by the acquisition of Fabco in Q4 2017
- Akebono performed worst among the segment as production trouble caused them to miss orders of brake products for the next generation models

Chassis' Quarterly Development

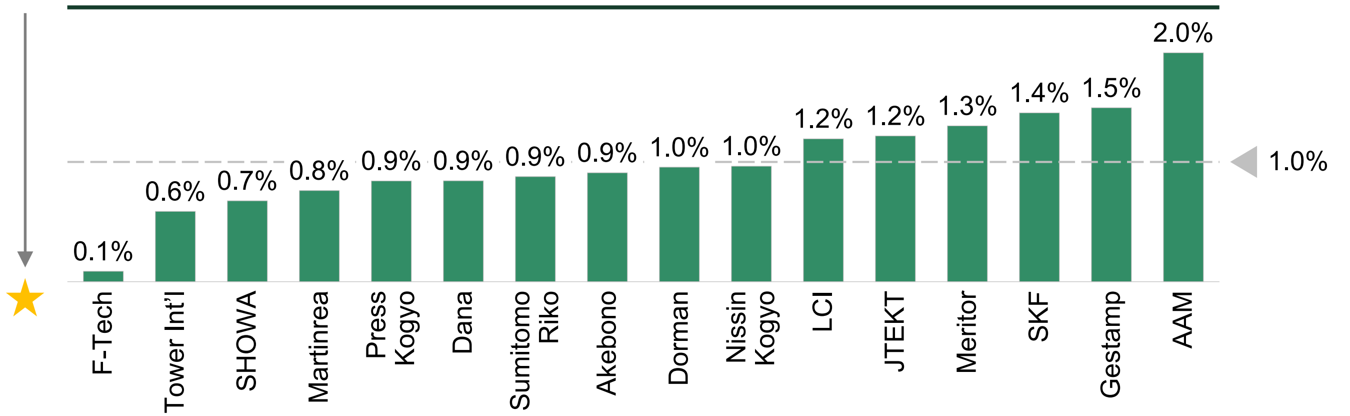


LTM gross margin and margin volatility in the Chassis segment highlights large gaps in performance among peers.

Chassis Gross Margin
LTM



Chassis Gross Margin Volatility
LTM



- The Chassis peer group had an overall gross margin of 17.1% over LTM, as the Q4 performance offset the stronger first half of 2018
- Meritor (15.2%) and AAM (15.6%) are performing slightly below the 17.1% average (excludes Gestamp) gross margin among their peer group, despite the strongest revenue growth over the same period
- Both Akebono and Martinrea were the only companies to experience decline in revenue in LTM. Their gross margins were 10.2% and 19.4%, respectively
- While most companies in the peer group had the their gross margin volatility within 0.2ppt of the average, AAM was 1.0ppt above it, at 2.0% in LTM

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

Applied Value has analyzed 16 companies in the Powertrain segment.

Powertrain

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

Executive Summary:

- Powertrain margins have decreased as SG&A and COGS both have taken up a higher share of the costs proportionately to Sales
- The Powertrain segment's LTM gross margin was pulled by Allison Transmissions, NGK and Hitachi, all with a very strong performance

Powertrain Segment Financial Performance Highlights:

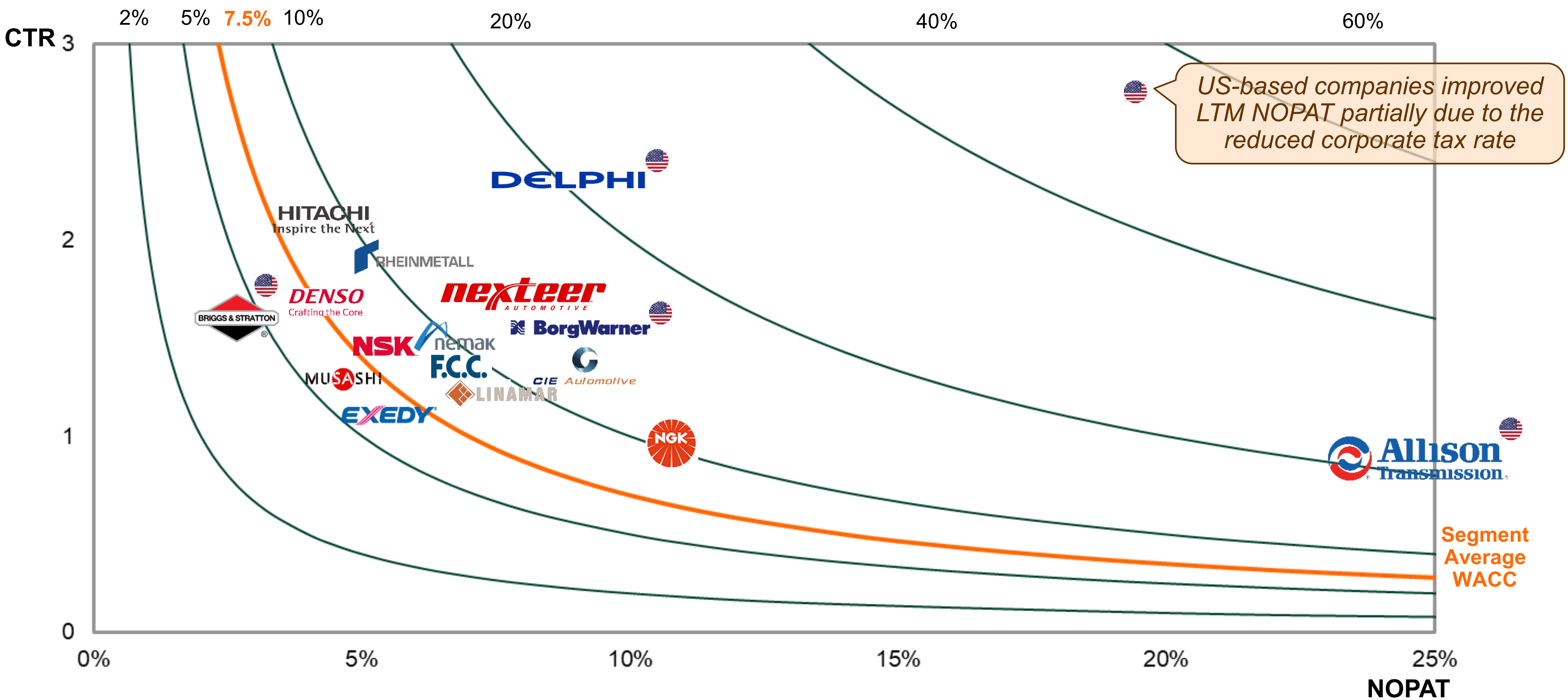
LTM Development

Revenue Growth	EBIT Margin	SG&A/Sales
7.1%	10.5%	11.8%

COGS/Sales	Gross Margin	Gross Margin Volatility
74.9%	22.4%	1.4%

ROIC development for Powertrains segment.

Peer Group ROIC LTM



Top Performers (LTM ROIC)	Delphi	+20.4%	Allison	+18.2%	Borg Warner	+14.0%
Bottom Performers (LTM ROIC)	Briggs	+4.0%	EXEDY	+5.9%	Musashi	+6.0%

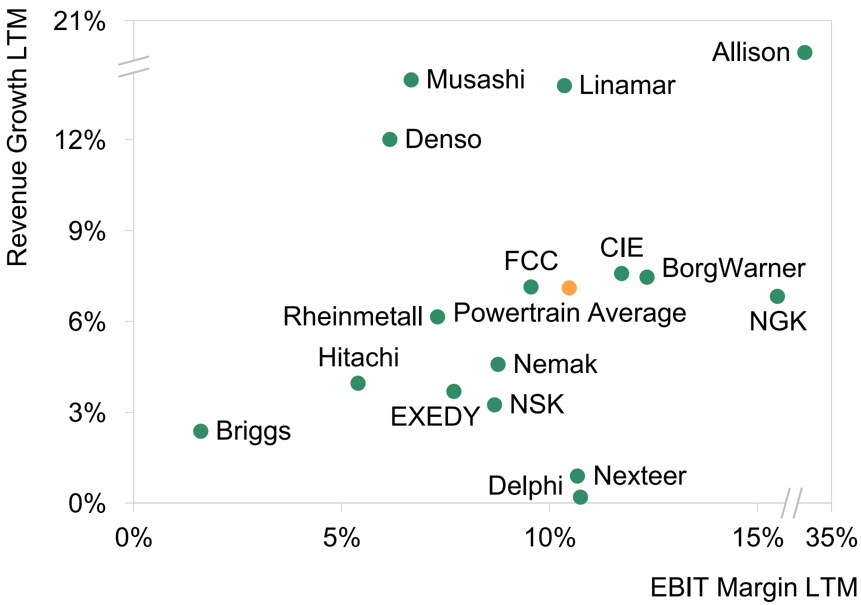
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

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.

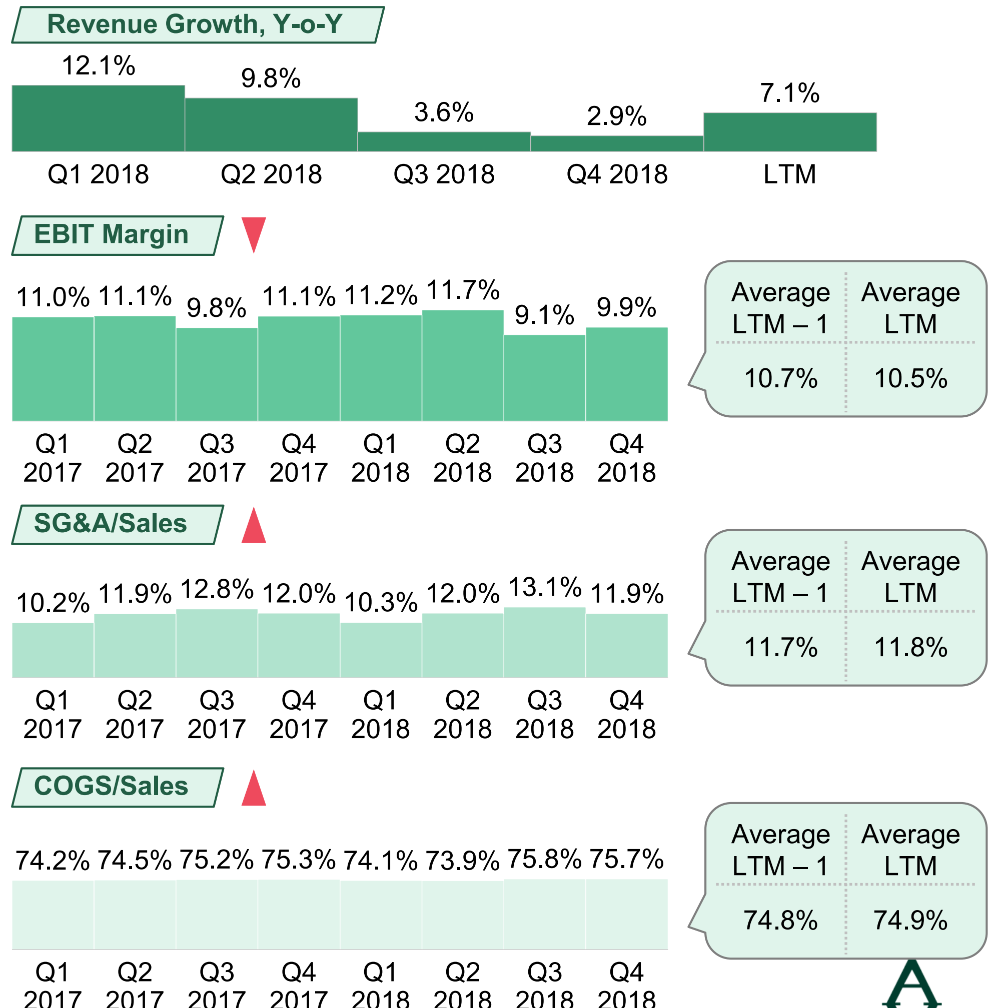
Powertrain margins have decreased as SG&A and COGS both have taken up a higher share of the costs proportionately to Sales.

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



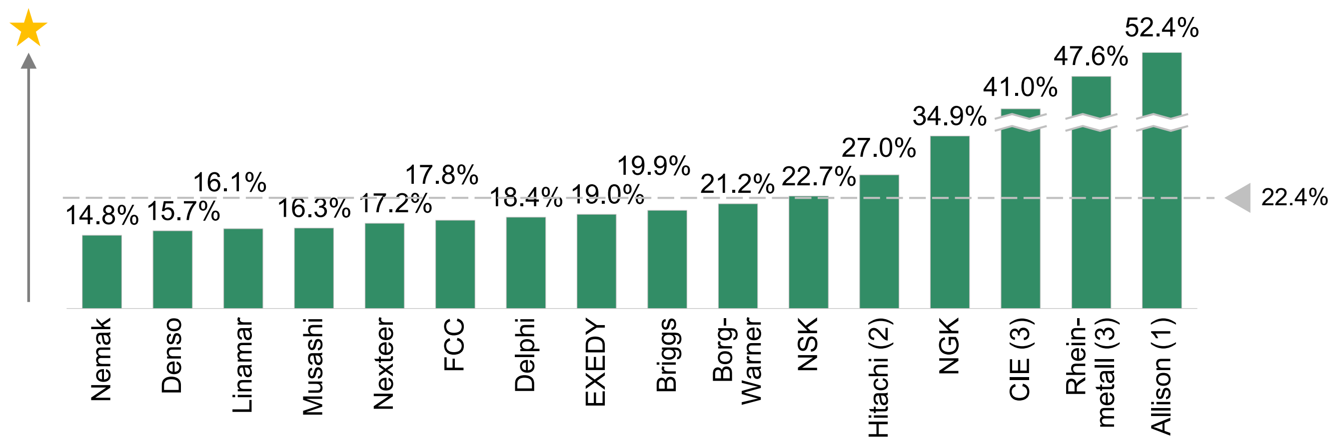
- The Powertrain segment had a very strong growth in the first half of 2018, as it grew 12.1% and 9.8% in Q1 and Q2, respectively relative to the same periods last year
- EBIT Margins shrank, pushed by tougher COGS development in LTM, offsetting the strong revenue growth of 7.1% in LTM. The weaker Q3 and Q4 numbers were largely driven by Briggs & Stratton, and Hitachi, respectively
- Allison led the segment as it registered 19.9% of growth in LTM, driven mainly by its North America On-Highway and Service Parts, Support, Equipment and Other division
- Denso grew 12.0% in LTM, fueled by its thermal and powertrain segments
- Briggs & Stratton, Cooper-Standard, Nexteer, and Delphi were among the worst performers of the peer group in LTM

Powertrain's Quarterly Development

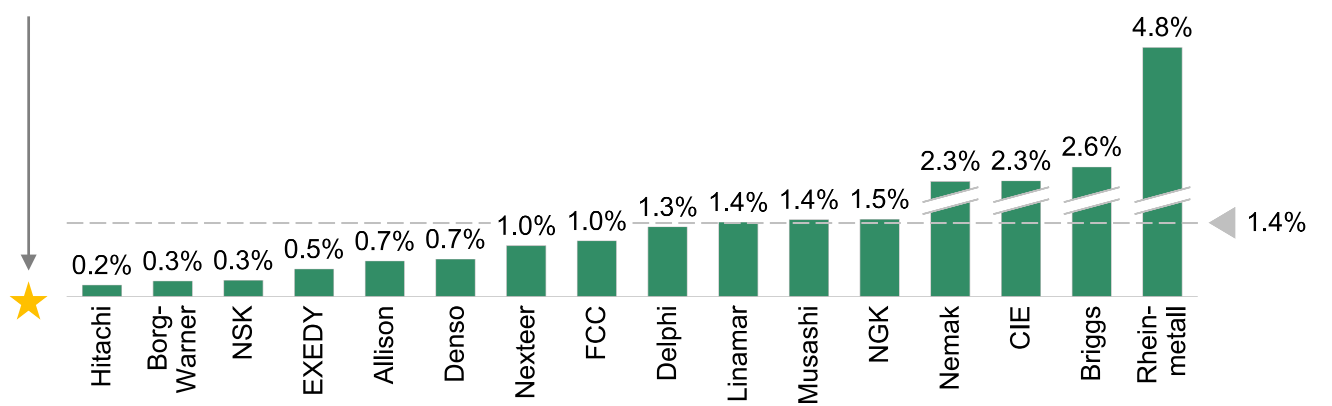


The Powertrain segment's LTM gross margin was pulled by Allison Transmissions, NGK and Hitachi, all with a very strong performance.

Powertrain Gross Margin
LTM



Powertrain Gross Margin Volatility
LTM



- Allison Transmissions, NGK, and Hitachi were the top performers, while Nemak trailed behind the peer group on their gross margin indicator over LTM
- Hitachi not only had the fifth highest gross margin in LTM, but also had the lowest volatility of the group, varying only 0.2 ppt on a quarter by quarter basis
- Briggs & Stratton, Nemak, and CIE had the worst gross margin volatility performance from the group, as they all had volatility above 2.0%
- Rheinmetall's gross margin volatility was heavily impacted by changes in inventory at each quarter

Note 1: Allison's product mix is tailored to buses, trucks, and specialty vehicles
Note 2: Automotive is only 10% of Hitachi's Revenue
Note 3: Rheinmetall and CIE do accounting by nature, which only considers raw materials instead of all COGS
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Applied Value has analyzed 17 companies in the Electronics & Infotainment segment.

Electronics

& Infotainment/ Connectivity

Airbag/controller, antilock braking system, harnesses, heating, entertainment, control modules, regulators as well as Infotainment including entertainment, info, navigation services

APTIV, SUMITOMO, METAIR, HI-LEX, Valeo, GENTHERM, HELLA, flex, VOXX International Corporation, NIPPON SEIKI, MODINE, HYUNDAI MOBIS, Visteon, SANDEN, Stoneridge, OMRON, Pioneer

Executive Summary:

- Despite an improvement in the SG&A/Sales performance, EBIT margin dropped 0.4ppt as the overall Cost of Sales rose in LTM.
- The Electronics segment's gross margin was driven up by a select group of high performer companies, but not all remained profitable.

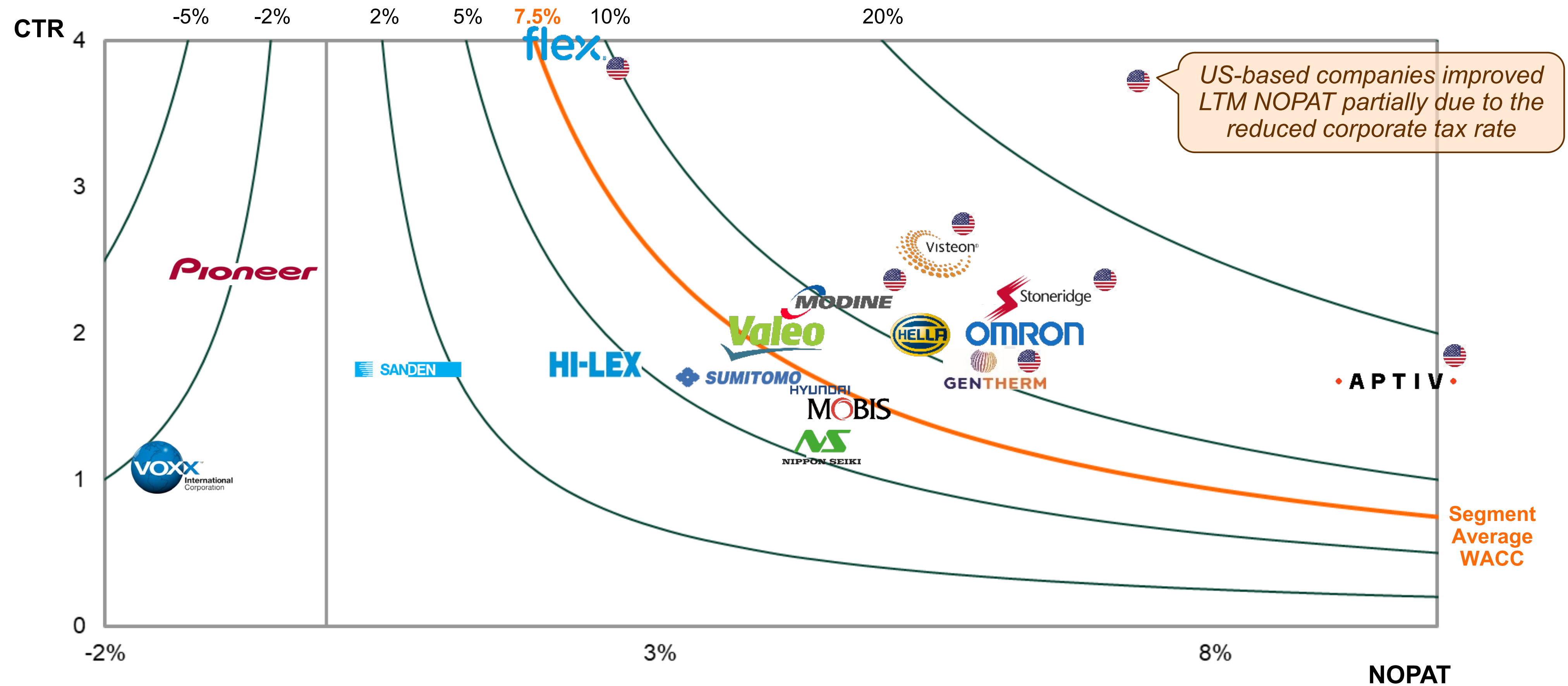
Electronics & Infotainment Segment Financial Performance Highlights:
LTM Development

Revenue Growth	EBIT Margin	SG&A/Sales
3.0%	5.4%	11.6%

COGS/Sales	Gross Margin	Gross Margin Volatility
79.8%	20.2%	1.1%

ROIC development for Electronics & Infotainment segment.

Peer Group ROIC LTM



Top Performers (LTM ROIC)	Aptiv	+16.5%	Visteon	+13.9%	Stoneridge	+13.4%
Bottom Performers (LTM ROIC)	Pioneer	-2.0%	Voxx	-1.5%	Sanden	+1.0%

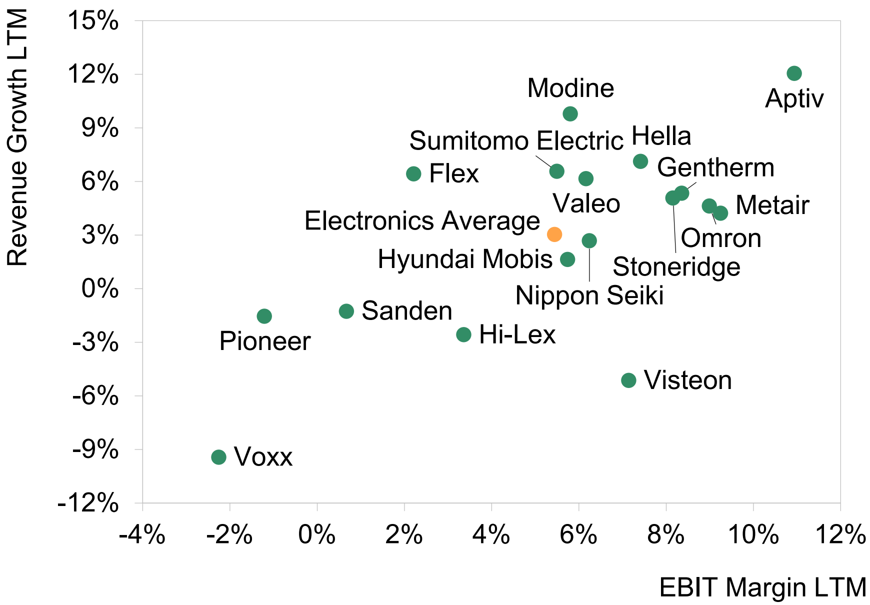
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

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.

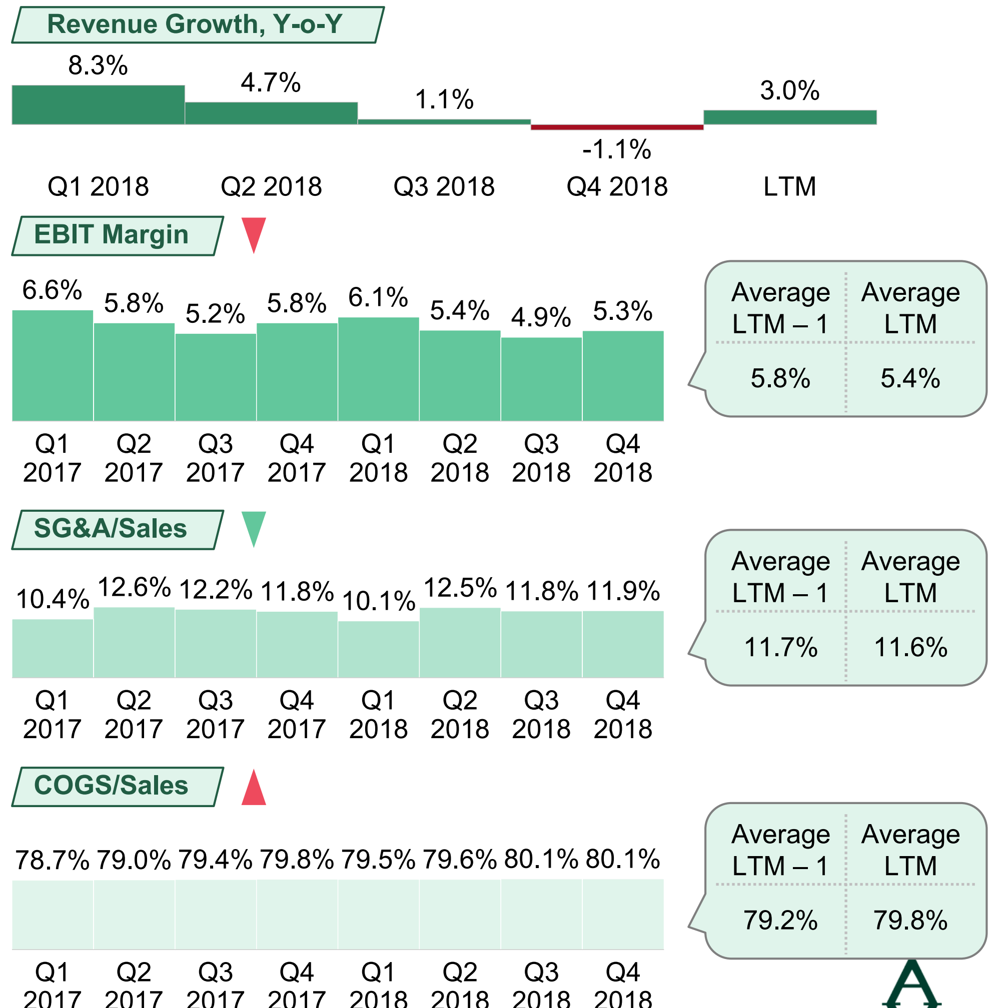
Despite an improvement in the SG&A/Sales performance, EBIT margin dropped 0.4ppt as the overall Cost of Sales rose in LTM.

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



- Revenue growth over LTM was 3.7%, though much stronger in Q1 and Q2 2018 than Q3 and Q4
- Aptiv grew 12.0% in LTM as a result of two acquisitions (KUM and Winchester), along with increased volumes in all major regions
- The segment EBIT Margin dropped from 5.8% in 2017 to 5.3% in 2018, pushed by higher COGS during LTM
- Aptiv, Modine, Hella, and FCC dominated the peer group over LTM, as they led in both revenue growth and in EBIT Margin
- Visteon's revenue decreased by -5.2% in LTM, as the company divested assets in France, and had unfavorable volumes with their current product mix
- Voxx's poor performance and revenue decline were driven mostly by product obsolescence, divestures, and political and economic volatility in Venezuela

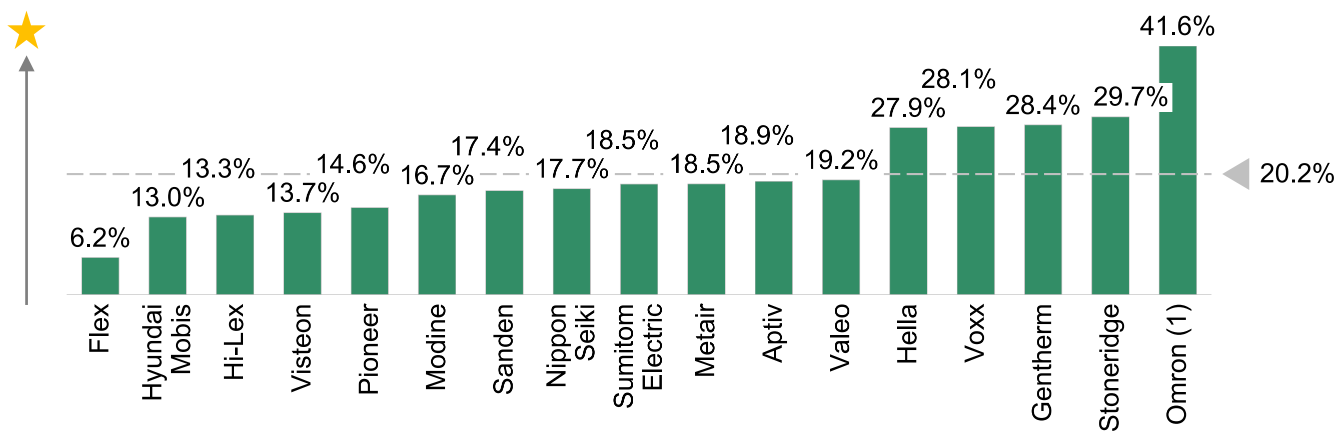
Electronics' Quarterly Development



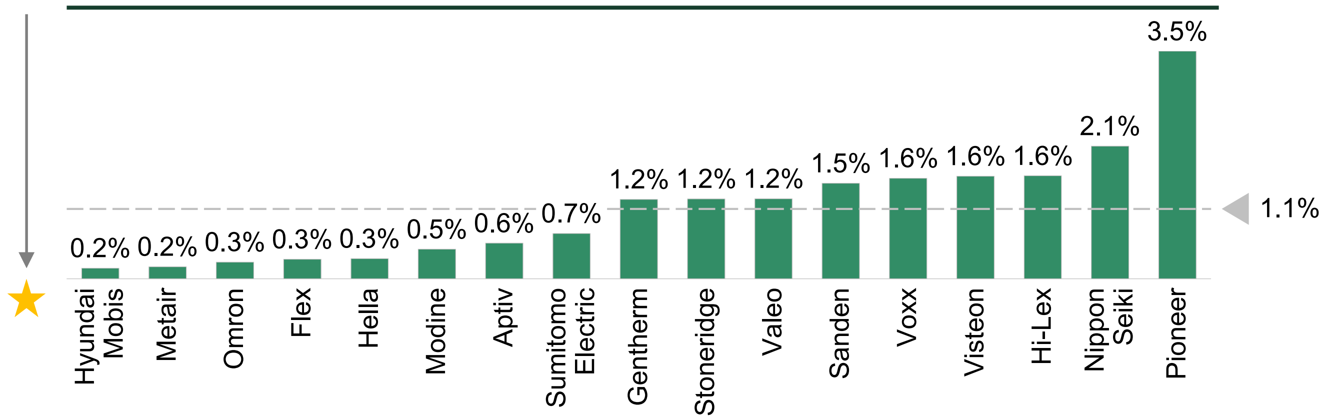
APPLIED VALUE

The Electronics segment's gross margin was driven up by a select group of high performer companies, but not all remained profitable.

Electronics & Infotainment Gross Margin
LTM



Electronics & Infotainment Gross Margin Volatility
LTM



- Gross margins on the Electronics & Infotainment segment averaged to 18.8% over LTM
- Flex was the weakest performer of all, at 6.2% gross margin, while Omron and Hella led the way among the peer group
- Out of the American companies, Stoneridge had the best gross margin, at 29.7%, performing in tandem with Genthem and Voxx
- Voxx's good gross margin performance is offset by way above average SG&A costs
- Pioneer had the worst performance on gross margin alignment, as it was the most volatile—an average deviation of 3.5% on a quarter over quarter basis

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 13 companies in the Exterior/Body segment.

Exterior/Body

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

MITSUBA, SUPERIOR INDUSTRIES, STANLEY, Topre, TUPY, GENTEX, FUTABA (FUTABA INDUSTRIAL CO.,LTD.), CooperStandard, KOITO, SHILOH, NBHX, UNIPRES, ITW

Executive Summary:

- The Exterior/Body segment's EBIT Margin has decreased over LTM, as COGS rose in the same period
- The Exterior/Body segment's LTM gross margin was offset by poor performance on Q4, ending the period at 18.0%

Exterior/Body Segment Financial Performance Highlights:

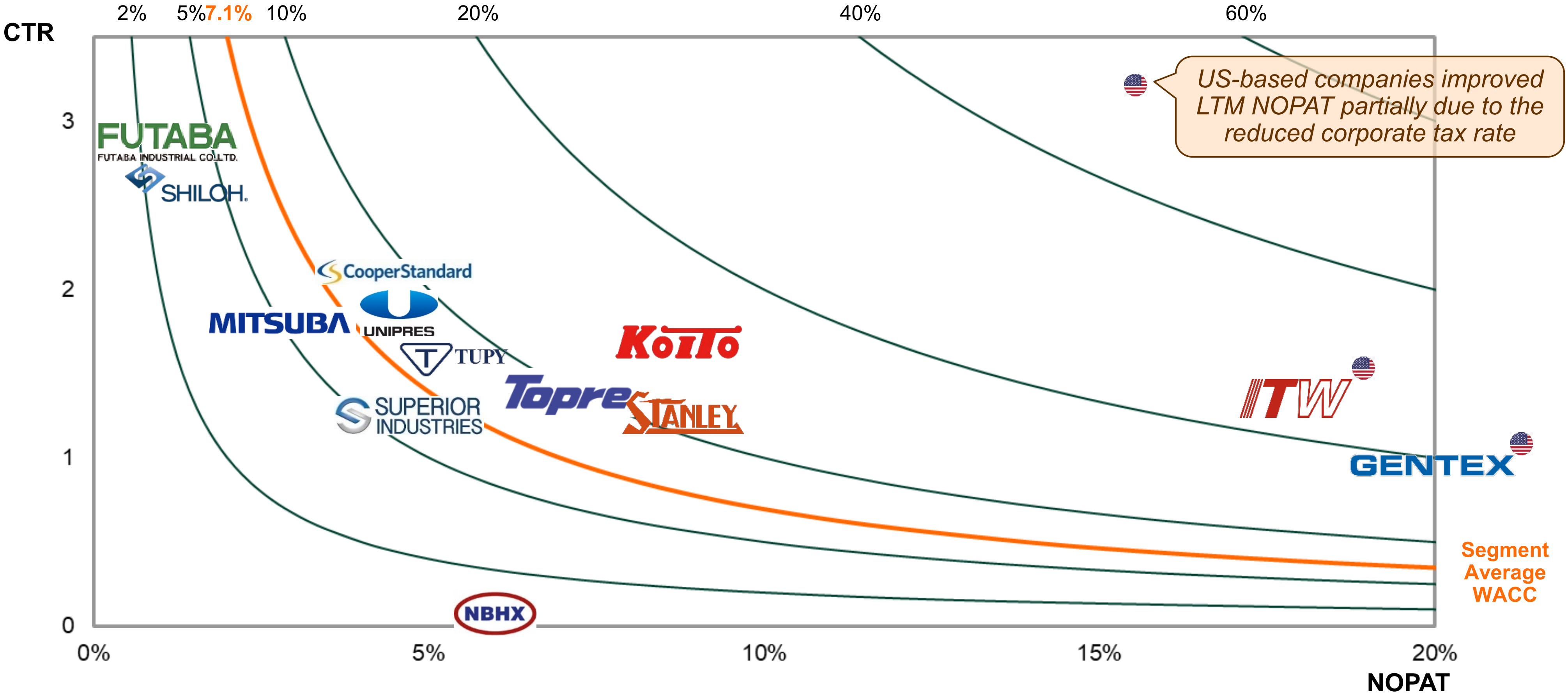
LTM Development

Revenue Growth	EBIT Margin	SG&A/Sales
8.7%	10.0%	7.3%

COGS/Sales	Gross Margin	Gross Margin Volatility
82.0%	18.0%	1.2%

ROIC for Auto Tier 1 leading companies – Exterior/Body segment.

Peer Group ROIC LTM



Top Performers (LTM ROIC)	ITW	+23.7%	Gentex	+23.1%	Koito	+14.3%
Bottom Performers (LTM ROIC)	Futaba	+2.8%	Mitsuba	+5.0%	Unipres	+8.6%

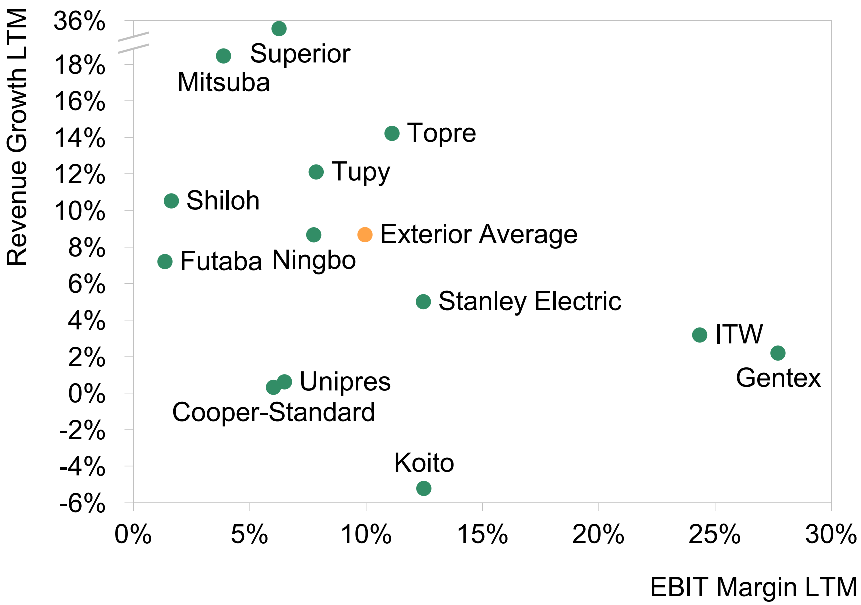
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

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.

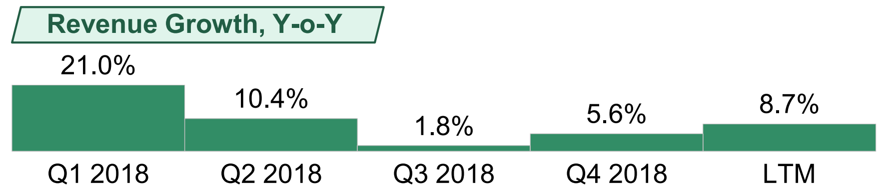
The Exterior/Body segment's EBIT Margin has decreased over LTM, as COGS rose in the same period.

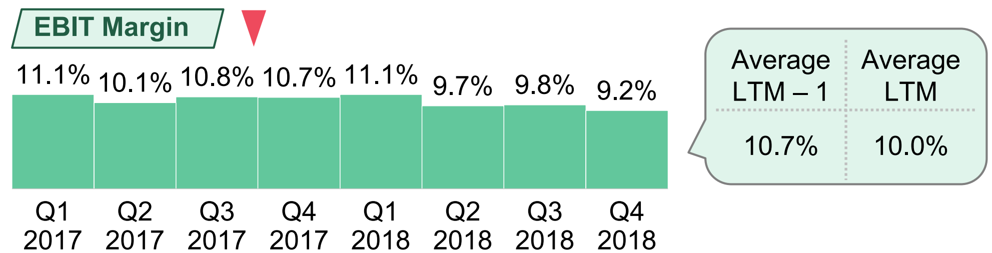
Exterior/Body's EBIT Margin x Revenue Growth, year-over-year

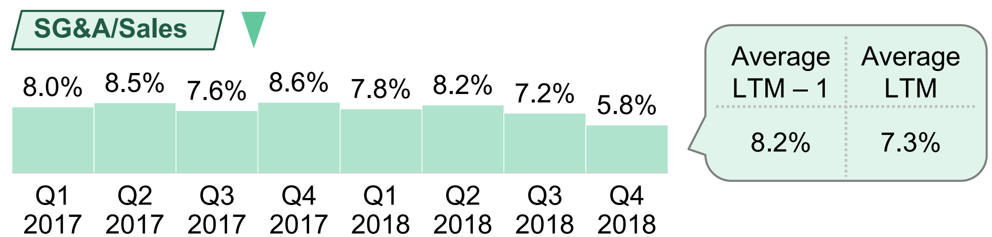


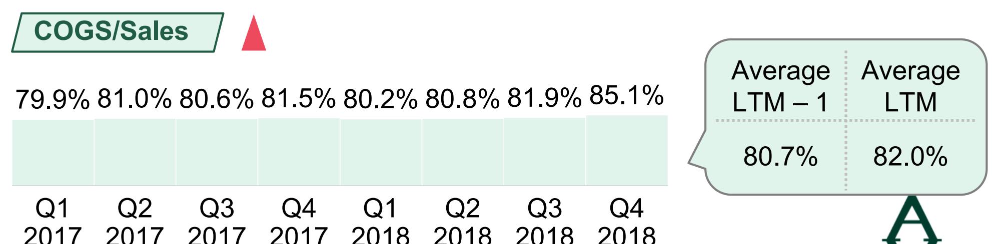
- Revenue growth was of 8.7% over LTM, despite the overall slow pace in Q3 2018
- EBIT Margin performance was weak across the segment, as only Superior, Tupy, ITW, Stanley Electric and Koito were able to improve EBIT Margin in LTM year over year, up 1.5 ppt, 0.9 ppt, 0.6 ppt, 0.6 ppt, and 0.7 ppt, respectively
  - Ningbo and Cooper-Standard were the biggest drops, as both ended LTM at -2.8 ppt year over year
- ITW's 24.3% EBIT Margin in LTM was sustained by the performance of its Auto OEM, Food Equipment, and Welding divisions
- EBIT Margin decreased from 2017 to 2018, as the group's average dropped from 10.7% to 10.0%
- Superior's revenue improvement was largely driven by the acquisition of Uniwheels, marking their expansion into Europe

Exterior/Body's Quarterly Development





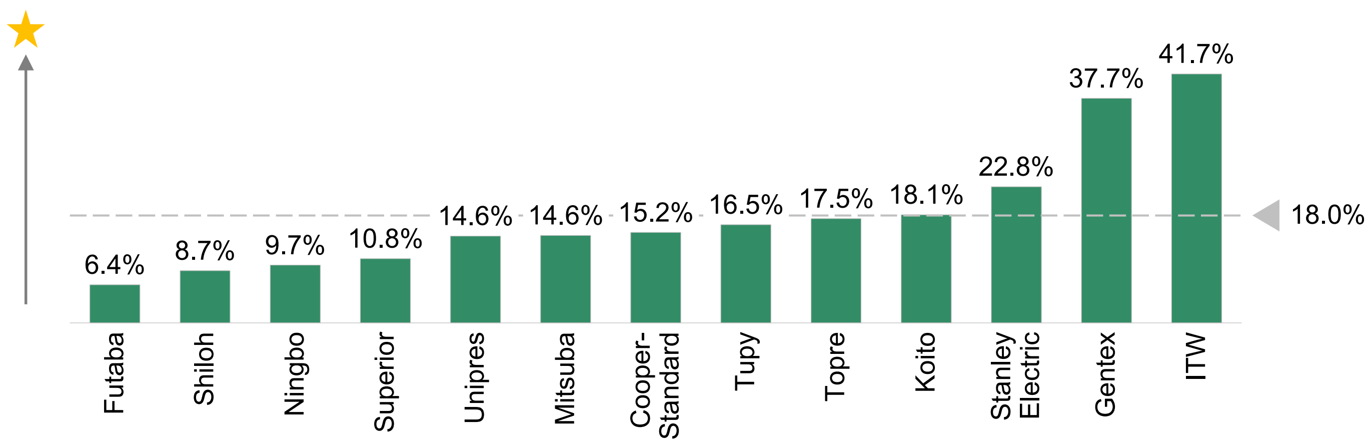




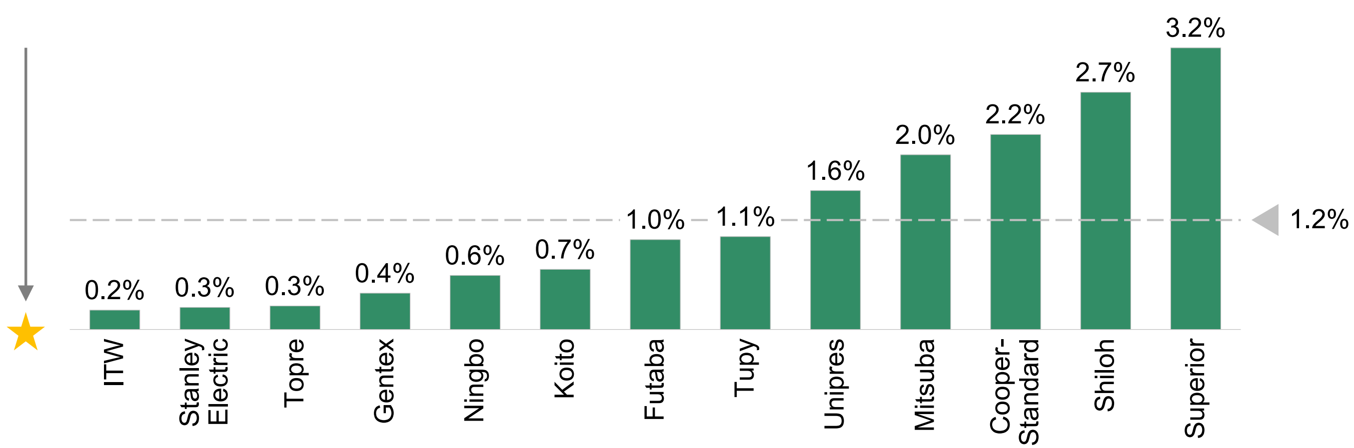
APPLIED VALUE

The Exterior/Body segment's LTM gross margin was offset by poor performance on Q4, ending the period at 18.0%.

Exterior/Body Gross Margin
LTM



Exterior/Body Gross Margin Volatility
LTM



- With a much smaller gross margin in Q4 2018 than the previous three quarters, LTM gross margin stayed at 18.0%, driven largely by ITW and Gentex
- Asian companies lagged behind the peer group in gross margin over LTM, and they also experienced high gross margin volatility
- Mitsuba had the highest gross margin volatility out of the segments in LTM, followed closely by Unipres. Coincidentally, both had the same gross margin, at 14.6%
- ITW was the best performer of the Exterior/Body segment, with a 41.7% gross margin and 0.2% volatility in LTM
- Superior's volatility is a reflection of the integration of their recently acquired European business

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

Applied Value has analyzed 12 companies in the Interior segment.

Interior

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

Executive Summary:

- The Interior segments' revenue growth developed positively, though the segment's EBIT margin decreased over LTM
- The Interior segment's gross margin had the lowest aggregate numbers in this report, despite TS Tech and Minth's performance

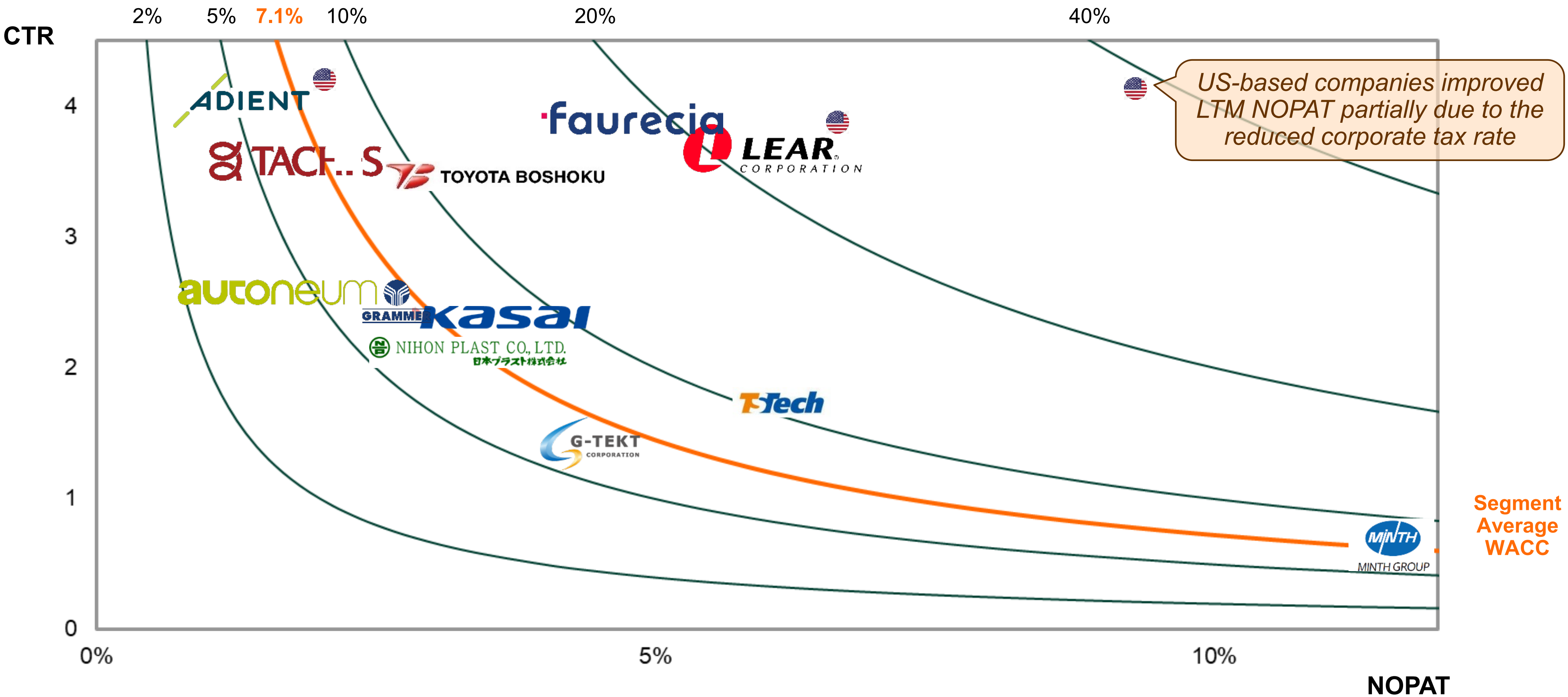
Interior Segment Financial Performance Highlights:
LTM Development

Revenue Growth	EBIT Margin	SG&A/Sales
4.5%	5.4%	5.4%

COGS/Sales	Gross Margin	Gross Margin Volatility
88.5%	16.3%	1.1%

ROIC for Auto Tier 1 leading companies – Interior segment.

Peer Group ROIC LTM



Top Performers (LTM ROIC)	Lear	+21.6%	Faurecia	+18.3%	Toyota Boshoku	+11.1%
Bottom Performers (LTM ROIC)	Adient	+5.3%	Autoneum	+6.0%	G-Tekt	+6.4%

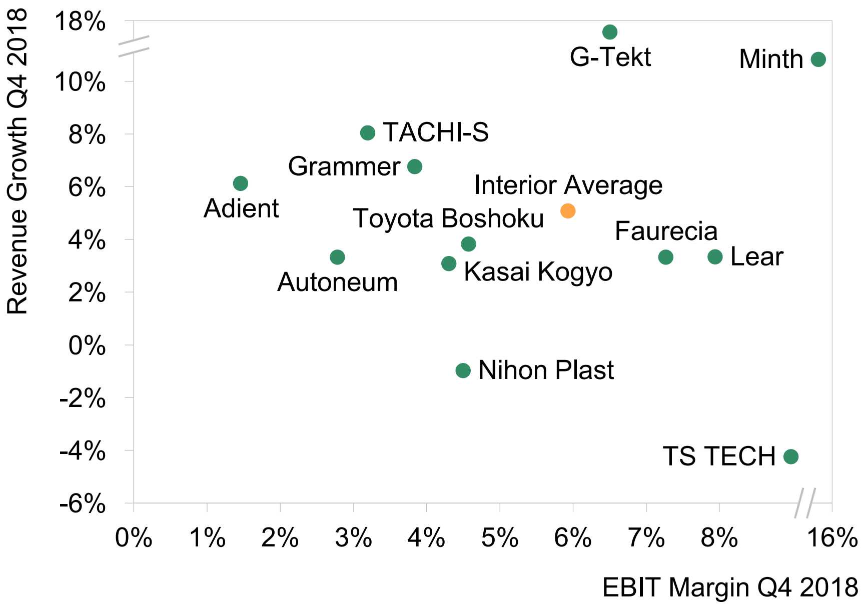
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

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.

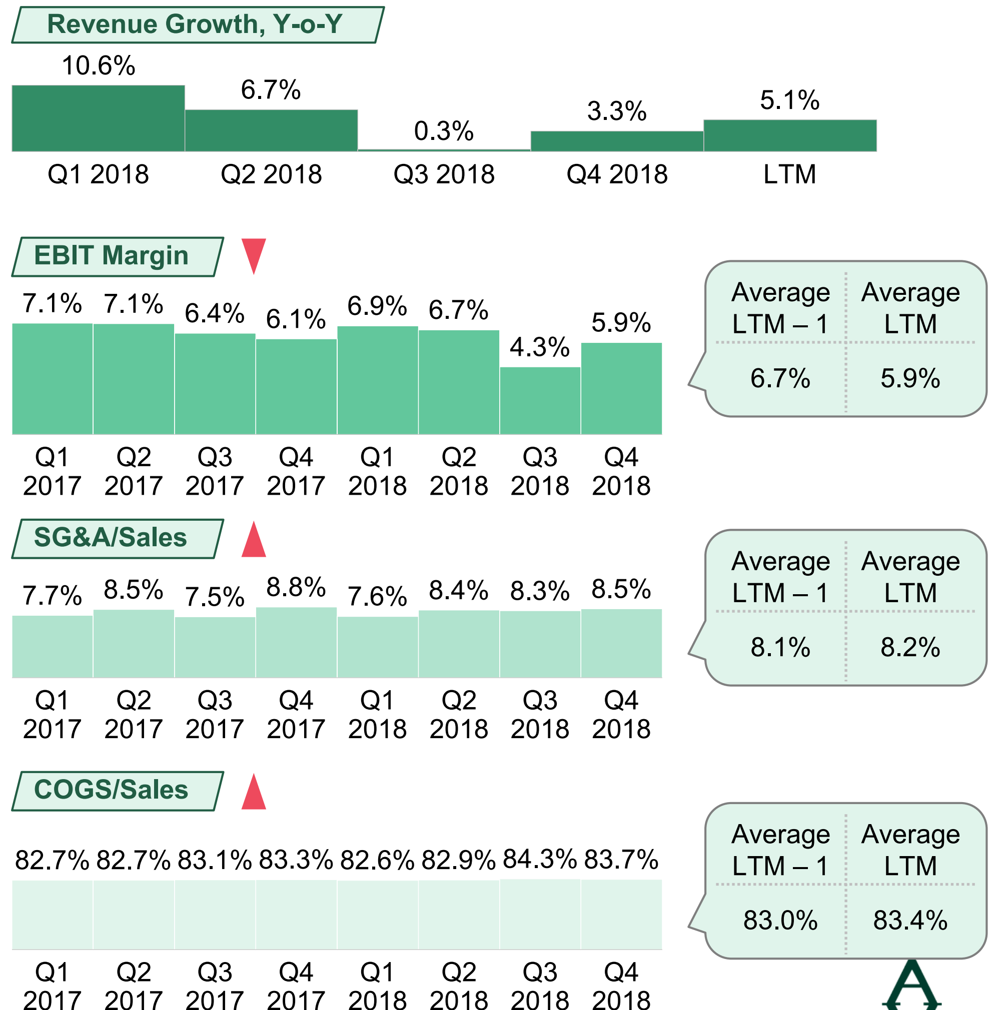
The Interior segments' revenue growth developed positively, though the segment's EBIT margin decreased over LTM.

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



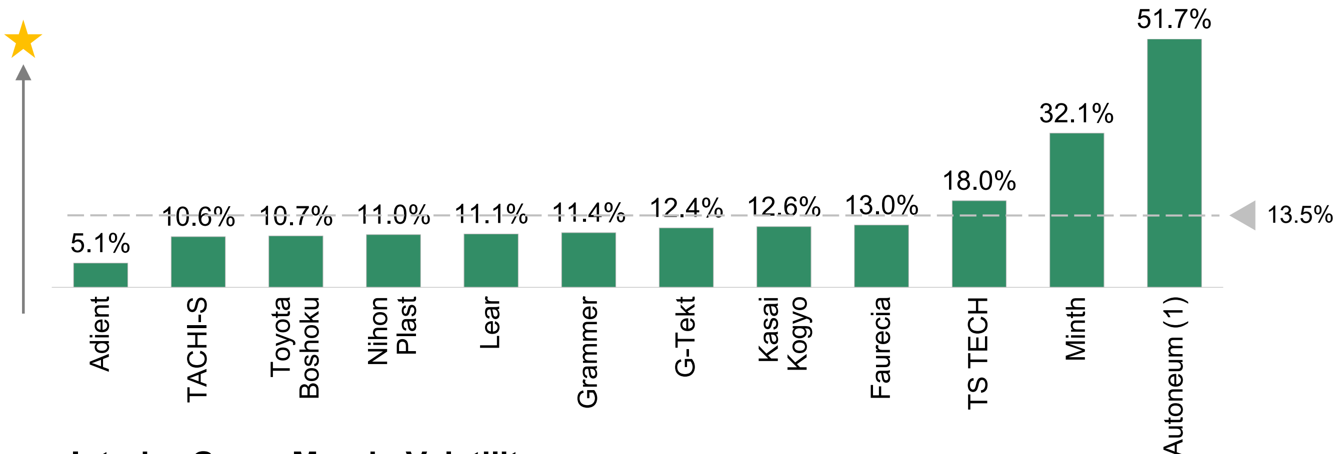
- The segment's revenue development over LTM was impaired by the two worst performers of the peer group, Nihon Plast and TS Tech, which sold less in LTM than in the same period one year prior
- The EBIT margin of the segment also had a stronger performance in 2017 than in 2018, as it dropped from 6.7% to 5.9%
- Lear finished LTM with 7.9% EBIT, down 0.3 ppt from the year before, as restructuring costs were higher than expected
- The performance in SG&A/Sales and COGS/Sales both rose in LTM, as it went up 0.1% and 0.4%, respectively
- Minth's revenue growth was supported by the consolidation of the acquisitions of Jiaxing Dura and SPTek Limited

Interior's Quarterly Development

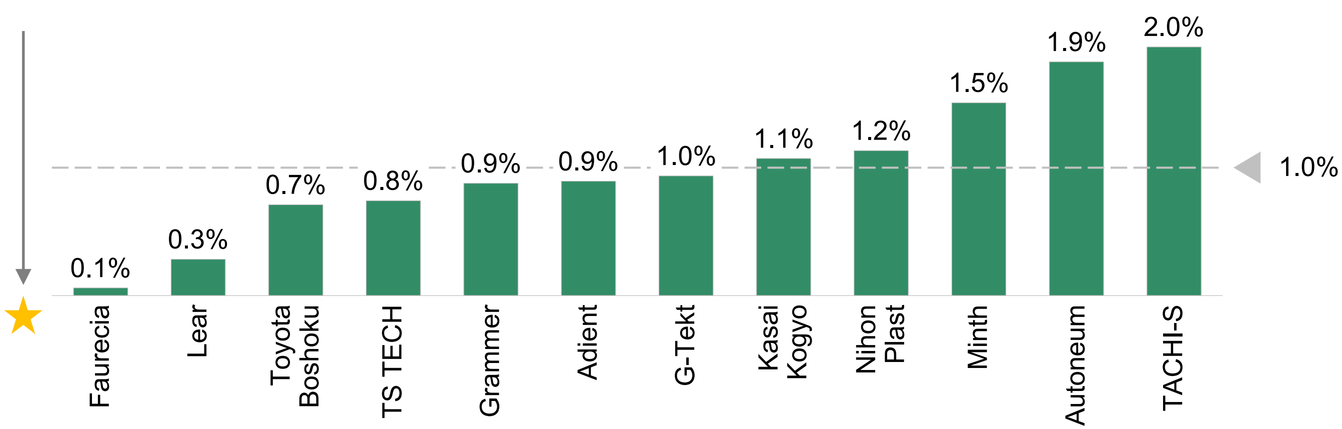


The Interior segment's gross margin had the lowest aggregate numbers in this report, despite TS Tech and Minth's performance.

Interior Gross Margin
LTM



Interior Gross Margin Volatility
LTM



- Gross Margin of the interior segment finished LTM at 13.5% (excludes Autoneum), led by Minth, and TS Tech
- Despite the poor revenue performance, the Japanese company had a very strong profitability performance at 18.0% gross margin
- All other players had near-average performance, with the exception of Adient, which finished LTM with a 5.1% gross margin
- TS Tech was the strongest performer in LTM as they had the highest gross margin at 18.0%, with volatility of 0.8%
- Adient had very slim gross margins in LTM and average volatility, at 5.1% and 0.9% respectively

Note 1: Autoneum does accounting by nature, which only considers raw materials instead of all COGS
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Applied Value has analyzed 12 companies in the Conglomerates segment.

Conglomerates

Suppliers a composite of the above categories with no distinct specialization

AISIN, MAGNA, Autoliv, TOKAI RIKA, KAUTEX A Textron Company, Panasonic, MITSUBISHI ELECTRIC, SMP Standard Motor Products, Inc, Continental, TENNECO, TOYODA GOSEI, Mando

Executive Summary:

- Revenue for the Conglomerates segment rose 6.7%, despite a 0.5ppt rise in COGS/Sales and the unfavorable trade/tariff environment
- The Conglomerate segment had a solid operating performance in LTM, though margins were below the previous period's levels.

Conglomerates Segment Financial Performance Highlights:

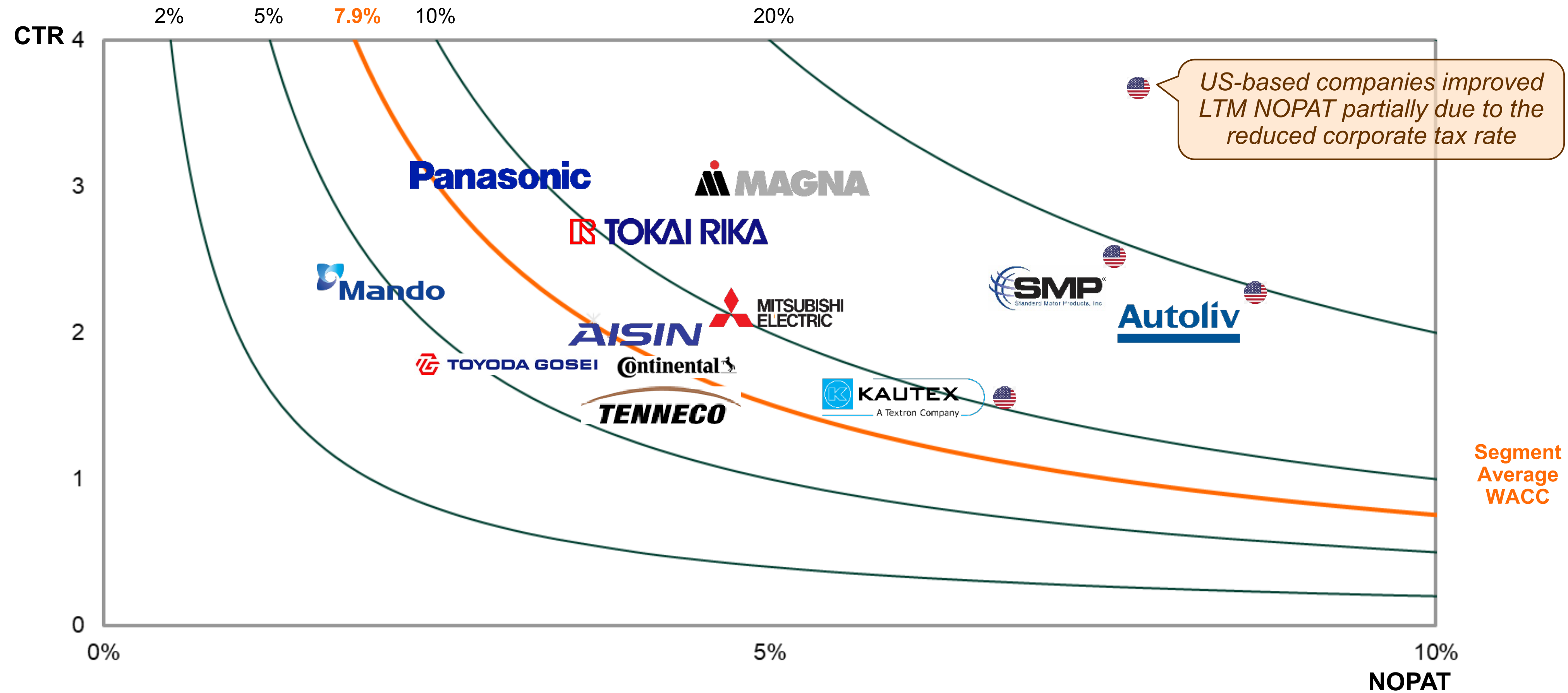
LTM Development

Revenue Growth	EBIT Margin	SG&A/Sales
6.7%	6.5%	10.1%

COGS/Sales	Gross Margin	Gross Margin Volatility
80.8%	19.2%	0.6%

ROIC for Auto Tier 1 leading companies – Conglomerates segment.

Peer Group ROIC LTM



Top Performers (LTM ROIC)	Autoliv	+17.0%	Standard Motor	+15.9%	Magna	+15.5%
Bottom Performers (LTM ROIC)	Toyoda Gosei	+5.6%	Tenneco	+6.2%	Continental	+7.5%

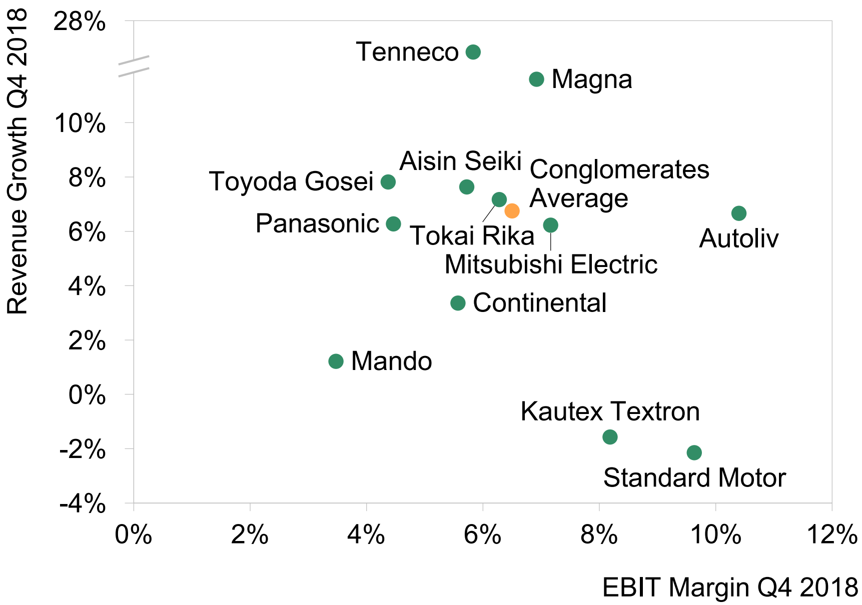
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

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.

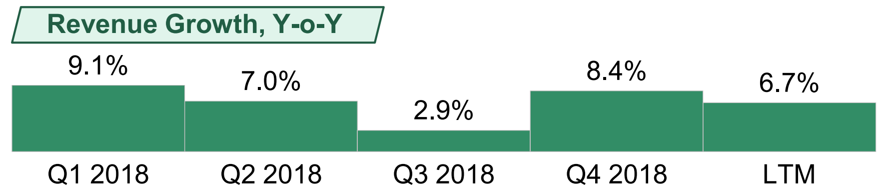
Revenue for the Conglomerates segment rose 6.7%, despite a 0.5ppt rise in COGS/Sales and the unfavorable trade/tariff environment.

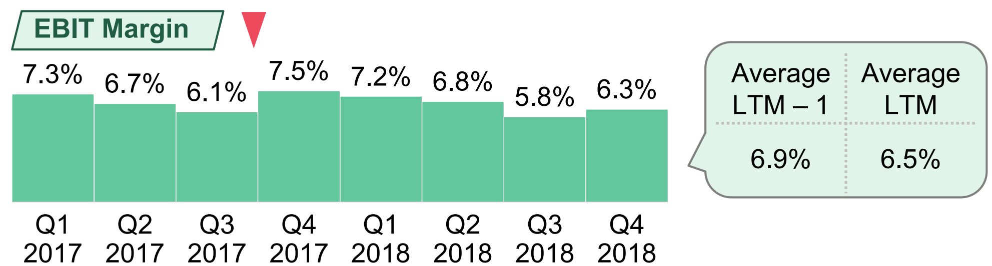
Conglomerate's EBIT Margin x Revenue Growth, year-over-year

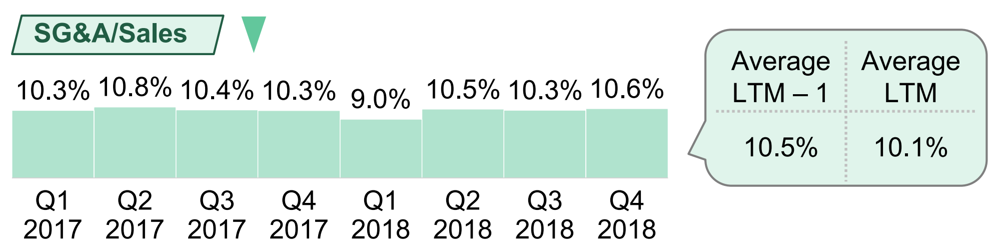


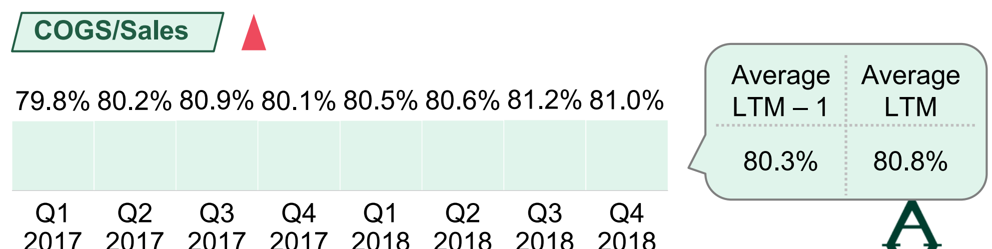
- Conglomerates had a strong LTM revenue growth performance, averaging 6.7%.
- Growth on Q4 2018 was skewed by Tenneco's acquisition of Federal Mogul, same reason for an exceptional revenue growth performance in LTM by the group
- EBIT Margin, however, dropped in comparison to 2017. It went from 6.9% to 6.5%, driven by Standard Motor, Mitsubishi Electric, & Magna
- Standard Motor's decrease in revenue of -2.2% was driven by its Engine Management division
- COGS/Sales rose, offsetting the decrease in SG&A/Sales in 2018. It finished the year at 80.8%, up from 80.3% in 2017, as Mitsubishi Electric, Panasonic, and Magna had significant cost increases

Conglomerate's Quarterly Development



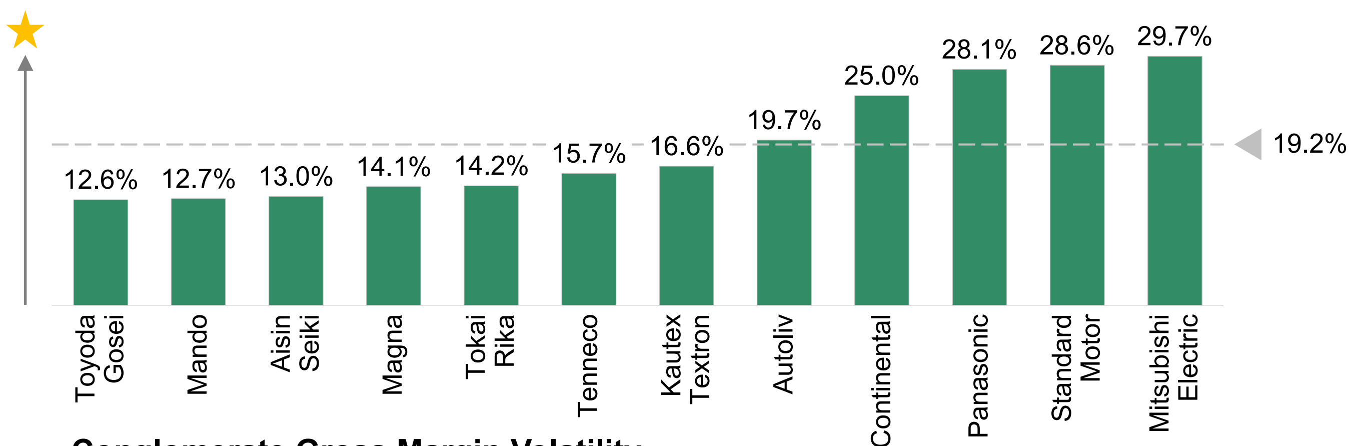




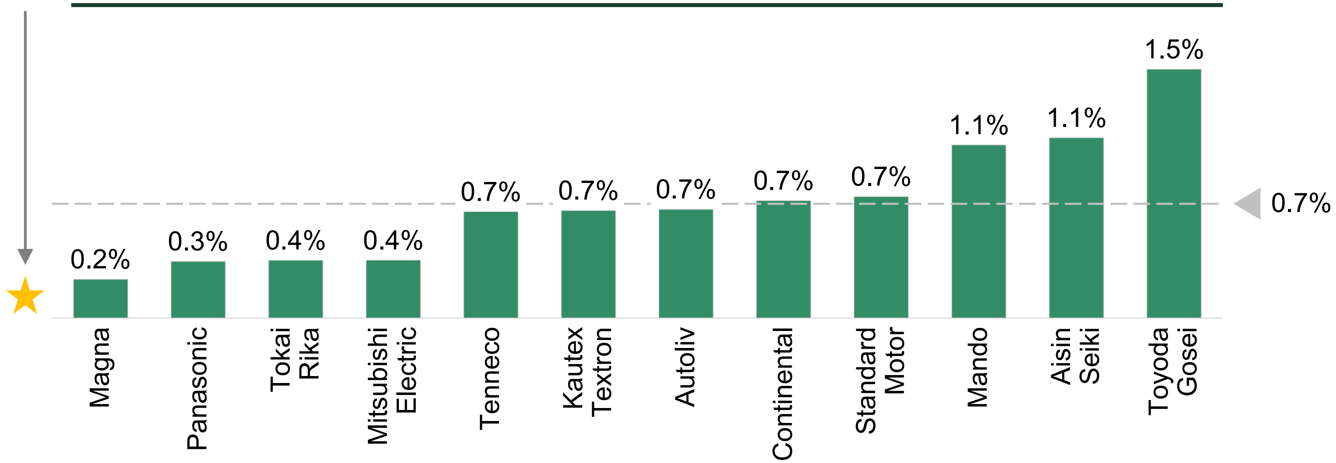


The Conglomerate segment had a solid operating performance in LTM, though margins were below the previous period's levels.

Conglomerate Gross Margin
LTM



Conglomerate Gross Margin Volatility
LTM



- Panasonic, Standard Motor, and Mitsubishi Electric led the way with the best Gross Margin as a percentage over sales numbers, at 28.1%, 28.6%, and 29.7%
- Toyoda Gosei had the smallest gross margin out of the peer group, as well as the highest volatility. Unsurprisingly, they also have the worst ROIC in LTM, and they are the only company below the segment's average WACC
- Magna had the best gross margin control in LTM as they had the smallest volatility, though there is room for improvement as their gross margin (14.1%) was below the segment's average (19.2%). Yet, they had the third best ROIC out of the group, at 15.5% in LTM

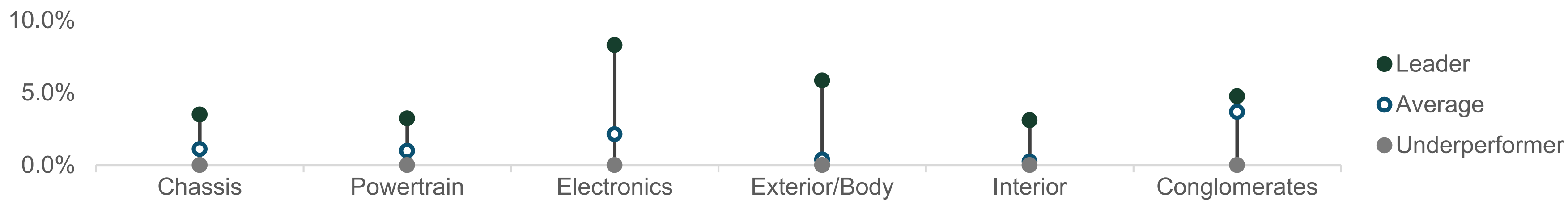
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

APPLIED VALUE

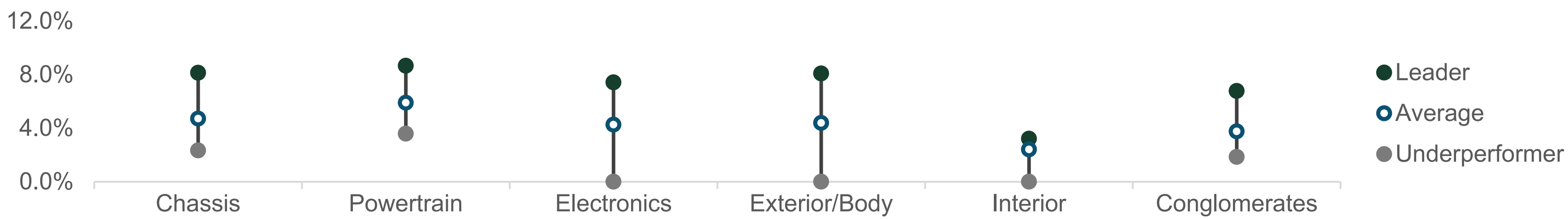
Applied Value

The Interior segment had the least amount of Capex investment in LTM, while Electronics led the way on R&D investment.

R&D/Sales by Segment,
LTM



Capex/Sales Growth by Segment
LTM

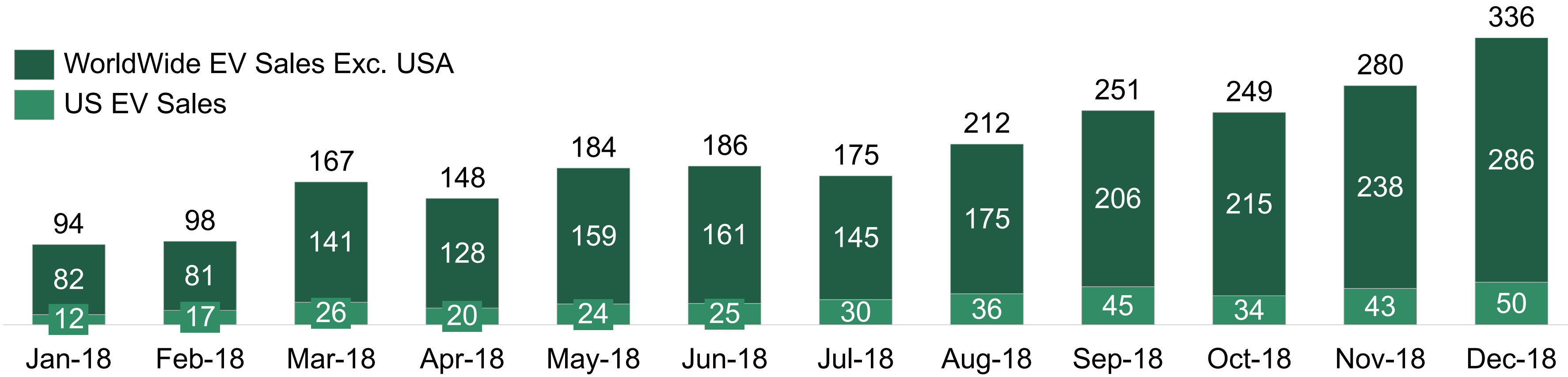


Source: Capital IQ, Applied Value analysis.

- The Powertrain segment had the biggest Capex investment out of all six groups, at 8.7% of sales at the leader level, and at an average of 5.9%.
- Electronics led the way at the leader level for R&D investment, though on average the Conglomerates segment had the most R&D investment, at 3.7%.

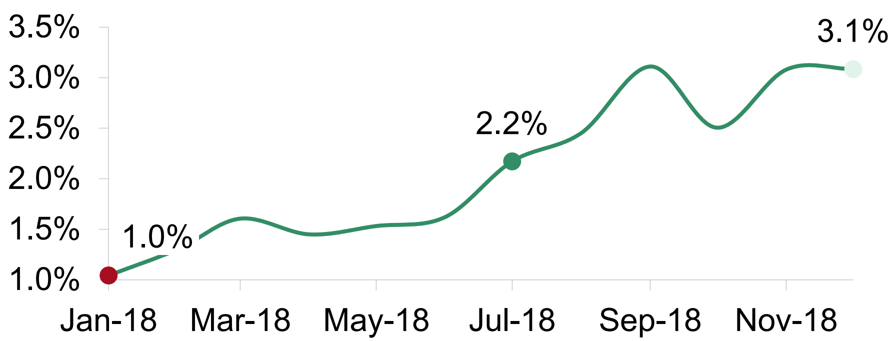
The growth in EV sales has been strong, though the proportion of EV sales to total sales has started to flatten.

EV Sales by month 2018, (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 .

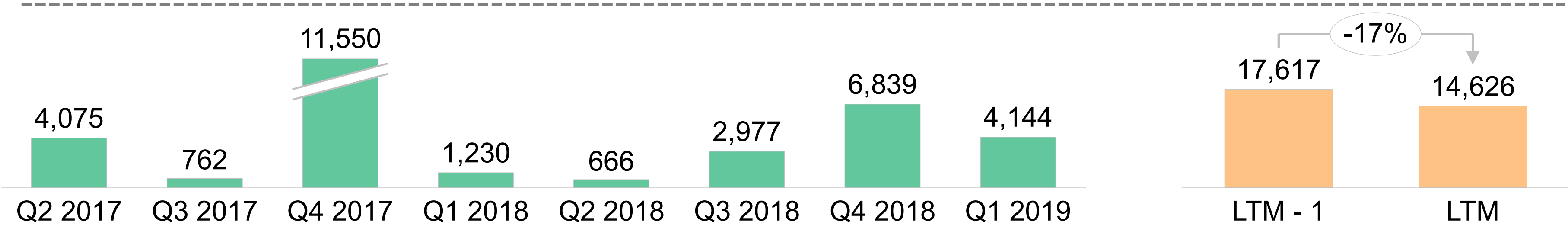
- US EV sales totaled 361k in 2018, or ~15.2% of total world sales
- Though, at the same time it fluctuated between 1.0% and 3.1% of total car sales in the US in 2018
- EV sales in December were at least four times higher than in January, though the growth as a proportion of total light vehicle sales was smaller. It grew approximately 3 times as the share went from 1.0% to 3.1%

Tenneco invested 5.4BUSD in the acquisition of Federal Mogul, and Hitachi acquired Clarion for 1.5 BUSD.

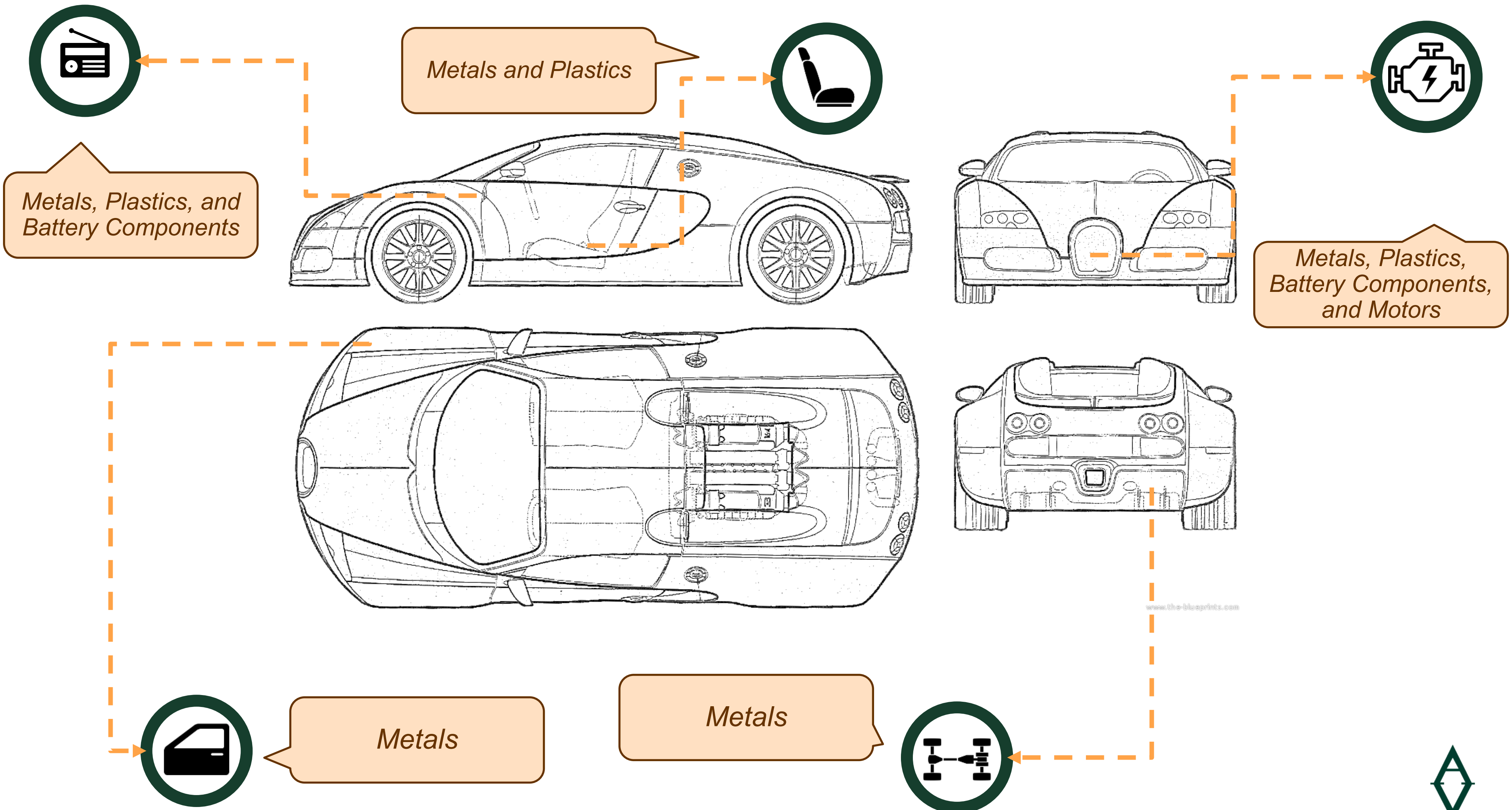
Top 5 Most Recent M&A Activity

Company	Target	Close Date	Value, USD	Target Description
TENNECO	FEDERAL MOGUL	10/01/2018	5,400M	*Federal Mogul is a developer, manufacturer and supplier of Ride Performance and Clean Air products & tech. solutions*
HITACHI Inspire the Next	clarion	3/01/2019	1,535M	*Clarion is a manufacturer of car audio, automotive navigation systems, AutoPCs, visual, bus, and communication equipment*
APTIV	Winchester Interconnect. We Energize Innovation.	10/24/2018	650M	*Winchester is a customer engineered interconnect solutions provider for harsh environmental & high cost-of-failure apps*
DANA	oerlikon	02/28/2019	607M	*Dana acquired the Drive Systems segment of Oerlikon, a global technology and engineering group based in Switzerland*
MAGNA	OLSA Optical Lighting Systems Automotive	10/31/2018	267M	*OLSA is a manufacturer of automotive optical lighting products for OEMs, including interior/exterior products and rear lamps*

Total M&A Transaction Amount in previous 2 years, MUSD



Applied Value has highlighted the main raw materials across for Auto Tier 1s; the next pages show the most relevant cost curves.



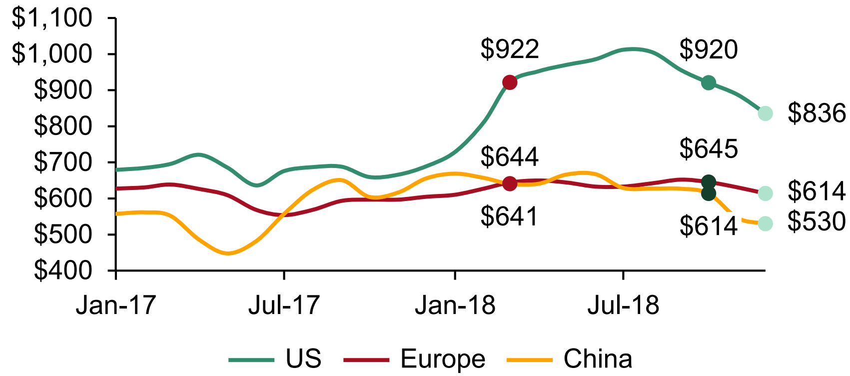
Applied Value

Market Trends Summary.

	Key Takeaways
Metals	• Metals Costs differed drastically by region the US had large price increases in H1 2018 before falling closer to normal levels over H2.
Plastics	• Plastics costs have flattened out in early 2019, following a decline through Q3 2018, putting most prices below 2017 levels.
Battery & Electrical	• Battery Component Costs have risen drastically from Jan 2017 until Q2 2018 before declining over H2 2018.
Motors	• Electric Motor costs peaked in the months from January 2018 to July 2018, but then started to decrease.
Indirect Costs	• Indirect costs of manufacturing turned downwards in Q4, but remain up relative to where they were at the beginning of the year.
Trade & Employment	• Trade Disputes have caused the costs associated with Auto related manufacturing import/export to fluctuate more than in the past.

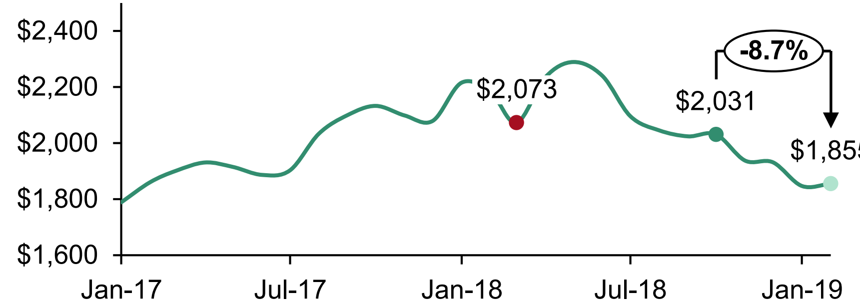
Metals Costs differed drastically by region the US had large price increases in H1 2018 before falling closer to normal levels over H2.

Global Steel Prices, Hot Rolled Coil
USD/MT



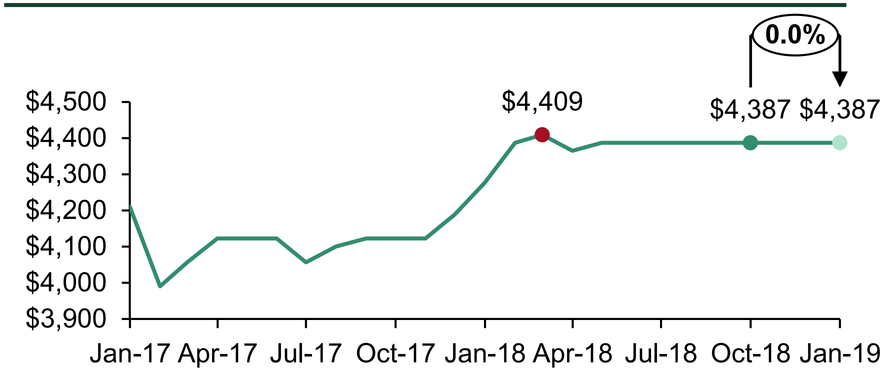
Source: CRU

Aluminum
USD/MT



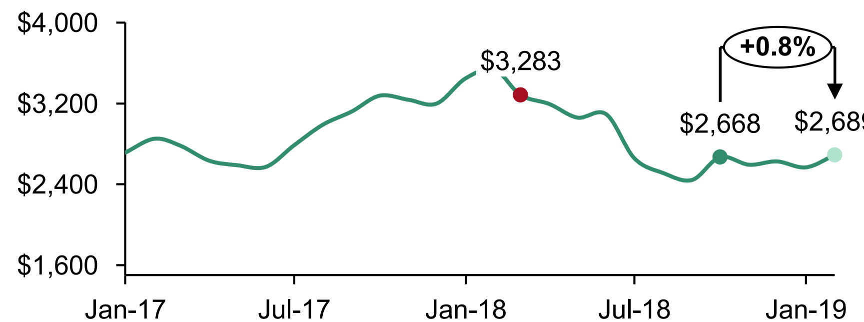
Source: LME

Magnesium
USD/MT



Source: AMM

Zinc
USD/MT



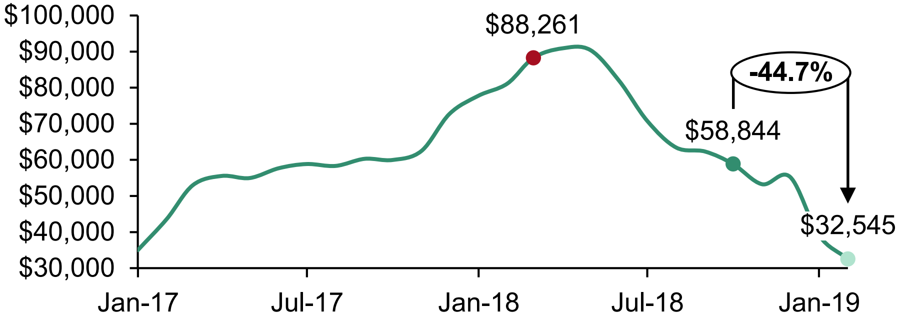
Source: Capital IQ

Last Year   October Data   Most recent data

APPLIED VALUE

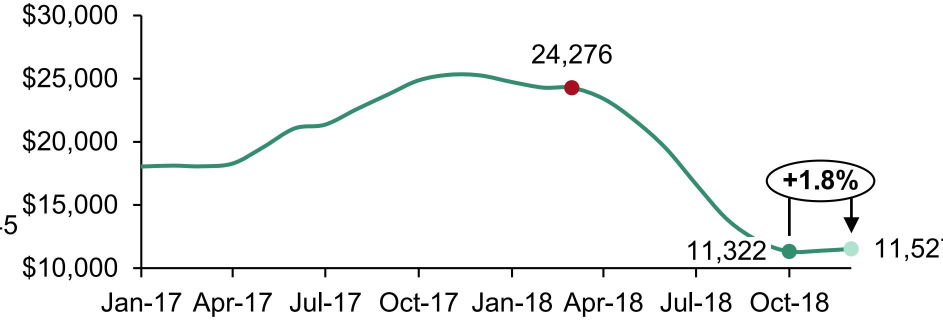
Battery Component Costs have risen drastically from Jan 2017 until Q2 2018 before declining over H2 2018.

Cobalt
USD/MT



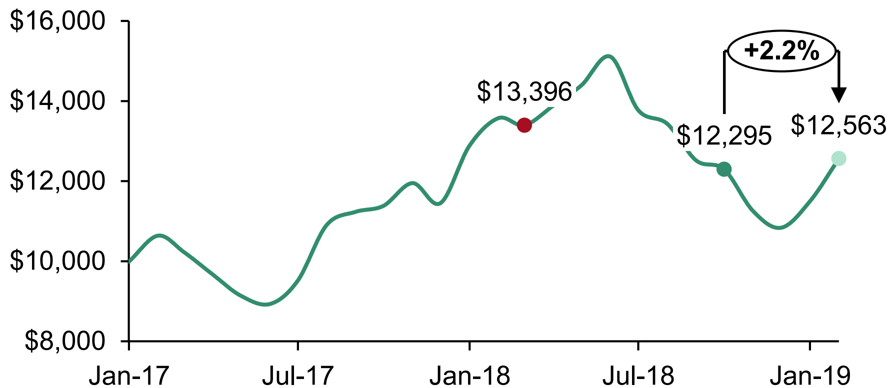
Source: LME

China 99.5% Lithium Carbonate spot price
USD/MT



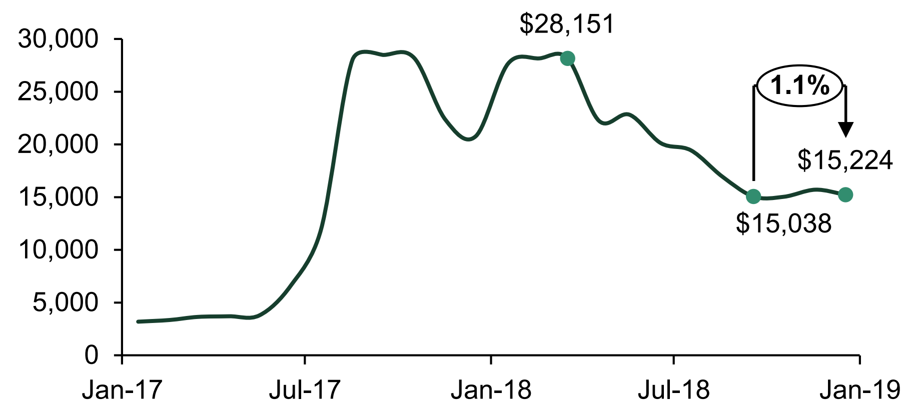
Source: Shanghai Metals Market

Nickel
USD/MT



Source: LME

Graphite
USD/MT

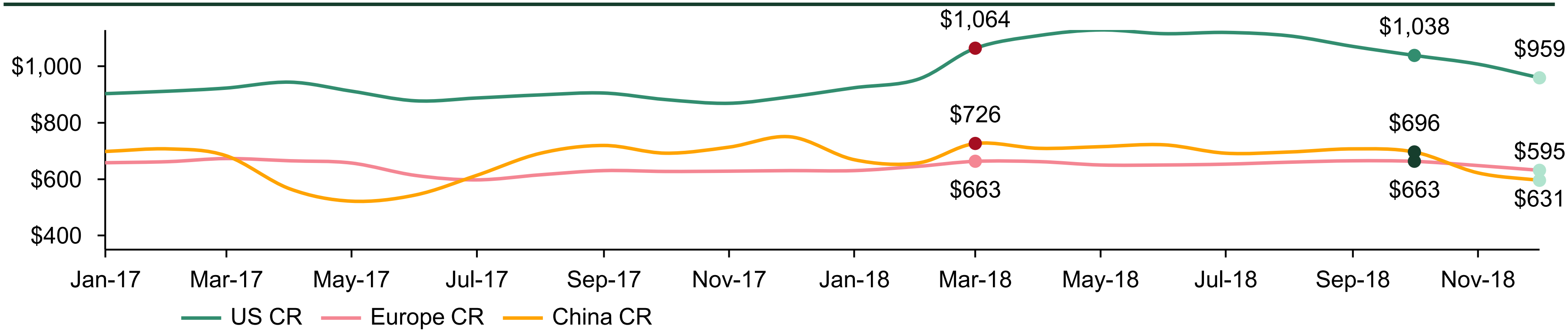


Source: Metal News CN

● Last Year ● October Data ● Most recent data

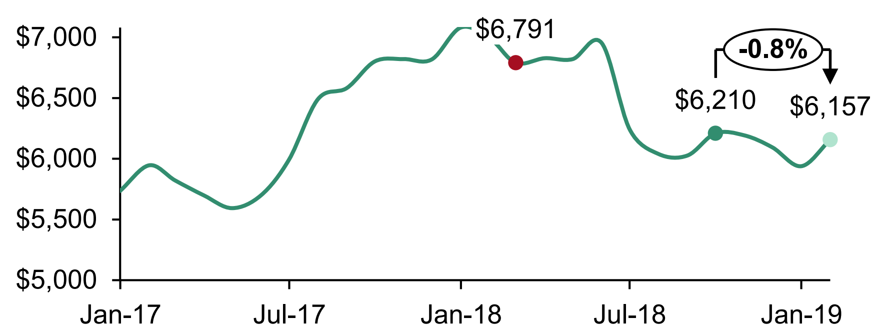
Electric Motor costs peaked in the months from January 2018 to July 2018, but then started to decrease.

Silicon Steel – Cold Rolled
USD/MT



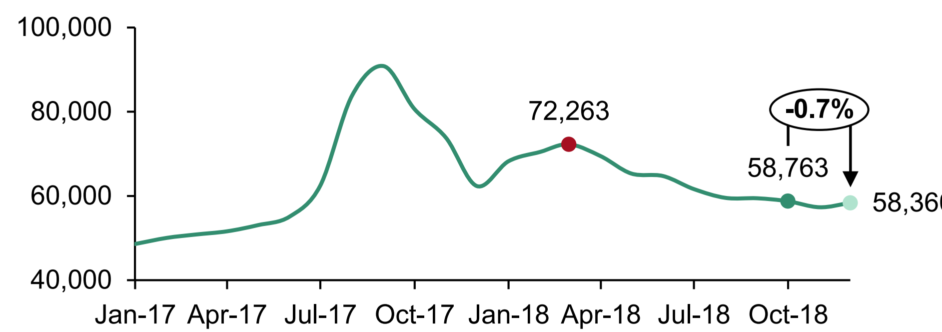
Source: CRU

Copper
USD/MT



Source: LME

Neodymium Costs
USD/MT



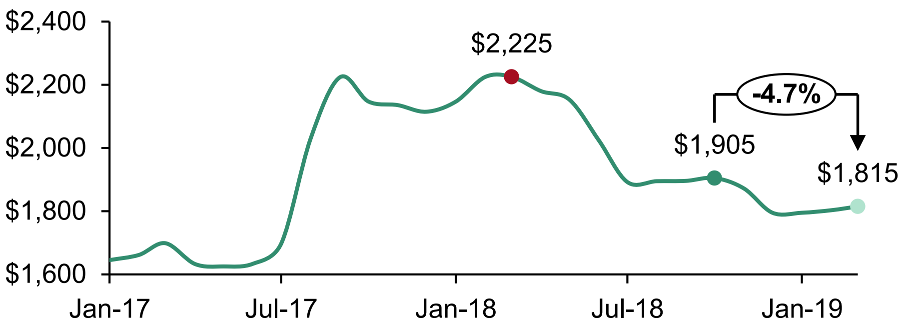
Source: SMM

Last Year
October Data
Most recent data

APPLIED VALUE

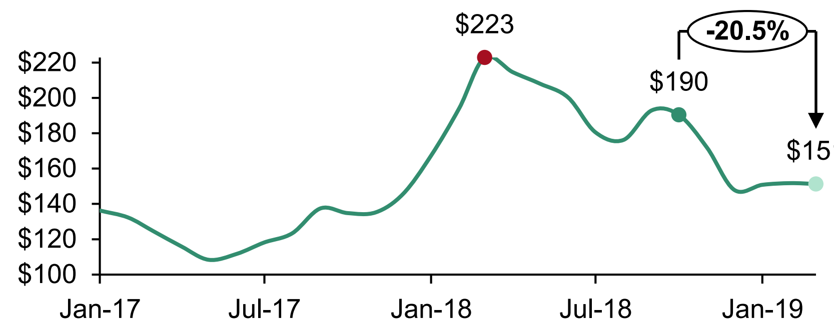
Prices have been declining since 2018 for raw materials used in displays and sensors.

#441 Silicon
USD/MT



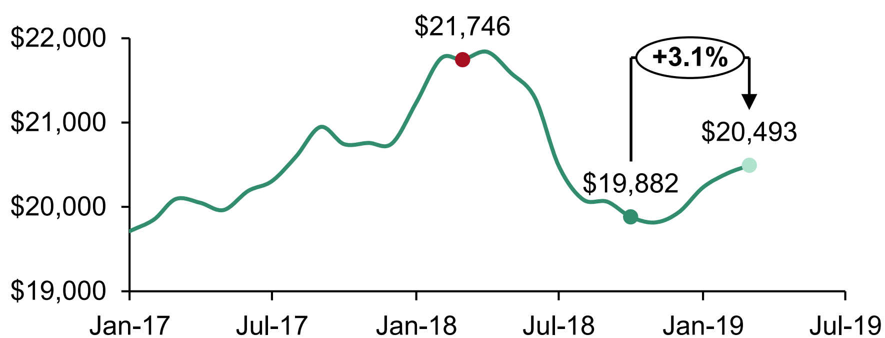
Source: SMM

Gallium
USD/MT



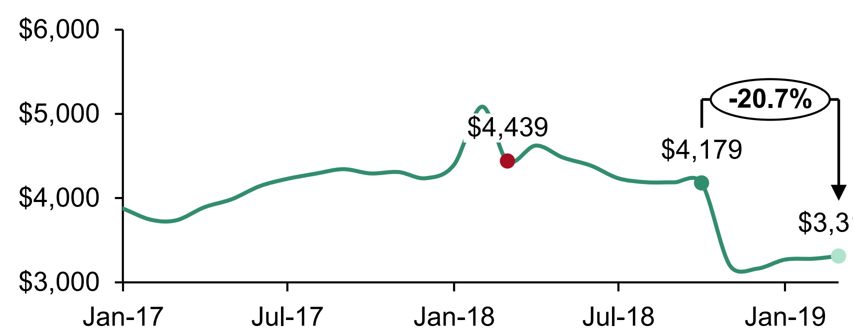
Source: SMM

Stannic Oxide
USD/MT



Source: SMM

Polyethylene terephthalate (PET): Dupont Rynite FR530
USD/MT

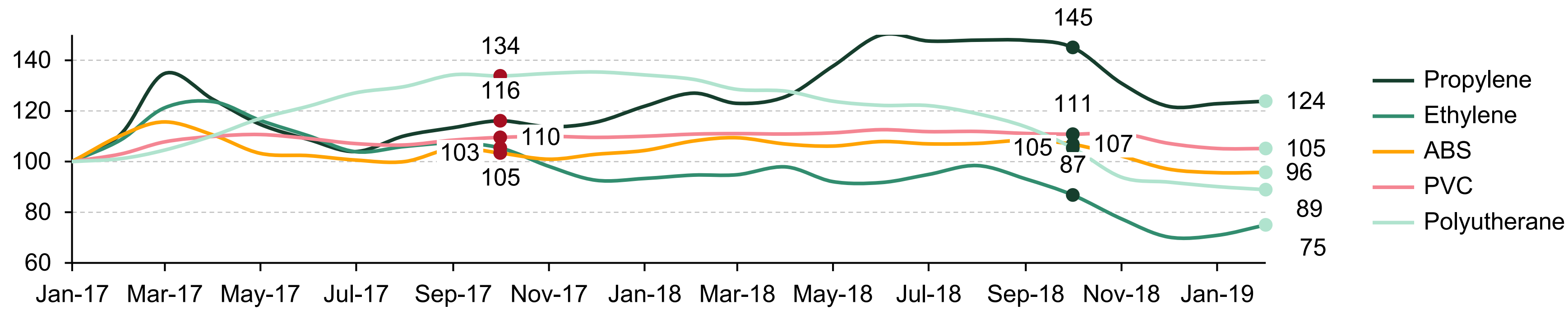


Source: www.soliao.com

● Last Year ● October Data ● Most recent data

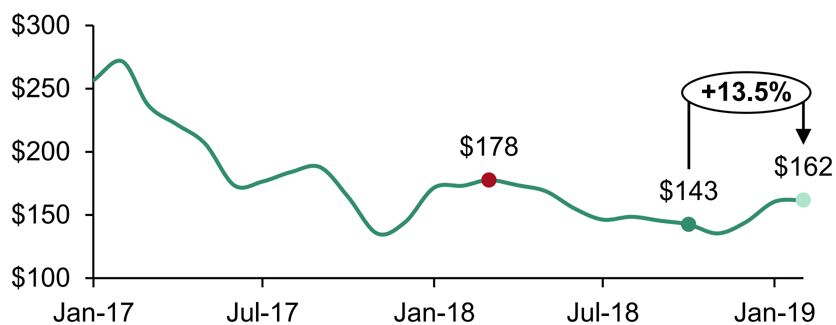
Plastics costs have flattened out in early 2019, following a decline through Q3 2018, putting most prices below 2017 levels.

Plastic Costs
Indexed



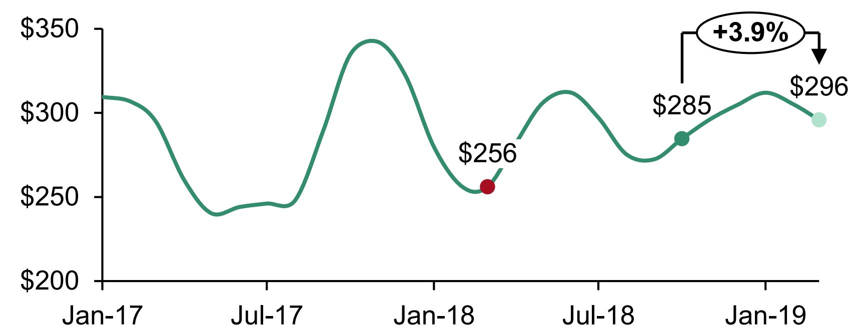
Source: Capital IQ

Rubber – RSS3
USD/MT



Source: Capital IQ SICOM

Glass – Soda Ash
USD/MT



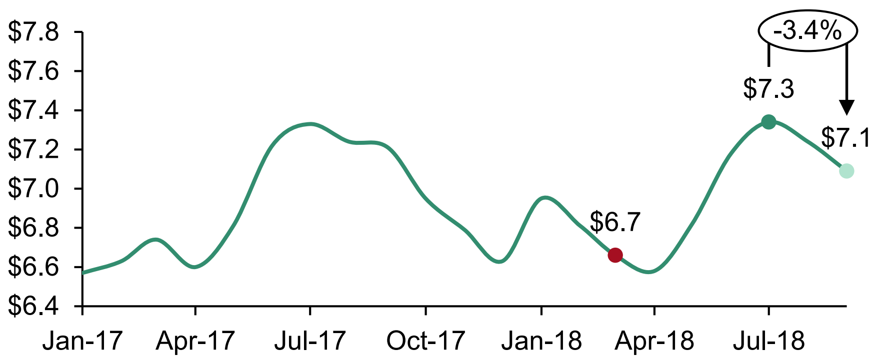
Source: Soda.100ppi.com

Last Year October Data Most recent data

APPLIED VALUE

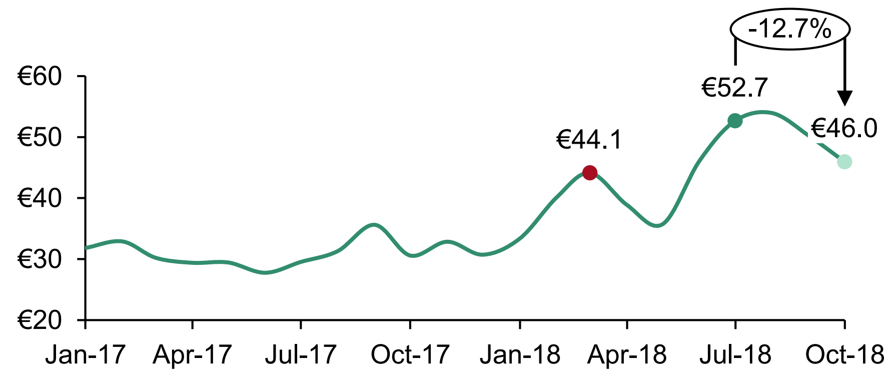
Indirect costs of manufacturing turned downwards in Q4, but remain up relative to where they were at the beginning of the year.

Electricity US
US Cents/KWH



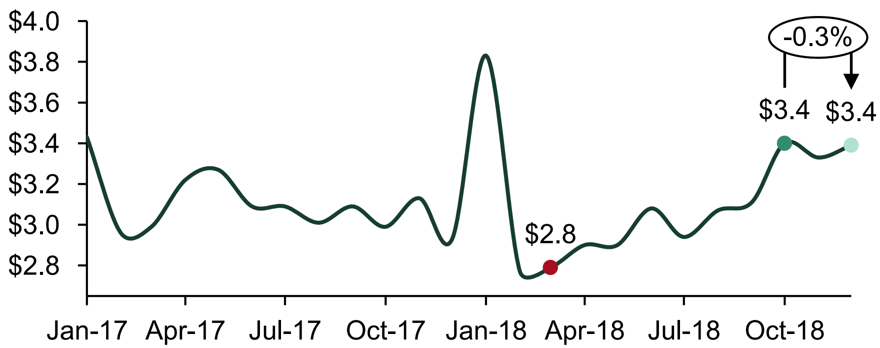
Source: US Energy Information Administration (Industry retail price)

Electricity Europe
EUR/KWH



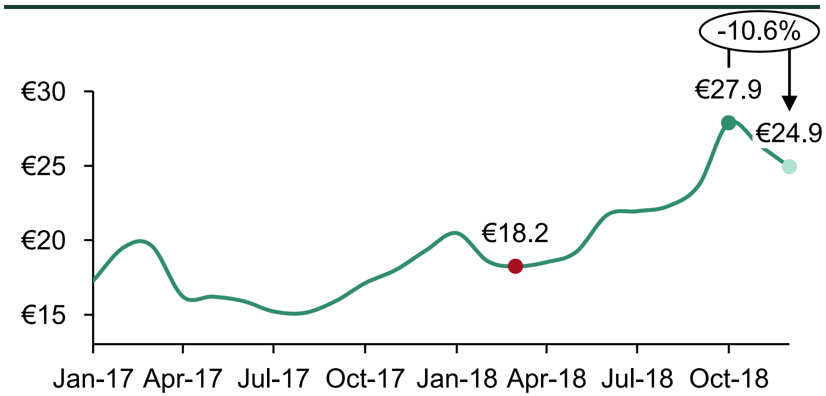
Source: EEX (KWK-Index Germany), Nordpool

Natural Gas US
USD/mmBtu



Source: EIA (Natural Gas spot price at the Henry Hub terminal in Louisiana)

Natural Gas Germany
EUR/MWH



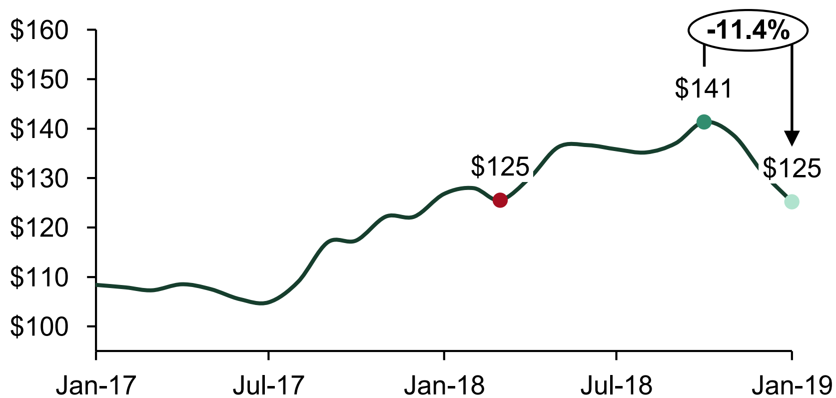
Source: EEX (EGIX Germany)

● Last Year ● October Data ● Most recent data

APPLIED VALUE

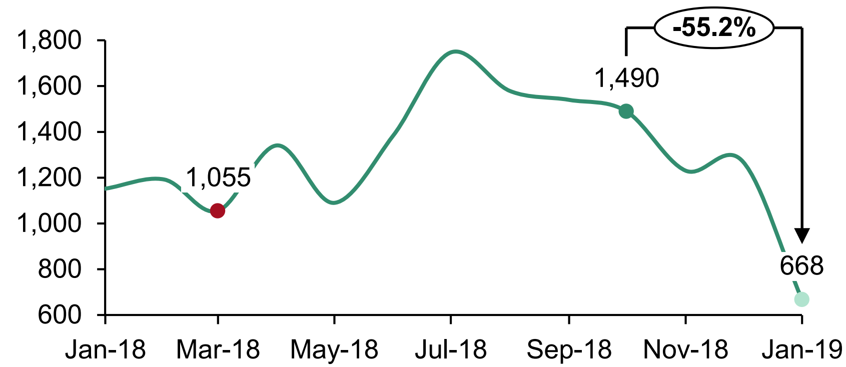
Trade Disputes have caused the costs associated with Auto related manufacturing import/export to fluctuate more than in the past.

US # 2 Diesel
$ per bbl.



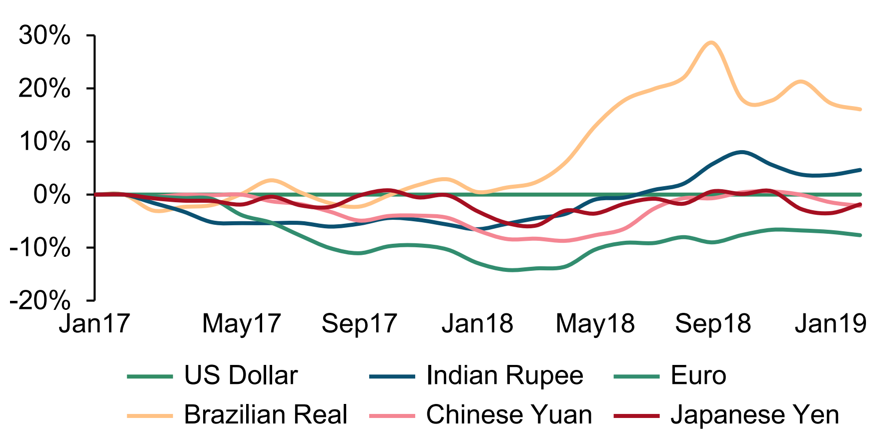
Source: EIA

BDI - Shipping

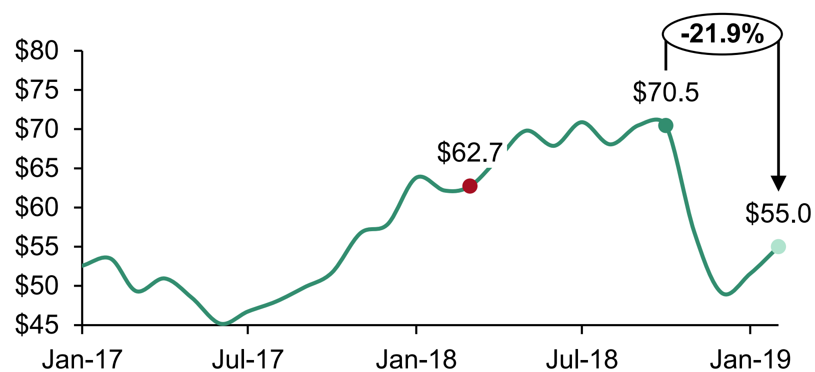


Source: Investing.com

Currency appreciation against USD



WTI Crude
$ per bbl.



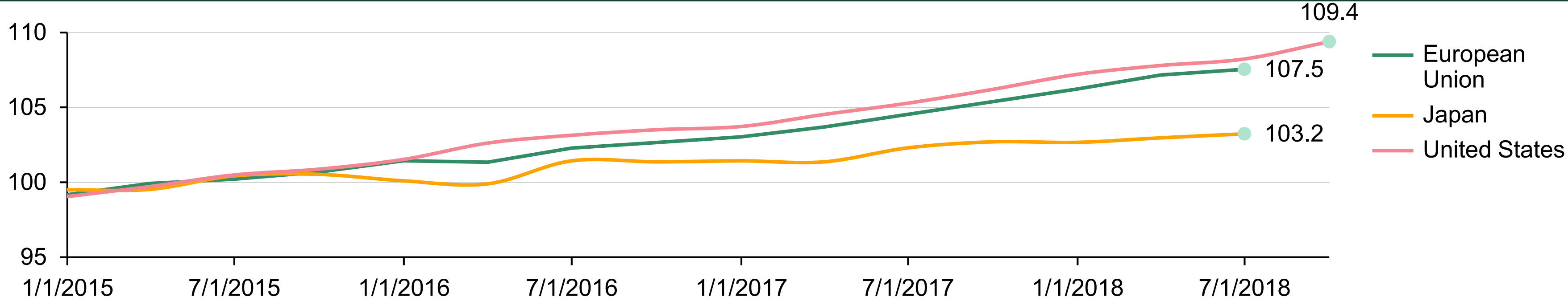
Source: Capital IQ

Source: S&P Capital IQ. ● Last Year ● October Data ● Most recent data

APPLIED VALUE

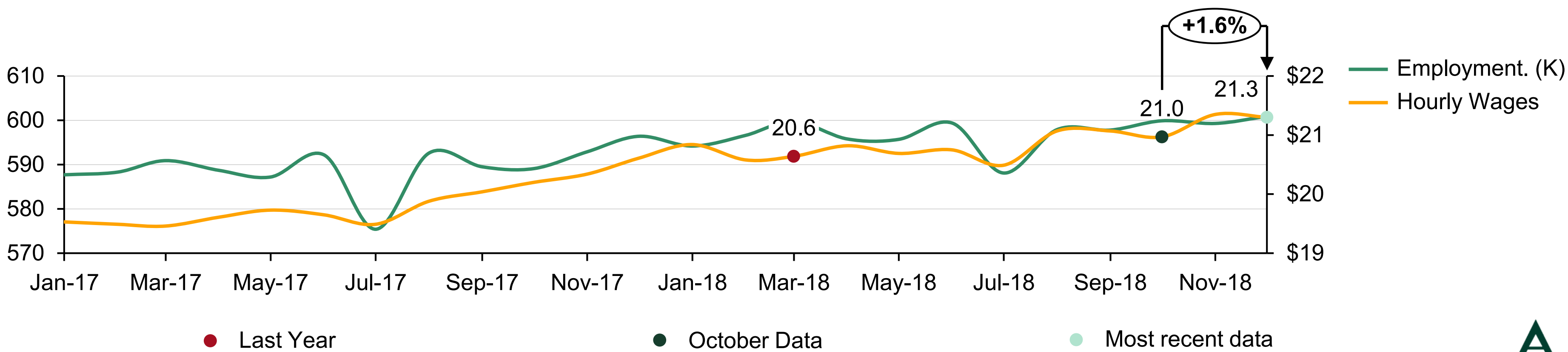
Both Auto industry employment and hourly wage rate have risen over LTM, in the US, as the job market and the industry are strong.

MEI Manufacturing Pay Index
Index 2015 pay rates = 100



Source: OECD.stat

USA Motor Vehicle Parts Manufacturing – Tier One
Employment # in (K) & wages in USD/Hour



Source: Bureau of Labor & Statistics

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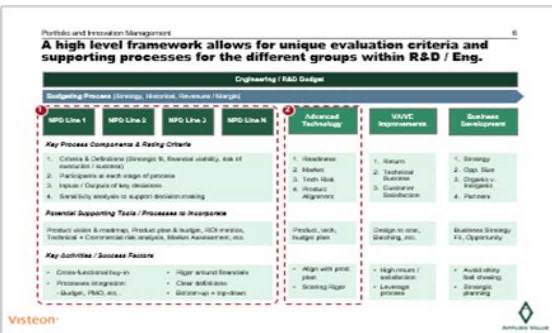
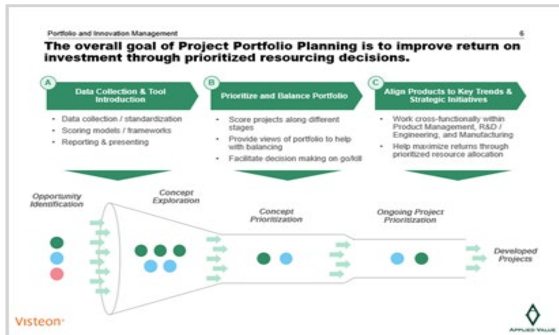
As Automotive OEMs push for higher tech vehicles and invest in Autonomous and EV, Tier 1s must also focus on Innovation.

People	Processes	Philosophies
Organization & Delivery	Data & Transparency	Cultural Enablers

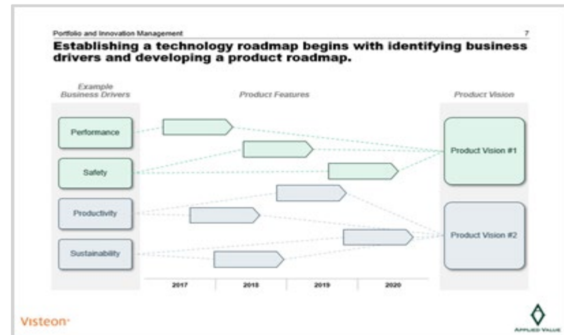
Role of the Innovation in Tier 1's:



Dedicated Technology organization with defined budget and incentives



Clear Criteria and data sources to feed innovation process



Efficient use of existing resources through incentives and automation

Applied Value has the knowledge and know-how to support organizations innovate _Faster_ and more _Efficiently_.

APPLIED VALUE

Innovation Efficiency and Effectiveness is achieved through Portfolio Management, Development Speed, and a Strong Delivery Model.

Industry Macro Trends

Innovation Efficiency & Effectiveness

Advanced Technologies

Product Development

Product Support & VA/VE

Portfolio Management

- Tools for increased data transparency and visibility
- Balance between financial reward, risk, and strategic impact
- Alignment between technology and product roadmap

Development Speed

- Process simplicity to reduce overloading, variability & waste
- Clear communication and low complexity of product features
- Structured, Flexible and up-front capacity planning

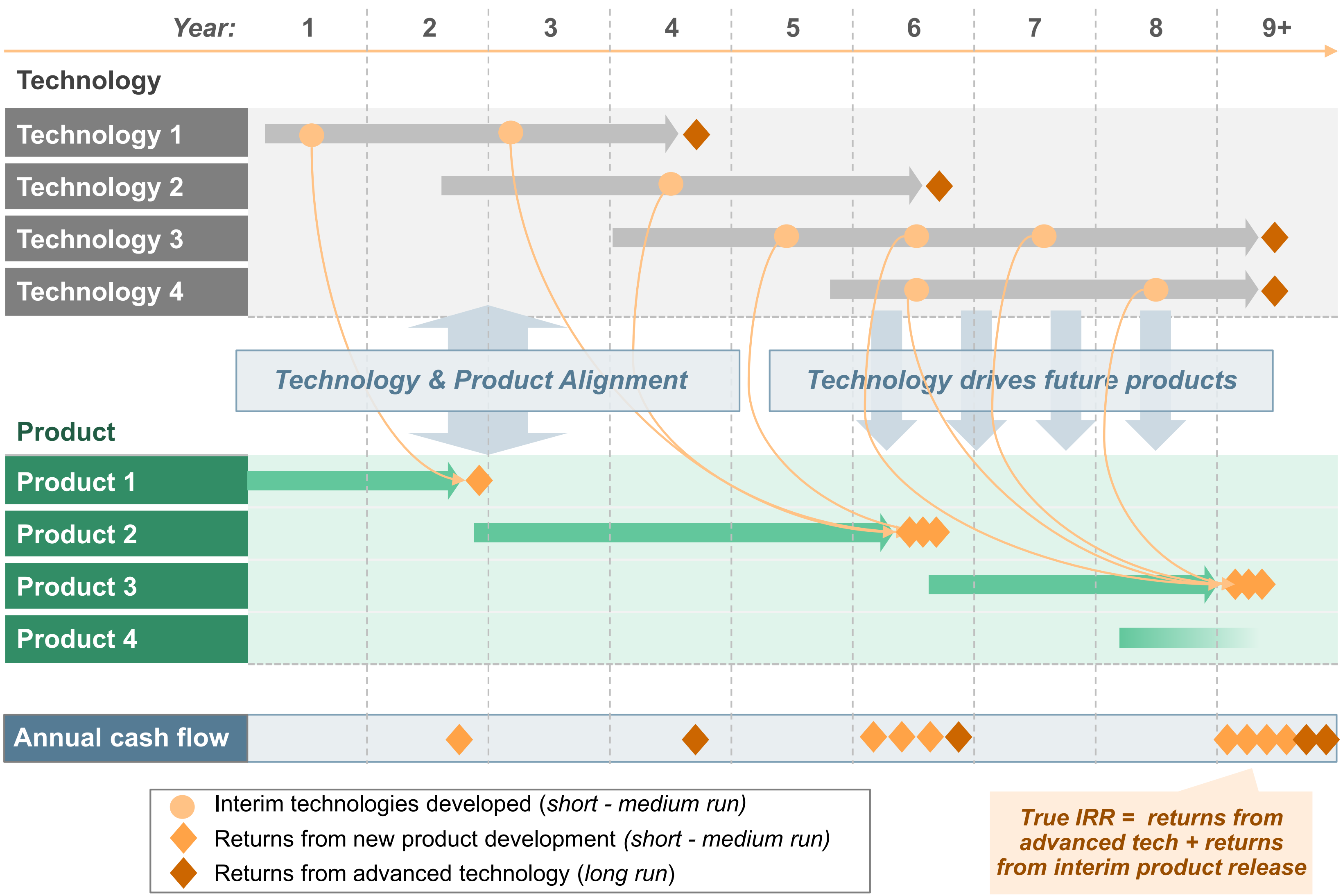
Delivery Model

- Site footprint for optimal resourcing and cost structure
- Labor flexibility for non-core areas of development
- Cost, Innovation and Efficiency KPI tracking and monitoring

R&D Strategy

R&D Organization

Advanced tech is crucial to incorporate into the portfolio mgmt. and must be aligned to product roadmaps to understand financial impact.



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

APPLIED VALUE GROUP

From our origin as an internal consultancy within the ***Stenbeck Group…***

Industries of Expertise

- *Private Equity*
- *Chemicals & Process*
- *Industrials & Engineering*
- *Consumer Goods*
- *Telecom & Media*
- *Automotive*

…today, an ***independent, hands-on consultancy***

Lean Growth Principles

Investments	Management Consulting	Social Responsibility

Selected portfolio companies

HUMAN CARE, COSMOSID, rivermeadow, Bake My Day, Division 5 Inc Steel Fabrication, Soderfors Steel, flexenclosure

APPLIED VALUE

HAND IN HAND, Straight Ahead Ministries, Exodus

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

APPLIED VALUE

Applied Value's 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

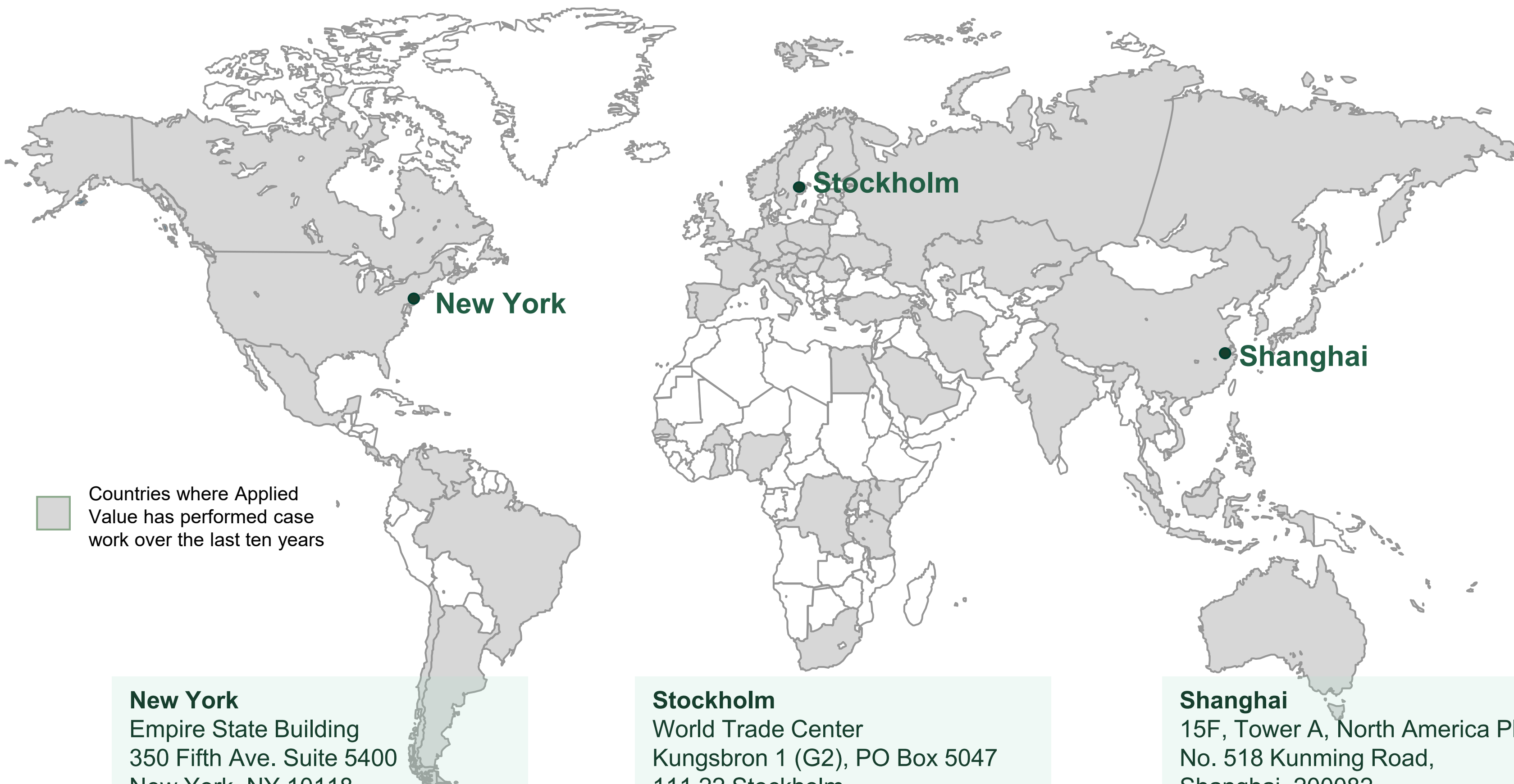
Gross Margin Improvement
Pricing, Sourcing, VA/VE, Supply Chain, Operations

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 supports clients and investments globally from three offices.



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