

# Global Auto & Truck Markets

## Road Map to the Global Auto & Truck Markets

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**David Leiker, CFA**  
Senior Analyst  
dleiker@rwbaird.com  
414.298.7535

**Erin Welcenbach**  
Research Associate  
ewelcenbach@rwbaird.com  
414.298.1947

Please refer to Appendix:  
Important Disclosures and Analyst Certification



# A Trusted Equity Capital Markets Partner

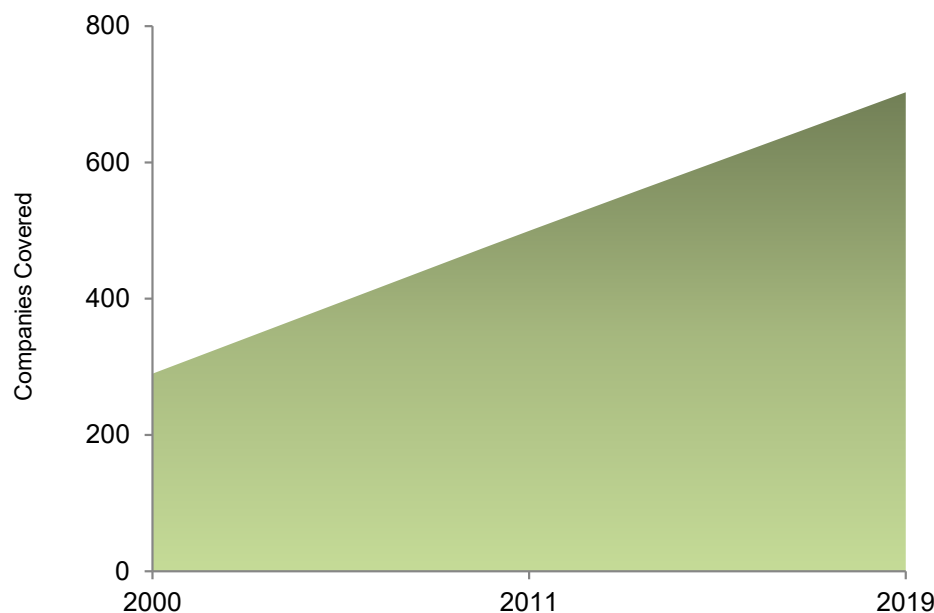
## Quality

- No. 1 “Important Small-/Mid-Cap Research Advisory Firm”<sup>1</sup>
- Ranked #16 among *Fortune* 100 Best Companies to Work For®



## Commitment

- Coverage has grown 30%+, with the addition of nearly 170 new companies, since the beginning of 2009
- Baird expanded coverage by more than 250% since 2000



## Premiere Corporate Access

- **20,000+** annual connections bringing together institutional investors and corporate managements
- More than **400** NDRs scheduled annually with large-, mid- and small-cap companies
- **500+** high quality companies participate annually in incremental corporate access events (HQ visits, facility tours, sector days, conference calls, dinners and more).
- **3 highly ranked** conferences with nearly 50 years of success hosting annually

<sup>1</sup>Greenwich Associates North American Equity Investors – U.S. Small-/Mid-Cap Funds and U.S. Equities Sales, Corporate Access & Research, May 2019. Surveys conducted with 100 small-cap and mid-cap fund managers and 169 fund managers and 269 traders, respectively. Rankings for qualitative metrics based on leading research firms in surveys.

# Current Thoughts

## Automotive Suppliers

- Significant downside to global auto build in Q1, but magnitude not yet known. See potential COVID-19 spillover effects into Europe and North America.
- Global auto demand -12% yoy in January
  - U.S.: SAAR +8% yoy in Feb (and -1% QTD)
  - Europe: Demand -7% in Feb (and -7% QTD)
  - China: Wholesale sales -20% yoy in Jan but -86% yoy in Feb (-45% QTD); build -27% in Jan as COVID-19 creates a massive hit to demand
- Secular trends and growth (CAGR through 2025)
  - 8% - Safety - ADAS/AD 16%; Passive 3%
  - 7% - Infotainment, displays and electronics
  - 6% - Global fuel efficiency standards
  - 4% - Emerging markets (India, Brazil, ASEAN, China)
- Secular growth: APTV, BWA/DLP, LFUS, TEL, VC
- Cash flow: LEA, MEI
- Turnaround: ADNT, ALV, SNA, VNE

### Baird's Value-Add

- Extensive industry experience – sell-side analyst for more than 30 years
- Excellent company/industry contacts
- Proprietary analysis of monthly global sales/build by region with consistent presentation
- Best-in-class revenue/earnings models – strong focus on revenue build-up, valuation and ROIC
- Value-add company visits, field trips and trade show tours in U.S., Europe and China

## Commercial Vehicles

- See potential for 2H-20 order improvement, but COVID-19 creates incremental risk to recovery if the U.S. economic backdrop worsens. However, CV stocks relatively less (directly) exposed to a China slowdown.
- Demand environment down 1% yoy in Jan
  - NA: Class 8 orders -16% yoy in Feb (and -5% QTD)
  - Europe: Registrations -17% yoy in Jan
  - China: Sales +10% yoy in Jan
  - Brazil: Demand -8% yoy in Feb; -3% QTD
- Secular trends and growth (CAGR through 2025)
  - 5% - Higher safety being regulated worldwide
  - 4% - Global fuel efficiency standards
  - 3% - Emerging markets: India, China, Brazil
- Secular growth: CMI
- Cash flow: ALSN
- Turnaround/transformation: MOD
- Inflection: PCAR, VOLV.B-SE
- Special situation: NAV, WBC

# Automotive Markets

## Current Trends – Global Demand Indicators Solid

### End-Market Trends – Q1

Current Baird Est. for Q1 Global Auto Build: -2%

#### Auto End-Markets

	Year-over-Year % Chg.							
	Q2	Q3	Q4	Actuals			QTD Actual	Initial Q1E
				Jan	Feb	Mar		
North America								
US Sales	(1.3%)	0.5%	(2.2%)	(0.6%)	8.4%	(0.6%)	(2.0%)	
NA Prod.	(2.2%)	(1.0%)	(9.7%)	(2.9%)		(2.9%)	0.8%	
Europe (E27)								
Registrations	(3.6%)	1.8%	10.4%	(7.6%)	(7.0%)	(7.3%)	(8.0%)	
Germany	0.9%	6.8%	13.7%	(7.3%)		(7.3%)	-	
Production	(6.6%)	2.1%	0.5%	(9.0%)		(9.0%)	(5.0%)	
Germany	(13.0%)	(0.2%)	(6.6%)	(7.0%)		(7.0%)	(10.0%)	
Asia								
China Sales	(12.0%)	(6.0%)	(2.8%)	(20.4%)	(86.0%)	(45.0%)	2.0%	
China Prod.	(18.7%)	(6.3%)	2.4%	(26.5%)		(26.5%)	2.0%	
Japan Sales	2.8%	8.1%	(16.2%)	(12.0%)		(12.0%)	-	
Japan Prod.	4.0%	4.2%	(9.9%)			(7.5%)	-	
Korea Sales	(0.9%)	(1.1%)	0.2%	(14.5%)		(14.5%)	-	
Korea Prod.	2.9%	(0.3%)	(8.0%)	(28.6%)		(28.6%)	(3.0%)	
Other Regions								
Brazil Sales	11.6%	5.3%	4.8%	(3.4%)	1.6%	(0.9%)	0.0%	
Brazil Prod.	5.2%	2.8%	0.4%	(3.8%)	(21.7%)	(19.9%)	2.0%	
India Sales	(16.5%)	(27.9%)	(1.2%)	(4.6%)		(4.6%)	-	
Global - NA, Europe, China								
Global Sales	(6.5%)	(2.1%)	0.1%	(12.3%)		(12.3%)	(2.9%)	
Global Prod.	(10.1%)	(2.3%)	(1.4%)	(14.7%)		(14.7%)	(1.6%)	
Currency (versus USD)								
Euro	(5.8%)	(4.4%)	(3.0%)	(2.8%)	(3.8%)	(3.0%)	(1.2%)	
Br. Pound	(5.5%)	(5.4%)	(0.0%)	1.5%	(0.4%)	0.3%	1.8%	
Yen	(0.7%)	3.9%	3.8%	(0.3%)	0.4%	0.6%	1.3%	
Renminbi	(6.5%)	(3.0%)	(1.8%)	(1.9%)	(3.7%)	(2.8%)	(3.1%)	
Peso	1.3%	(2.4%)	2.7%	2.0%	1.8%	1.4%	1.7%	

Source: Ward's, JD Power, ACEA, CAR, ANFAVEA, Baird Estimates

\*QTD global figures includes all known sales and production data (for NA, EU and China)

### Revenue Breakdown by Company – Cal-2019

	Adient <sup>1</sup>	Applv	Autoliv	BorgWarner	Delphi Technologies	Gentex	Lear Corporation	Littelfuse	Melexis Electronics	TE Connectivity	Visteon Corporation	Average	Share of Global Market
<b>Markets</b>													
North America	33%	38%	34%	33%	26%	39%	37%	33%	64%	31%	32%	23%	35%
Europe	27%	33%	29%	37%	45%	16%	39%	23%	20%	36%	33%	32%	31%
Asia	40%	27%	37%	25%	26%	20%	20%	44%	16%	33%	35%	43%	31%
China (local)	34%	20%	18%	17%	18%	8%	13%	28%	11%	18%	17%	17%	18%
South America	0%	2%	-	-	-	-	4%	0%	0%	-	-	2%	1%
Other	0%	0%	0%	5%	3%	25%	0%	0%	0%	-	0%	0%	3%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Top Customers</b>													
General Motors	6%	9%	5%	4%	6%	11%	18%	-	35%	-	6%	9%	9%
Ford	11%	8%	7%	15%	4%	8%	14%	-	12%	-	11%	22%	6%
Fiat/Chrysler	10%	9%	8%	5%	2%	-	8%	-	-	-	5%	-	7%
Volkswagen	12%	9%	10%	11%	11%	14%	11%	-	-	-	10%	11%	12%
PSA	2%	4%	-	-	6%	-	-	-	-	-	-	4%	4%
Renault-Nissan	11%	-	16%	2%	-	-	3%	-	-	-	7%	13%	11%
BMW	5%	-	4%	2%	-	-	7%	-	-	-	4%	8%	3%
Daimler	7%	4%	4%	4%	6%	9%	11%	-	-	-	16%	6%	7%
Toyota	8%	2%	7%	-	-	13%	-	-	-	-	-	8%	11%
Hyundai/Kia	4%	-	8%	5%	6%	-	-	-	-	-	10%	-	7%
Honda	6%	-	10%	-	-	-	-	-	-	-	23%	4%	11%
Other Auto	18%	41%	21%	35%	18%	42%	28%	-	26%	-	18%	28%	22%
<b>Total Auto</b>	<b>100%</b>	<b>86%</b>	<b>100%</b>	<b>83%</b>	<b>59%</b>	<b>97%</b>	<b>100%</b>	<b>28%</b>	<b>73%</b>	<b>49%</b>	<b>100%</b>	<b>100%</b>	<b>81%</b>
Aftermarket	0%	0%	0%	4%	18%	0%	0%	0%	0%	0%	0%	0%	2%
Non-Auto	0%	14%	0%	13%	23%	3%	0%	72%	27%	51%	0%	0%	17%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

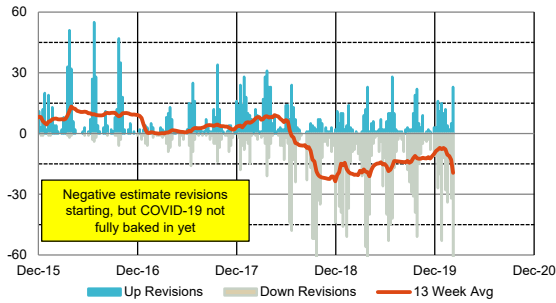
<sup>1</sup>Non-consolidated revenues (including JVs)

Source: Company filings, FactSet, Baird estimates

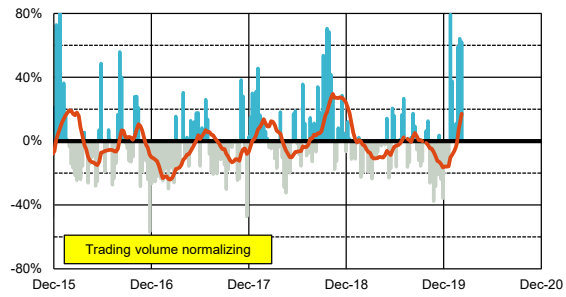
# Automotive Markets Investor Sentiment

BAIRD

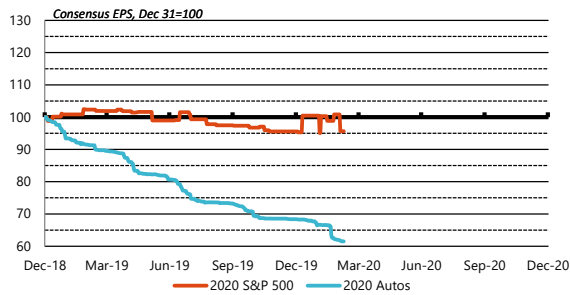
Weekly Estimate Revisions



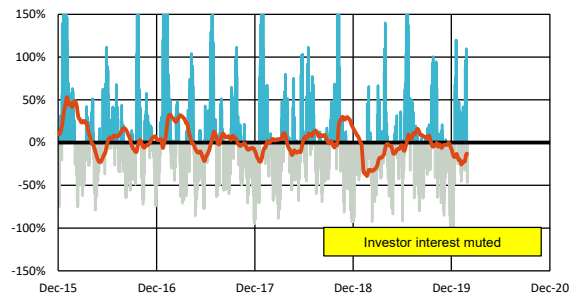
Weekly Trading Volume (Percentage of 6-Month Average)



Change in Consensus Earnings Estimates



7-Day Call Volume versus 13-Week Average

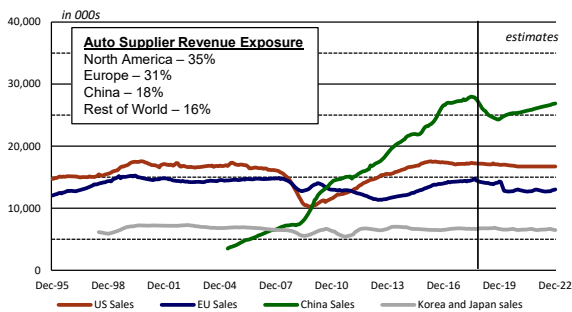


For weekly charts: — 13 Week Avg Source: Automotive News, Baird Estimates, FactSet

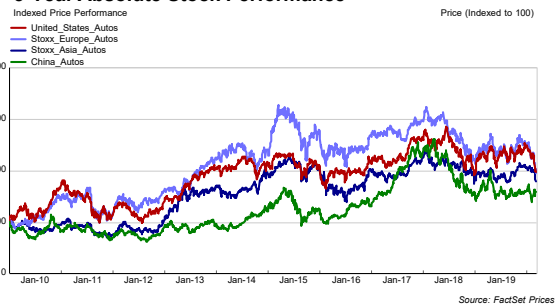
# Automotive Global Market Summary

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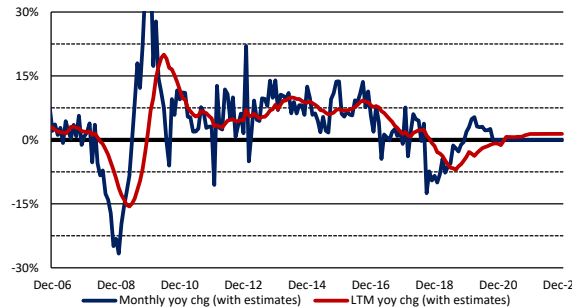
Global Automotive Sales - By End Market (LTM)



5-Year Absolute Stock Performance



Global Automotive Sales - Yr/Yr Growth



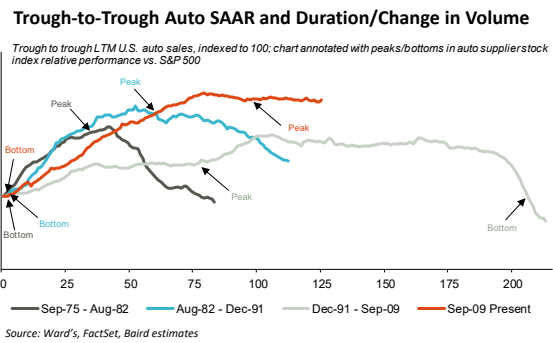
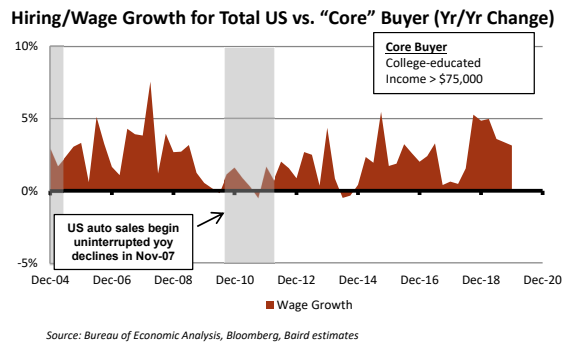
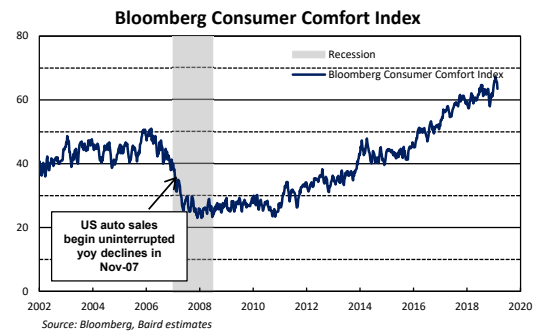
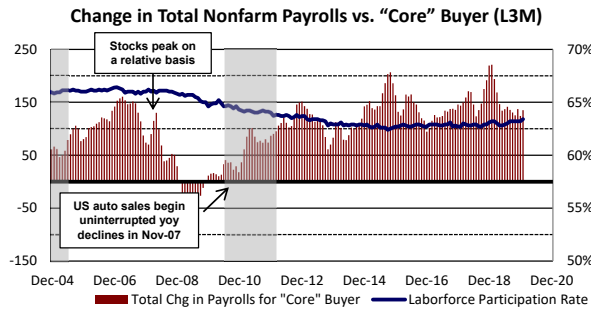
Price to Earnings - NTM (Mean)



# Automotive

## U.S. Demand Drivers – Steady Demand

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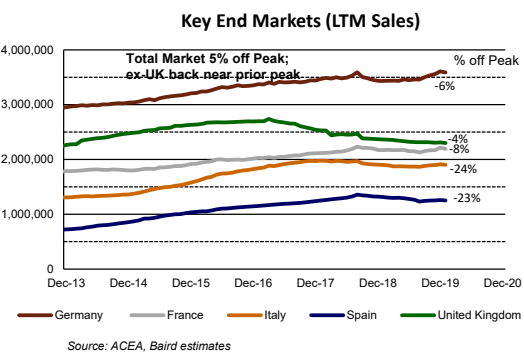
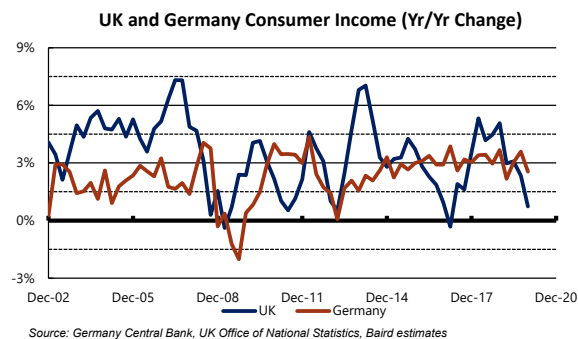
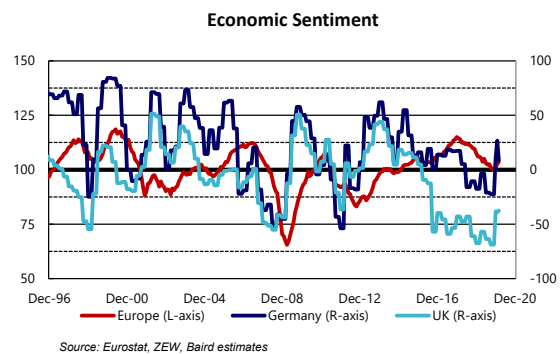
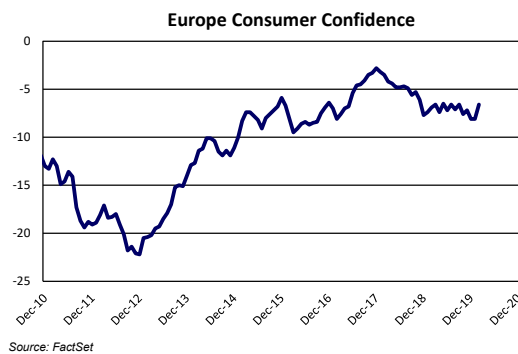


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## Europe Demand Drivers – Indicators Remain Positive

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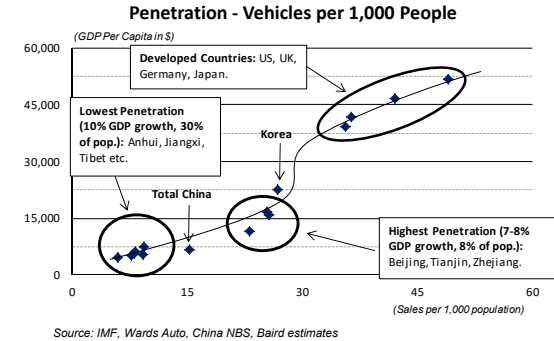
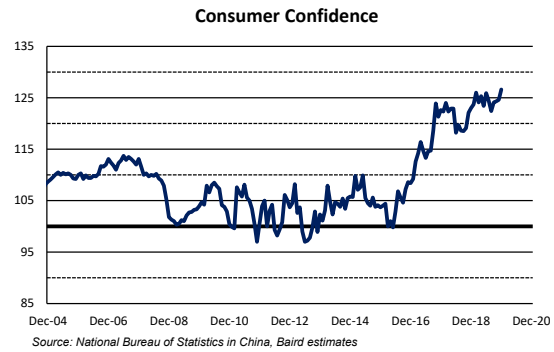
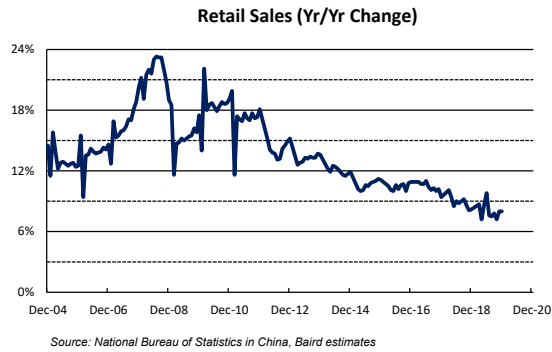


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## China Demand Drivers – Underlying Metrics Mixed

BAIRD

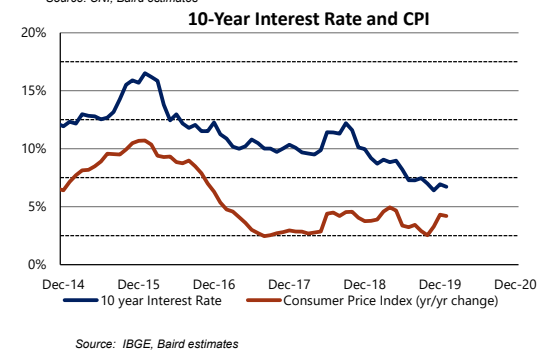
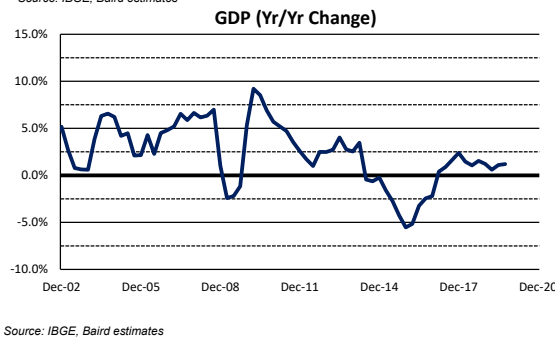
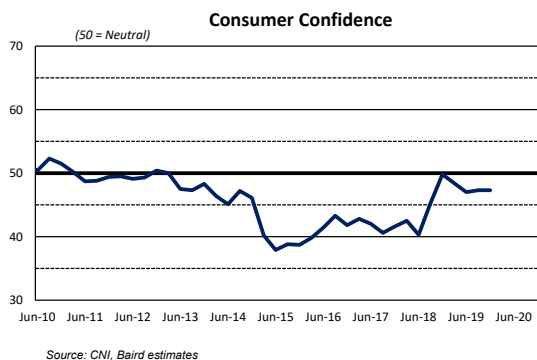
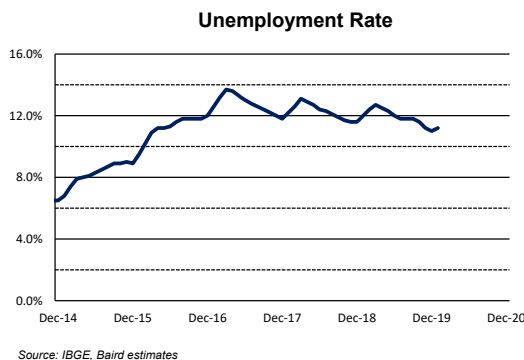


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# Automotive

## Brazil Demand Drivers – Bottoming

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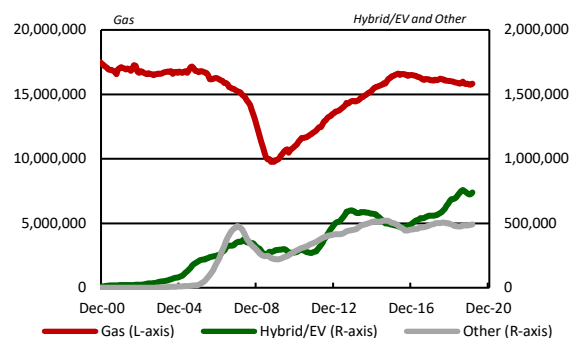


## U.S. Light Vehicle Sales - February 2020

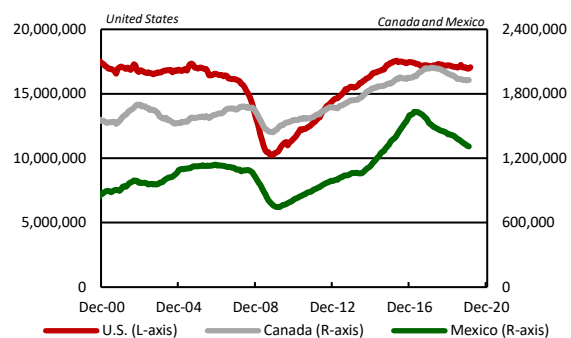
	U.S. Monthly Sales			
	SAAR	Month	L3M	YTD
March	17.2	6%	2%	2%
April	17.2	-5%	0%	0%
May	17.2	5%	3%	1%
June	17.2	5%	2%	2%
July	16.7	-3%	3%	1%
August	16.7	1%	1%	1%
September	17.4	-6%	-3%	0%
October	17.4	1%	-2%	0%
November	17.4	0%	-2%	0%
December	17.5	1%	1%	0%
January	16.7	-2%	0%	-2%
February	16.5	-3%	-1%	-2%
March	17.4	-2%	-2%	-2%
April	16.5	-2%	-2%	-2%
May	17.4	0%	-2%	-2%
June	17.2	-2%	-1%	-2%
July	16.8	2%	0%	-1%
August	17.0	11%	4%	0%
September	17.2	-11%	1%	-1%
October	16.5	-2%	-1%	-1%
November	17.1	2%	-4%	-1%
December	16.7	-6%	-2%	-1%
January	16.8	0%	-2%	0%
February	16.8	8%	0%	4%
YTD SAAR	16.8	-	-	-
Q1 est.	-	-	-2%	-

\*Our SAAR excludes some heavy-duty pickups that are included in other industry SAAR figures

### North America - Sales by Powertrain



### North America - Sales by Country



Source: Ward's Automotive, Baird estimates

\*Platform Codes on Last Page

David Leiker, CFA

Sr. Research Analyst

414.298.7535

[dleiker@rwbaird.com](mailto:dleiker@rwbaird.com)

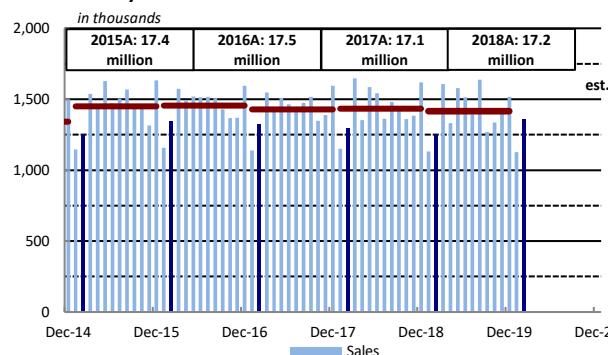
Erin Welcenbach

Sr. Research Associate

414.298.1947

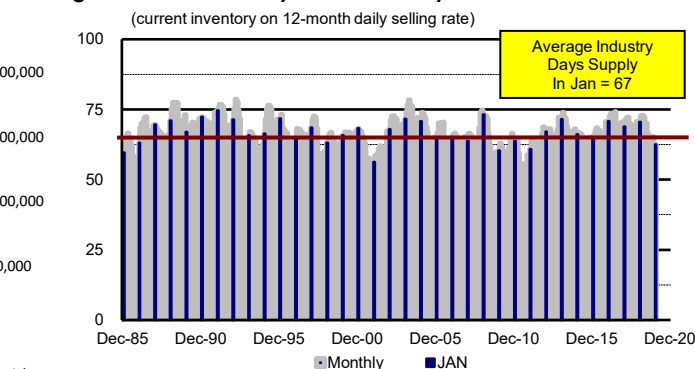
[ewelcenbach@rwbaird.com](mailto:ewelcenbach@rwbaird.com)

### U.S. Monthly Sales



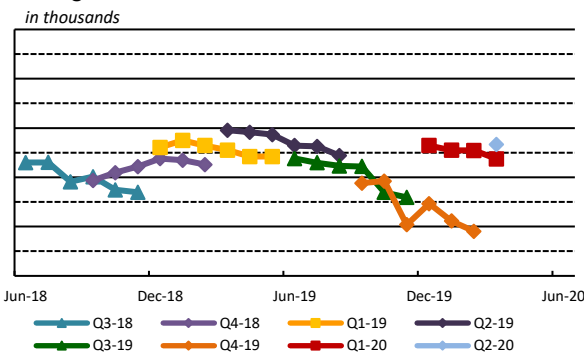
Source: Ward's Automotive, Baird estimates

### U.S. Light Vehicle Inventory - Total Industry



Source: Ward's Automotive, Baird estimates

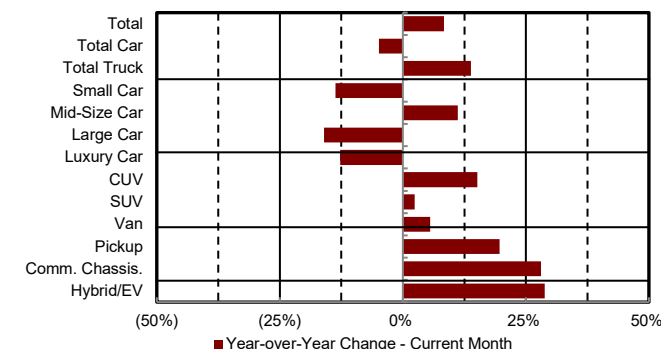
### Change in North American Production Schedules



Source: Ward's Automotive, Baird estimates

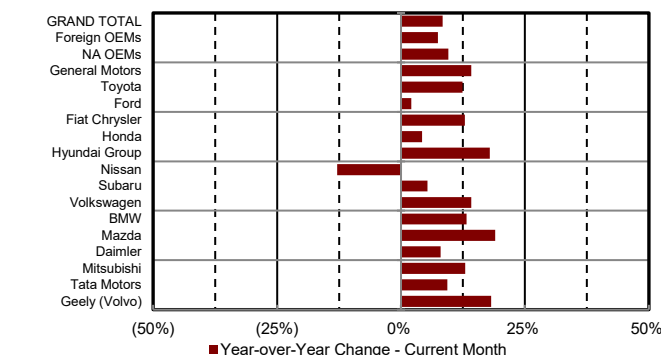
March 4, 2020

### Change in Sales by Segment - Current Month



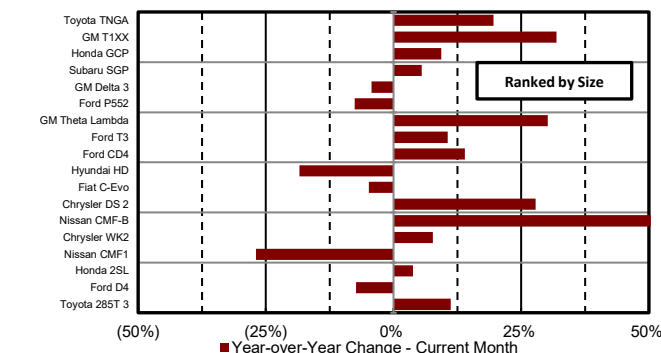
Source: Ward's Automotive, Baird estimates

### Change in Sales by OEM - Current Month



Source: Ward's Automotive, Baird estimates

### Change in Sales by Platform - Current Month\*



Source: Ward's Automotive, Baird estimates

Please Refer to Appendix

for Important Disclosures and Analyst Certification

## European Passenger Vehicle Registrations - January 2020

(EU14+EFTA+UK Passenger Vehicles Only)

	Year-over-Year % Change		
	Month	L3M	YTD
January	5%	2%	5%
February	4%	1%	5%
March	-6%	0%	0%
April	9%	1%	2%
May	0%	0%	1%
June	5%	4%	2%
July	9%	4%	3%
August	27%	11%	5%
September	-23%	0%	1%
October	-7%	-6%	1%
November	-8%	-14%	0%
December	-9%	-8%	-1%
January	-5%	-5%	-5%
February	-2%	-5%	-3%
March	-4%	-4%	-4%
April	-1%	-2%	-3%
May	-1%	-2%	-2%
June	-8%	-4%	-4%
July	0%	-3%	-3%
August	-8%	-6%	-4%
September	14%	2%	-2%
October	8%	5%	-1%
November	4%	9%	-1%
December	21%	10%	1%
January	-8%	5%	-8%
Q1 est.	-	-8%	-

Source: ACEA, Baird estimates

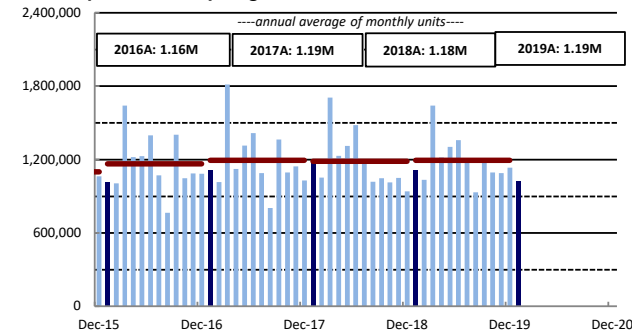
### Change in Registrations - by Country

	2017	2018	2019	YTD Chg
<b>Top 5 Markets</b>				
Germany	2.7%	-0.2%	5.0%	-7.3%
United Kingdom	-5.7%	-6.8%	-2.4%	-7.3%
France	4.7%	3.0%	1.9%	-13.4%
Italy	8.0%	-3.1%	0.1%	-5.9%
Spain	7.7%	7.0%	-4.8%	-7.6%
<b>Total</b>	<b>2.4%</b>	<b>-0.8%</b>	<b>0.8%</b>	<b>-8.3%</b>
<b>Other Major Markets</b>				
Belgium	1.3%	0.6%	0.1%	1.5%
Netherlands	8.5%	7.1%	6.1%	-6.1%
Austria	7.2%	-3.5%	-3.4%	-9.1%
Switzerland	-1.0%	-4.6%	3.9%	-10.2%
Sweden	1.9%	-6.8%	7.7%	-18.0%
<b>Total</b>	<b>3.5%</b>	<b>-1.0%</b>	<b>2.8%</b>	<b>-7.2%</b>
<b>Total W. Europe</b>	<b>2.5%</b>	<b>-0.8%</b>	<b>0.6%</b>	<b>-7.6%</b>

Source: ACEA, Baird estimates

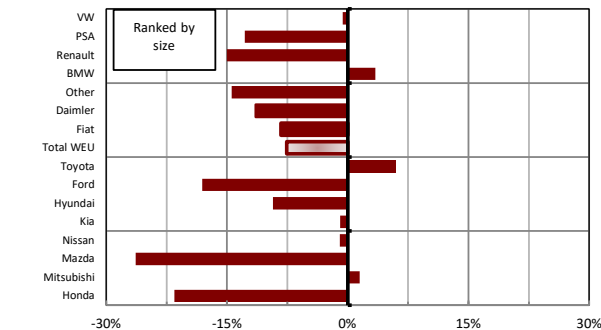
Highlighted Charts are updated for current month

### W. European Monthly Registrations



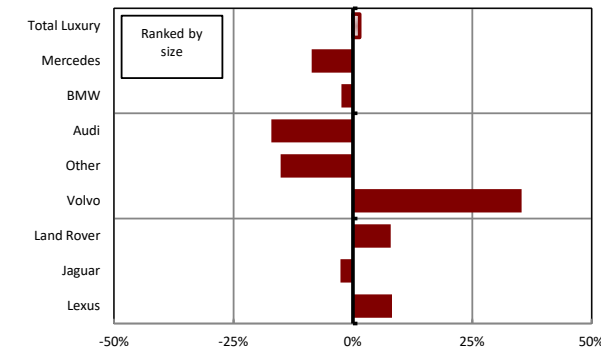
Source: ACEA, Baird estimates

### Change in Registrations by OEM - January



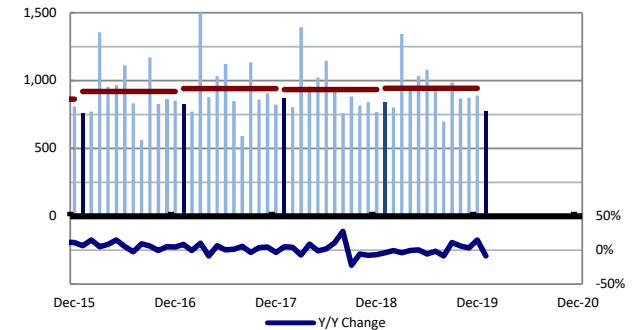
Source: ACEA, Baird estimates

### Change in Premium Registrations - Q1



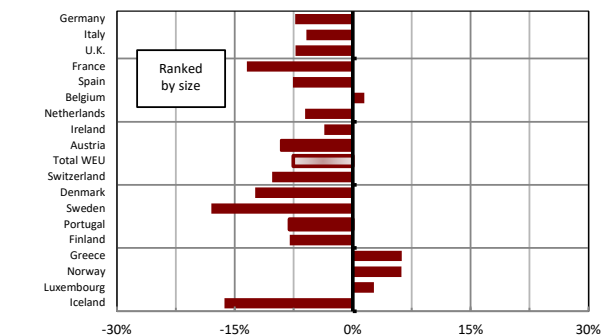
Source: ACEA, Baird estimates

### 5 Largest Markets (Germany, UK, France, Italy, Spain)



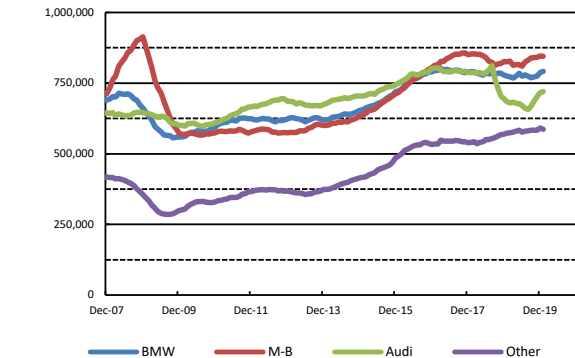
Source: LMC, ACEA, Baird estimates

### Change in Registrations by Country - Current Month



Source: ACEA, Baird estimates

### W. European Premium Registrations - Last Twelve Months



Source: LMC, ACEA, Baird estimates

David Leiker, CFA

Sr. Research Analyst

414.298.7535

[dleiker@rwbaird.com](mailto:dleiker@rwbaird.com)

Erin Welcenbach

Sr. Research Associate

414.298.1947

[ewelcenbach@rwbaird.com](mailto:ewelcenbach@rwbaird.com)

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## China Passenger Vehicle Sales/Production - January 2020

(PV = Car + SUV + MPV/Minivan + Light Truck + Mini Truck)

March 10, 2020

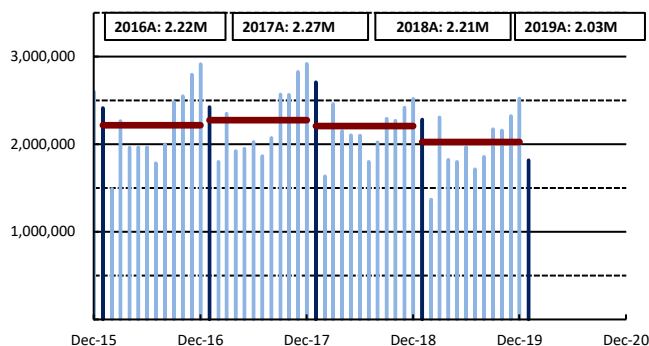
### Passenger Vehicle Sales

Year-over-Year % Change			
	Month	L3M	YTD
January	-16%	-15%	-16%
February	-16%	-15%	-16%
March	-6%	-12%	-12%
April	-15%	-12%	-13%
May	-14%	-12%	-13%
June	-6%	-12%	-12%
July	-5%	-9%	-11%
August	-8%	-6%	-11%
September	-5%	-6%	-10%
October	-5%	-6%	-10%
November	-4%	-5%	-9%
December	0%	-3%	-8%
<b>January</b>	<b>-20%</b>	<b>-8%</b>	<b>-20%</b>
Q1 Est.	-	2%	-

### Passenger Vehicle Production

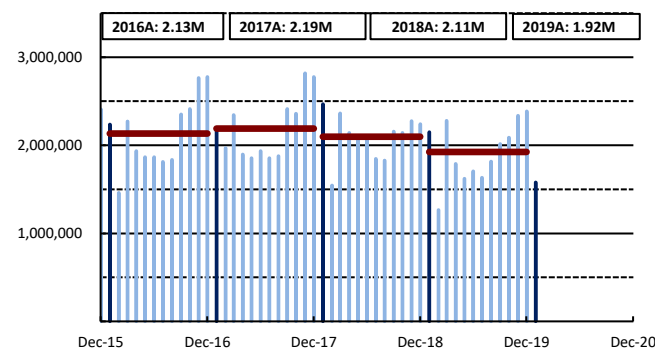
Year-over-Year % Change			
	Month	L3M	YTD
January	-13%	-17%	-13%
February	-18%	-17%	-15%
March	-4%	-11%	-11%
April	-16%	-12%	-12%
May	-22%	-14%	-14%
June	-17%	-19%	-15%
July	-12%	-17%	-14%
August	-1%	-10%	-13%
September	-7%	-6%	-12%
October	-2%	-3%	-11%
November	3%	-2%	-10%
December	6%	2%	-8%
<b>January</b>	<b>-27%</b>	<b>-5%</b>	<b>-27%</b>
Q1 Est.	-	2%	-

### Monthly Passenger Vehicle Sales - Current Month



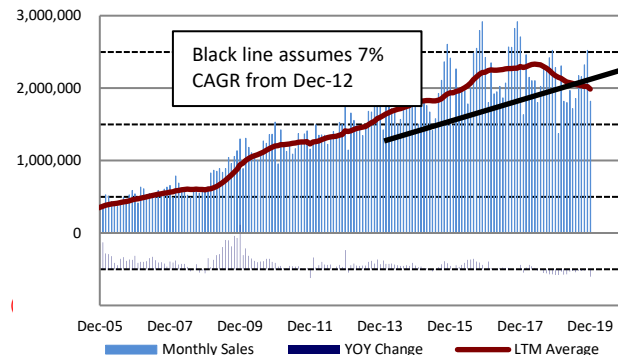
Source: LMC Automotive, Baird estimates

### Monthly Passenger Vehicle Production - Current Month



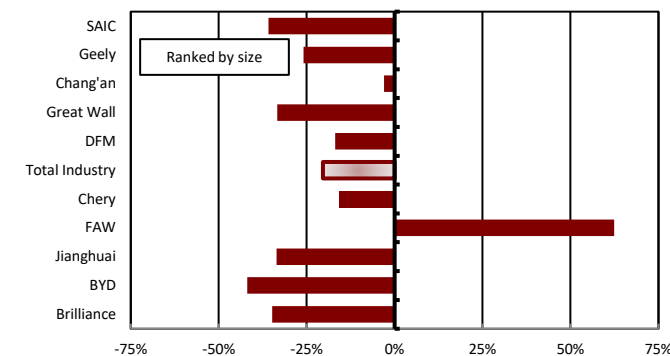
Source: LMC Automotive, Baird estimates

### Monthly Passenger Vehicle Sales - 2000 - Present



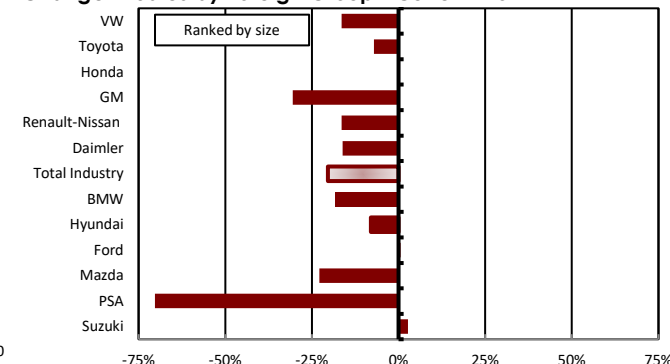
Source: LMC Automotive, Baird estimates

### Change in Sales by Domestic Group - Current Month



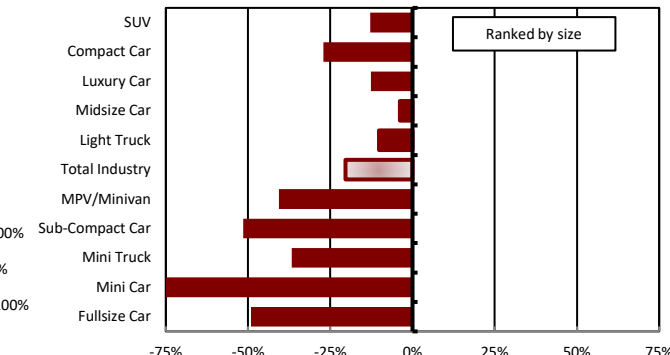
Source: LMC Automotive, Baird estimates

### Change in Sales by Foreign Group - Current Month



Source: LMC Automotive, Baird estimates

### Change in Sales by Segment - Current Month



Source: LMC Automotive, Baird estimates

David Leiker, CFA

Sr. Research Analyst

414.298.7535

[dleiker@rwbaird.com](mailto:dleiker@rwbaird.com)

Erin Welcenbach

Sr. Research Associate

414.298.1947

[ewelcenbach@rwbaird.com](mailto:ewelcenbach@rwbaird.com)

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## Brazil Light Vehicle Sales & Production - February

### Light Vehicles

#### Sales

	Month	L3M	YTD
February	25%	14%	16%
March	0%	10%	10%
April	5%	9%	9%
May	20%	8%	11%
June	10%	12%	11%
July	11%	14%	11%
August	-3%	5%	9%
September	9%	5%	9%
October	-1%	1%	8%
November	4%	4%	7%
December	12%	5%	8%
January	-3%	5%	-3%
<b>February</b>	<b>2%</b>	<b>4%</b>	<b>-1%</b>
Q1 Est.	-	0%	-

	Month	L3M	YTD
Passenger Cars	2%	4%	-2%
Light Commercials	1%	4%	6%
<b>Total Light Vehicles</b>	<b>2%</b>	<b>4%</b>	<b>-1%</b>

#### Production

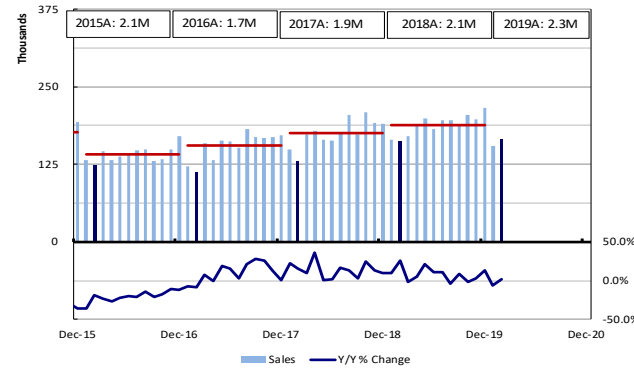
	Month	L3M	YTD
February	21%	-2%	5%
March	-10%	0%	0%
April	1%	3%	0%
May	29%	5%	5%
June	-10%	5%	3%
July	8%	8%	3%
August	-8%	-4%	2%
September	11%	3%	3%
October	10%	3%	3%
November	-7%	5%	2%
December	-3%	0%	2%
January	-4%	-5%	-4%
<b>February</b>	<b>-22%</b>	<b>-11%</b>	<b>-14%</b>
Q1 Est.	-	2%	-

	Month	L3M	YTD
Passenger Cars	-20%	-10%	-13%
Light Commercials	-31%	-16%	-23%
<b>Total Light Vehicles</b>	<b>-22%</b>	<b>-11%</b>	<b>-14%</b>

Source: ANFAVEA, Ward's Automotive, Baird Estimates

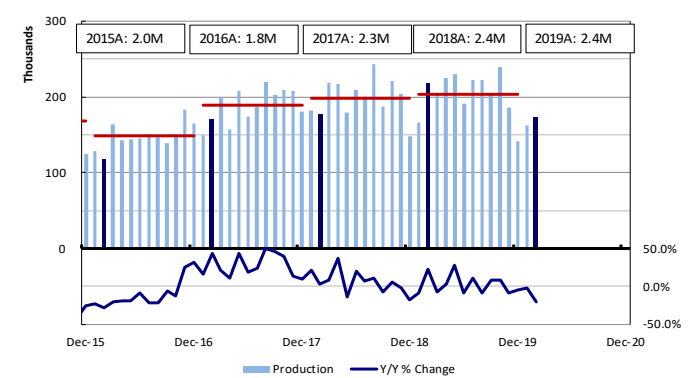
## Sales

### Passenger Vehicles

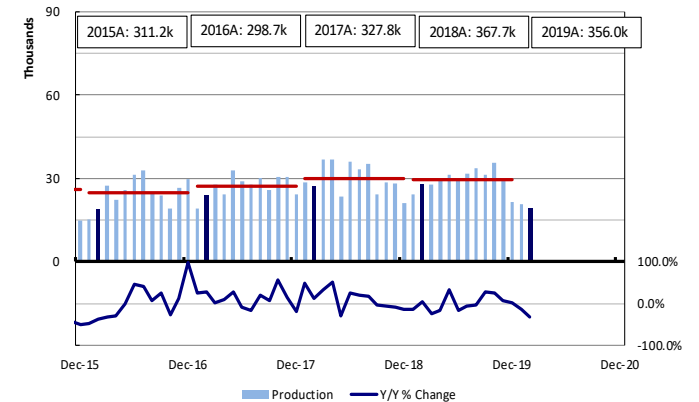
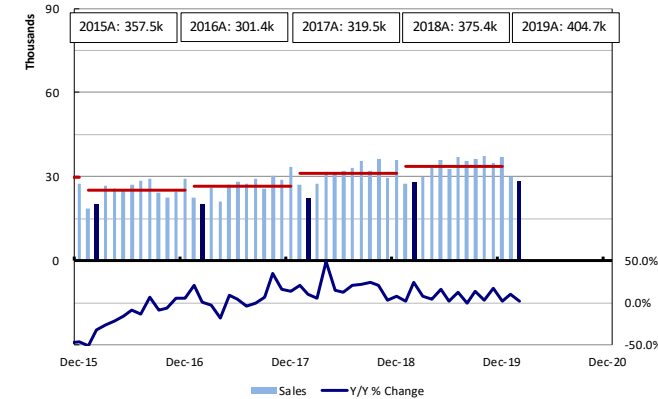


## Production

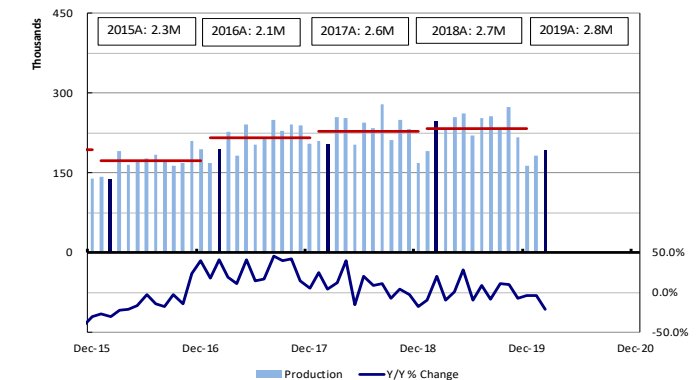
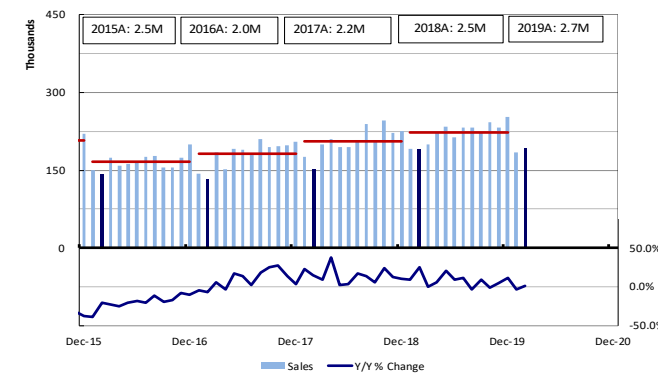
March 9, 2020



### Light Commercial Vehicles



### Total Light Vehicles



David Leiker, CFA

Sr. Research Analyst

414.298.7535

[dleiker@rwbaird.com](mailto:dleiker@rwbaird.com)

Erin Welcenbach

Sr. Research Associate

414.298.1947

[ewelcenbach@rwbaird.com](mailto:ewelcenbach@rwbaird.com)

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Marketing Book - [www.rwbaird.com/docs/Automotive\\_MarketingBook.pdf](http://www.rwbaird.com/docs/Automotive_MarketingBook.pdf)

# Automotive

## Secular Themes – Path to Self-Driving Cars

2025 Market Size = \$55 billion/8% CAGR (Passive Safety \$26 billion/3%; ADAS \$28 billion/16%)

### Global Efforts to Reduce Fatalities

- Crashes kill 1.3 million people/year
- Over 80% are driver error and preventable
  - Excessive speed, inattention, alcohol

### ADAS Adoption Rising Quickly

- US at ~40% penetration today
- Expecting 100% AEB penetration by 2025
  - AEB mandated in Europe by 2021
  - NHTSA/OEMs agree on AEB by 2022
  - China NCAP added AEB to assessment in 2018

### Reduces Crash Frequency/Severity

### Technology in Place for Self-Driving

- Vision, radar, LIDAR, ultrasonic, V2X
- Software controls brakes/steering/speed
- Driver policy determines where to drive
  - Real-time environment mapping
  - Crowd sourcing of data

### Passive Safety Content Still Rising

- Emerging mkt, rear-seat, next-gen bags/belts

- Aptiv
- Autoliv
- Bosch
- Continental
- Denso
- Gentex
- Harman
- Key Safety Systems
- Magna
- Mobileye
- TRW
- Valeo
- Veoneer
- WABCO

BAIRD

### Pathway Toward Autonomous Vehicles

	Level 1 ("Feet Off")	Level 2 ("Hands Off")	Level 3 ("Eyes Off")	Level 4 ("Mind Off")
Driver Involvement:	Fully Active	Fully Active	Must be Available to Take Control	No Control Needed
Introduction:	Pre-2010	2013	2017-18	2020+
Technology:	AEB, ACC, LKA	Highway Autopilot	Adding Country Roads and Cities	Vehicle is Fully Autonomous
Penetration in Developed Markets:	15-20%	1%	0%	0%
Vehicle Examples:	Ford Fusion, Chevy Suburban, Toyota Camry	Tesla Model S/X, Mercedes E-Class, BMW 7-Series, Infiniti Q50	Volevo "Drive Me" in 2017 (100 vehicles);	BMW (with MSLY) launching in controlled environments in 2021

<sup>1</sup> Most automakers plan to launch autonomous driving in the early-2020s; BMW program is only one with specific details/partners

Source: Company reports, Ward's Auto, Baird estimates

### Global ADAS Regulations

Reg Body	Type of ADAS	2012	2013	2014	2015	2016	2017	2018
Euro NCAP	Speed Limit Sign Recognition			50% <sup>1</sup>	70%	100% <sup>1</sup>	100% <sup>1</sup>	100% <sup>2</sup>
	AEB Inter-Urban				50% <sup>1</sup>			
	LDW/LKA							
NHTSA (US)	FCW							
	AEB							
IIHS (US)	FCW							
	AEB Inter-Urban							
Korea NCAP	FCW							
	LDW							
Japan NCAP	LDW							
	AEB							
China NCAP								

<sup>1</sup>Need one of these ADAS for 5 stars

<sup>2</sup>Need LDW/LKA for 5 stars. Can gain 4 stars with just AEB.

<sup>3</sup>Basic rating allows a vehicle to qualify for 2014 Top Safety Pick+. Advanced or superior rating needed for 2015 Top Safety Pick+.

<sup>4</sup>Regulations didn't include any ADAS requirements and tend to lag Euro standards by 3-4 years

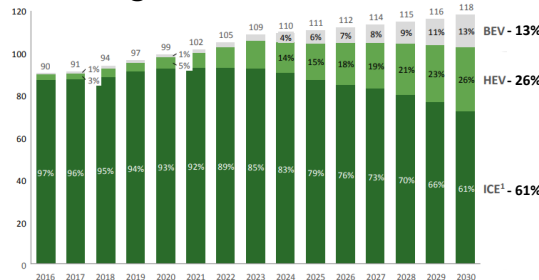
Source: Euro NCAP, IIHS, NHTSA, China NCAP, Autoliv, Continental, Baird estimates

# Automotive

## Secular Themes – Increase in Fuel Efficiency

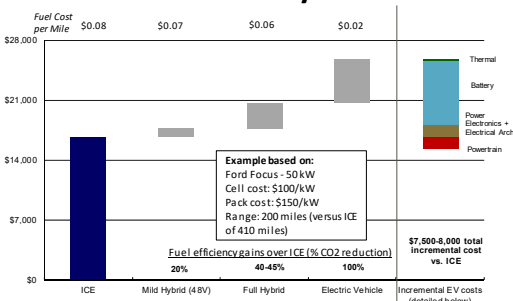
2025 Market Size = \$410 billion/6% CAGR

### Global Light Vehicle Powertrain



1. Includes mild hybrid electric vehicle

### Cost of Fuel Efficiency

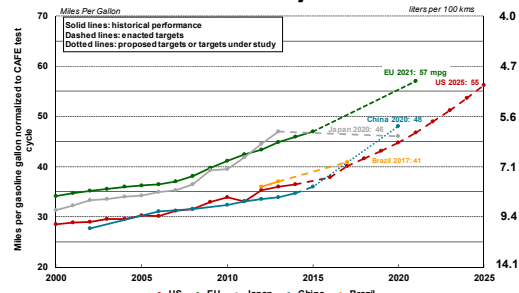


Source: Baird estimates

- Aptiv
- BorgWarner
- Bosch
- Continental
- Delphi Tech
- Denso
- Littelfuse
- TE Connectivity

BAIRD

### Global Fuel Efficiency Standards



	Battery	Thermal	Power Electronics + EA	Powertrain	Total
Net Cost (EV vs. ICE)	\$7,500	\$250	\$1,350	-\$1,400	\$7,700
Product Examples	Battery, Battery Pack	Cabin Heater, Battery Cooler	DC/DC converter, inverter, wiring, connectors	Motor, Transmission, Engine	

### Tradeoffs by Powertrain

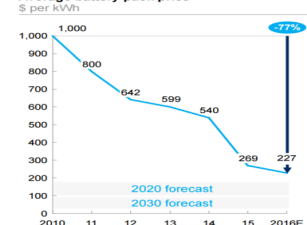
#### Internal Combustion Engine

- Depreciating assets
- Incremental improvement
- Liquid fuel

#### Electric Vehicle

- New assets
- New technology
- Expensive storage

### Average battery pack price



## Automotive

### Secular Themes – In-Vehicle Technology/Features

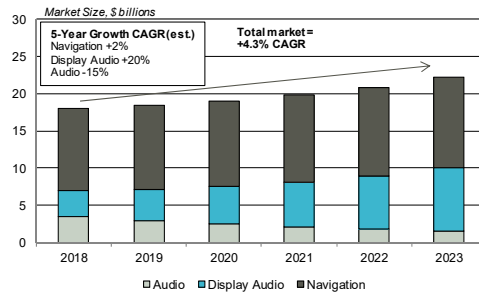
2025 Market Size = \$60 billion/7% CAGR

- **Electronics** – growing 7% per year
- **Infotainment** – 50% penetration
  - Smartphone functionality in the vehicle
  - Should reach 100% over 10 years
  - Next-gen infotainment coming to market
    - Embed vehicle apps – updates, telematics, diagnostics/warranty, navigation, analytics
    - Smartphone user apps/content – maps, music, calendar, contacts, text/email
- **Advanced displays and clusters**
  - Analog → Digital → Multiple → Headup
- **Driver distraction needs managing**
  - Potential integration with ADAS
  - Driver monitoring, autonomous driving
- **Small vehicle content** rising as consumers demand similar content and function as higher trim vehicles

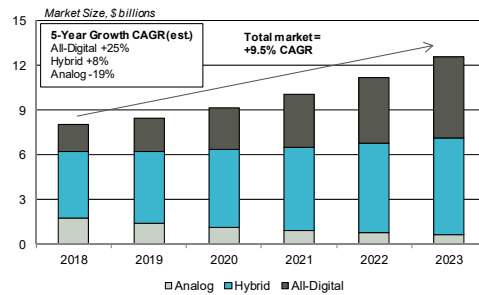
- Aisin
- Alpine
- Aptiv
- Bosch
- Continental
- Denso
- Garmin
- Harman
- Lear
- Littelfuse
- Magneti Marelli
- MELCO
- Panasonic
- TE Connectivity
- Visteon



#### Infotainment Growth Driven Primarily by Display Audio



#### All-Digital Instrument Clusters the Fastest Growing Category



Source: Company reports, Baird estimates

## Automotive

### Secular Themes – Emerging Markets

2025 Market Size = \$350 billion/4% CAGR

#### Emerging markets and secular growth

- Emerging markets expected to represent be the driver of global growth (in units) through 2022
- Rising GDP/capita enables spending on home, car and travel
- Rising content adds revenue growth
- Growth in premium/luxury segment
  - EU - 21% share, US - 12%, China - 10%

Region	Population	LV Sales (in 000s)	Sales/1,000 ppl	GDP/capita	GDP Growth
China	1,415,045,928	26,466	18.70	8,827	6.6%
ASEAN	647,387,130	3,562	5.50	4,271	5.7%
India	1,358,137,719	4,046	2.98	1,942	7.2%
Eastern EU	162,260,730	1,410	8.69	10,254	4.1%
Russia	143,964,709	1,812	12.59	10,743	2.3%
<b>Total</b>	<b>3,726,796,216</b>	<b>37,296</b>	<b>15.06</b>	<b>7,792</b>	<b>6.3%</b>

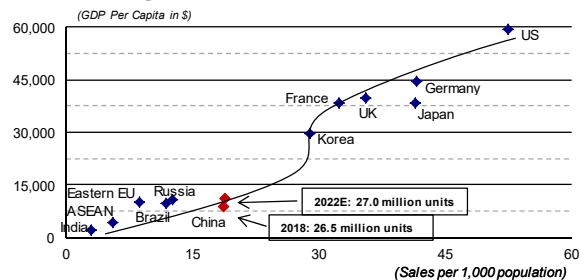
\*Totals for Sales, GDP/capita and GDP growth use average weighted by vehicle market size

Source: Ward's, CIA World Factbook, World Bank, LMC, Baird estimates

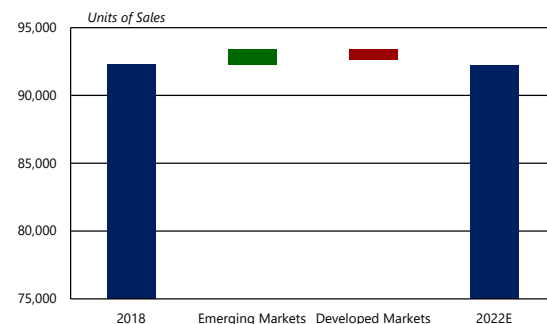
- Adient
- Aptiv
- Autoliv
- BorgWarner
- Delphi Tech
- Littelfuse
- TE Connectivity



#### Passenger Vehicle Penetration



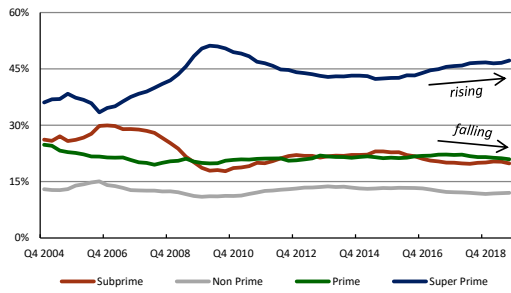
#### Emerging Markets Driving Growth



# Automotive Auto Credit

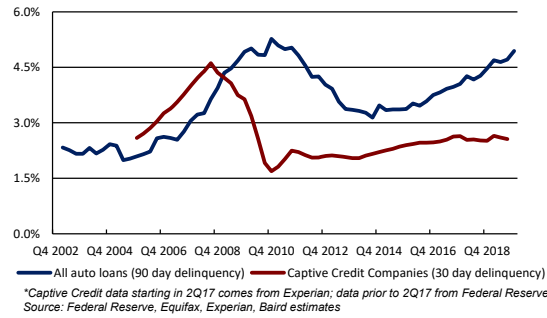
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Share of Total Auto Loan Originations (LTM Moving Average)

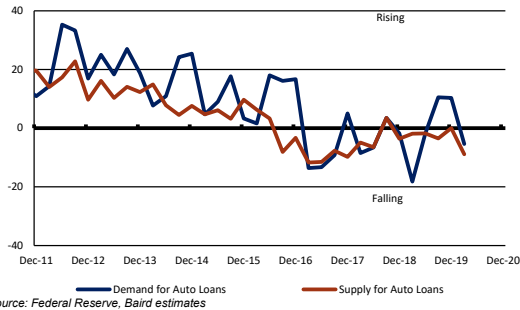


Source: Federal Reserve, Equifax, Baird estimates

Percentage of Total Auto Loans Which Are Delinquent

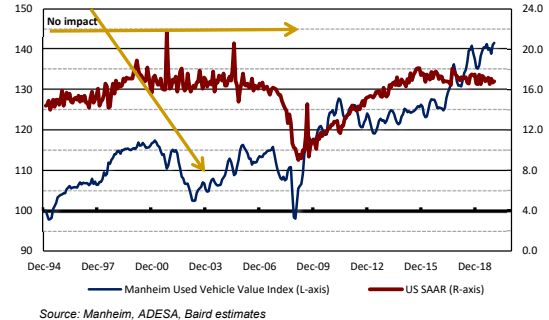


Senior Loan Officer Survey - Auto Loans



Source: Federal Reserve, Baird estimates

Manheim Used Vehicle Price Index

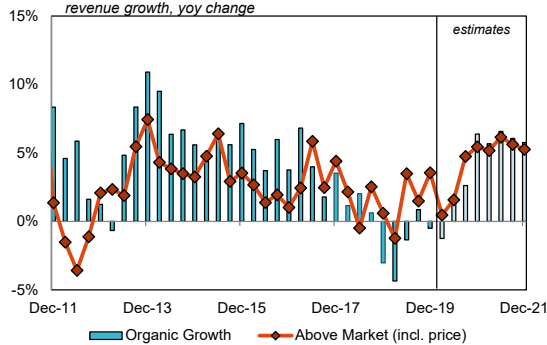


Global Auto & Truck Markets

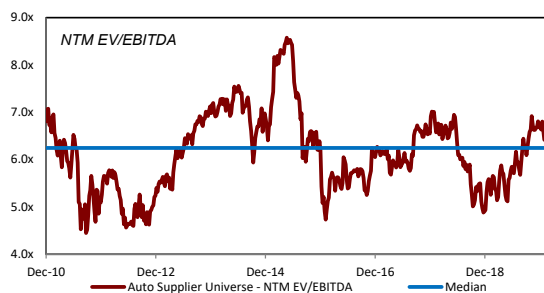
# Automotive Stock Drivers

BAIRD

Auto Supplier Organic Growth/Growth Above Market  
revenue growth, yoy change

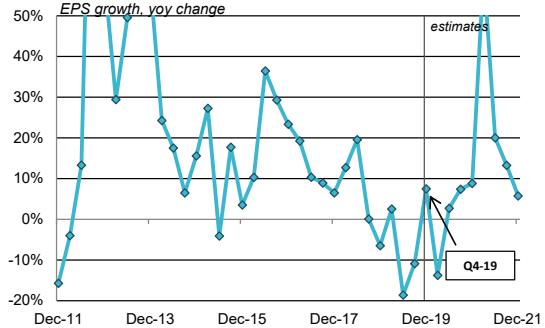


Valuation: EV/EBITDA

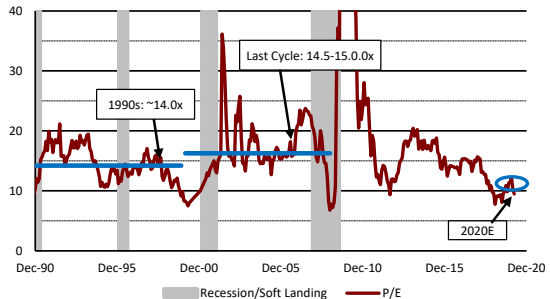


Global Auto & Truck Markets

Auto Supplier EPS Growth – Historical and Estimated  
EPS growth, yoy change



Valuation: P/E



Source: FactSet, Wards Auto, Baird estimates

# Automotive Key Investment Risks

BAIRD

## Adient

**Key risks:** 1) cyclical end markets; 2) exposure to major OEMs; 3) new program launches; 4) restructuring; 5) raw materials; 6) supplier disruption; 7) foreign currency; and 8) financial leverage.

## Aptiv

**Key risks:** 1) global automotive markets; 2) exposure to key customers; 3) timing of new business/launches; 4) commodity/FX price fluctuations; 5) the technology landscape and pace of development/adoption; and 6) execution.

## Autoliv

**Key risks:** 1) light vehicle production; 2) commodity prices; 3) pricing pressure; 4) foreign exchange; 5) timing/pace of recall activity; and 6) ability to sustain market share.

## BorgWarner

**Key risks:** 1) raw material and commodity costs; 2) end-market risk; 3) slowing penetration of diesel engines; 4) increasing competition in turbochargers; 5) foreign currency; 6) post-retirement liabilities; and 7) risk associated with the recently-announced acquisition of Delphi.

## Delphi Technologies

**Key risks:** 1) cyclical end markets; 2) changes in vehicle and engine mix; 3) exposure to key customers; 4) achieving targeted cost reductions; 5) raw material/FX exposure; 6) the ability to successfully develop new technologies; and 7) risk associated with whether the acquisition by BorgWarner will close.

## Gentex

**Key risks:** 1) end-market volume; 2) adoption of auto-dimming mirrors and advanced features; 3) raw material and component costs; 4) costs associated with bringing concepts to market and winning new business; and 5) new technology advancements (cameras replacing mirrors).

## Lear Corporation

**Key Risks:** 1) End-market demand; 2) customer concentration; 3) ability to win new business and cost to launch new programs; 4) acquisition integration; 5) raw material prices; 6) foreign currency; and 7) post retirement obligations.

## Littelfuse

**Key risks:** 1) competitive pressures; 2) end-market demand; 3) acquisition integration; 4) commodity/currency price fluctuations; 5) disruptions at suppliers/customer; and 6) modeling given visibility in certain channels/end markets.

## Methode Electronics

**Key Risks:** 1) exposure to the automotive industry, particularly to two large customers (Ford and GM) that account for approximately 59% of total revenue; 2) volatile and lumpy results in the company's non-automotive businesses; 3) modeling uncertainty; 4) acquisition integration risk; and 5) execution risk as new business is launched.

## Snap-on

**Key risks:** 1) modest economic sensitivity, though the US auto repair tool market is just 30% of sales; 2) dealer business depends on automotive repair spending; 3) post retirement liabilities; and 4) limited intra-quarter visibility into performance.

## TE Connectivity

**Key risks:** 1) competitive pressures; 2) cyclical of served end markets (particularly transportation at 53% of revenue, along with industrial, consumer electronics, and telecommunication); 3) acquisition integration; 4) managing commodity and currency price fluctuations; 5) disruptions at suppliers and/or customers that may impact delivery of product; and 6) modeling risk.

## Veoneer

**Key risks:** 1) light vehicle production; 2) order win rates; 3) ramp of new business wins; 4) pace of technology adoption; 5) pricing pressure; 6) the regulatory environment; and 7) foreign exchange.

## Visteon Corporation

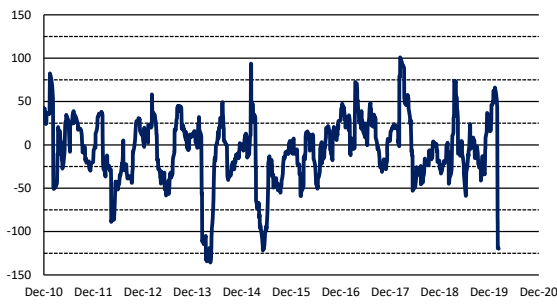
**Key risks:** 1) automotive environment; 2) competitive landscape; 3) key customers; 4) major programs; 5) foreign currency exposure; 6) raw material costs; 7) deployment of excess capital; 8) modeling risk; and 9) pension obligations.

## Global Auto & Truck Markets

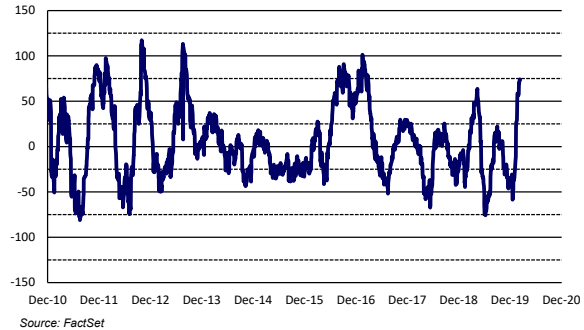
# Surprise Indexes By Country

BAIRD

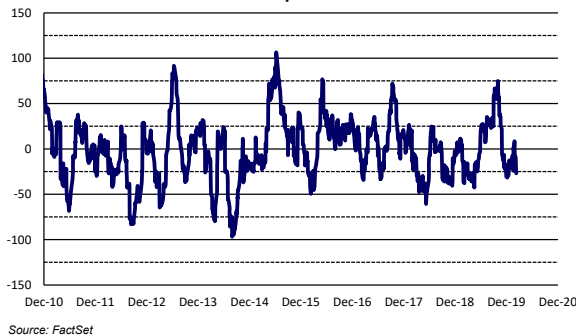
## China



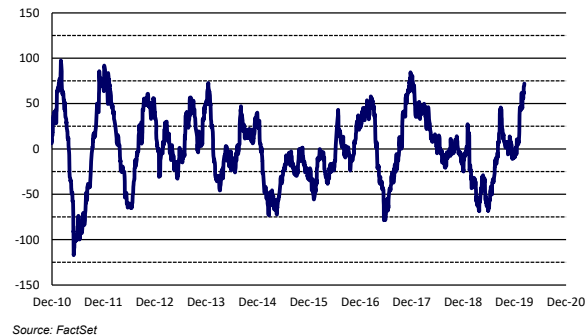
## United Kingdom



## Japan



## United States



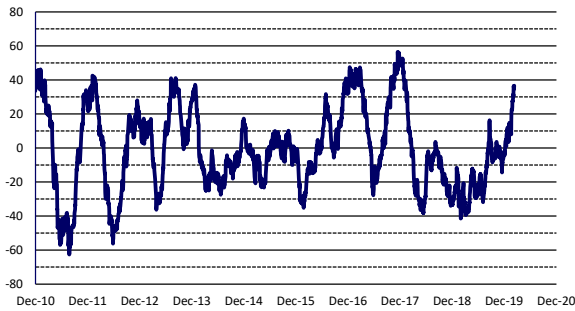
## Global Auto & Truck Markets



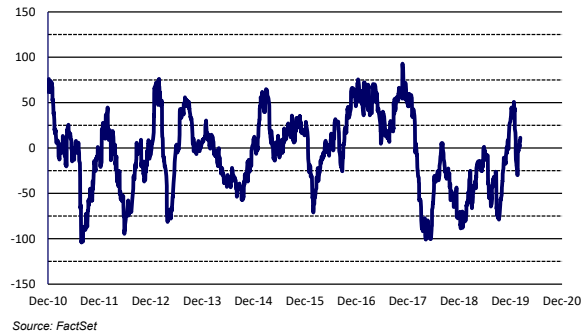
# Surprise Indexes By Region

BAIRD

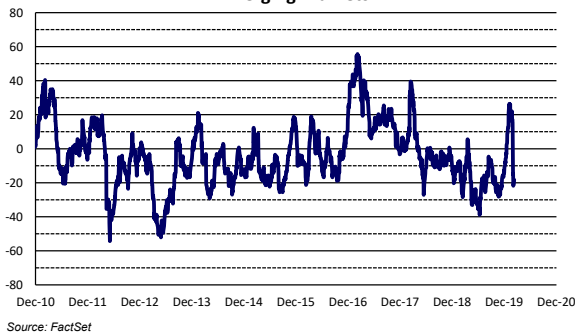
Developed Markets



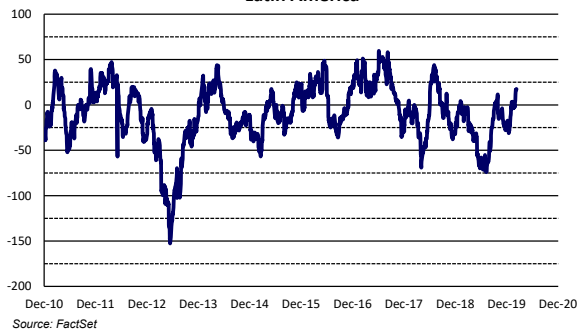
Eurozone



Emerging Markets



Latin America



Global Auto & Truck Markets

## Commercial Vehicles Current Trends

BAIRD

End-Market Trends – Q1

	Year-over-Year % Chg.						QTD Actual <sup>1</sup>	Initial Q1E
	Q2	Q3	Q4	Actuals				
				Jan	Feb	Mar		
North America								
Cl. 5-7 Orders	(16.0%)	(19.6%)	(28.2%)	(13.5%)	(11.8%)		(12.6%)	
Cl. 5-7 Sales	3.9%	6.2%	1.5%	(13.2%)			(13.2%)	(8.7%)
Cl. 5-7 Prod.	6.0%	6.0%	(8.5%)	(4.2%)			(4.2%)	(11.8%)
Cl. 8 Orders	(65.6%)	(77.0%)	(36.1%)	6.9%	(16.3%)		(5.0%)	(4.0%)
Cl. 8 Sales	13.6%	7.2%	(13.1%)	(22.0%)			(22.0%)	(29.3%)
Cl. 8 Prod.	18.7%	1.4%	(17.6%)	(24.0%)			(24.0%)	(33.1%)
Europe (E27)								
Registrations	24.1%	(17.0%)	(11.8%)	(16.8%)			(16.8%)	(17.5%)
Production <sup>2</sup>	(3.0%)	(8.0%)	(10.0%)	(16.0%)			(16.0%)	(16.8%)
Asia								
China Sales	(10.3%)	1.9%	6.5%	10.3%			10.3%	-
China Prod.	(6.3%)	(1.5%)	20.3%	(8.7%)			(8.7%)	(5.0%)
Japan Sales	4.2%	17.0%	3.2%					-
Japan Prod. <sup>3</sup>	(6.7%)	(2.4%)	(4.5%)					2.0%
Other Regions								
Brazil Sales	49.0%	28.8%	18.0%	2.2%	(8.0%)		(2.8%)	-
Brazil Prod.	16.1%	11.3%	(5.5%)	(1.5%)	(3.9%)		(2.9%)	0.0%
India Sales	(16.5%)	(52.7%)	(38.5%)	(34.7%)			(34.7%)	-
India Prod. <sup>3</sup>	(17.4%)	(57.7%)	(60.9%)					(15.0%)
Global								
Global Sales	(0.7%)	(0.3%)	(0.3%)	(0.9%)			(0.9%)	-
Global Prod.	(1.6%)	(1.7%)	5.5%	(11.6%)			(11.6%)	(9.8%)
Currency (versus USD)								
Euro	(5.8%)	(4.4%)	(3.0%)	(2.8%)	(3.8%)		(3.0%)	(1.2%)
Br. Pound	(5.5%)	(5.4%)	(0.0%)	1.5%	(0.4%)		0.3%	1.8%
Yen	(0.7%)	3.9%	3.8%	(0.3%)	0.4%		0.6%	1.3%
Renminbi	(6.5%)	(3.0%)	(1.8%)	(1.9%)	(3.7%)		(2.8%)	(3.1%)
Peso	1.3%	(2.4%)	2.7%	2.0%	1.8%		1.4%	1.7%

Source: ACT Research, Wards, JD Power, ANFAVEA, Company Reports, Baird estimates  
<sup>1</sup> QTD global figures includes all known sales and production data (for NA, EU and China)  
<sup>2</sup> Europe Production data comes from Michelin heavy truck tire shipments  
<sup>3</sup> Final Q4 figures not yet available; QTD figures inclusive of most recently available data

Revenue Breakdown by Company – Cal-2019

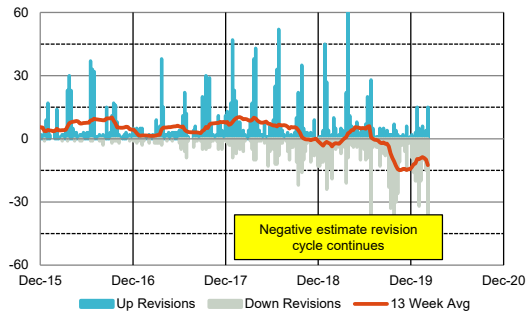
	Navistar International	PACCAR	AB Volvo	Allison Transmission	Cummins	Modine Manufacturing	WABCO Holdings	Average	Share of Global Market
<b>(% of sales)</b>									
<b>Markets</b>									
North America	95%	65%	30%	77%	62%	49%	23%	57%	17%
Europe	-	24%	38%	6%	10%	38%	48%	27%	18%
Asia	-	-	19%	8%	21%	11%	19%	16%	61%
China	-	-	7%	5%	10%	8%	10%	8%	40%
South America	2%	-	7%	1%	5%	2%	4%	4%	4%
Other	3%	11%	6%	7%	2%	0%	6%	5%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Top Customers</b>									
Daimler	-	-	-	20%	8%	11%	13%	7%	12%
Volvo	-	-	-	5%	-	-	-	2%	8%
VW/MAN/Scania	-	-	-	-	-	11%	-	2%	8%
Navistar	-	-	-	11%	8%	-	-	3%	3%
Iveco	-	-	-	-	-	-	-	0%	2%
PACCAR	-	-	-	12%	17%	-	-	4%	6%
Other Truck	-	-	-	-	-	-	-	0%	61%
<b>Total Truck</b>	<b>66%</b>	<b>83%</b>	<b>66%</b>	<b>59%</b>	<b>51%</b>	<b>18%</b>	<b>64%</b>	<b>58%</b>	
Buses/RV	9%	0%	7%	10%	-	-	-	-	4%
Off-highway	3%	0%	21%	5%	7%	14%	5%	8%	
<b>Total CV</b>	<b>78%</b>	<b>83%</b>	<b>95%</b>	<b>74%</b>	<b>58%</b>	<b>32%</b>	<b>69%</b>	<b>70%</b>	
Aftermarket	20%	17%	0%	20%	27%	5%	26%	16%	
Non-CV	3%	0%	5%	6%	15%	63%	5%	14%	
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	

\*Truck includes trailers  
\*\*Off-highway includes construction, agriculture, military, and energy  
\*\*\*Non-CV includes automotive, aerospace, marine, industrial, etc.  
Source: Company filings, FactSet, Baird estimates

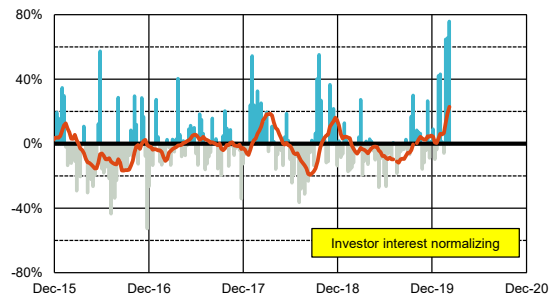
# Commercial Vehicles Investor Sentiment

BAIRD

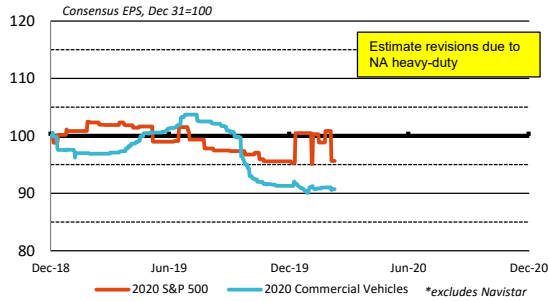
Weekly Estimate Revisions



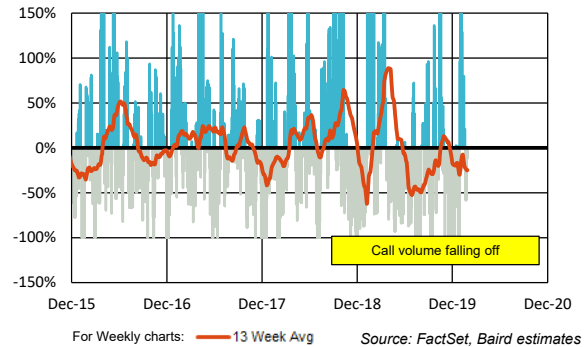
Weekly Trading Volume (Percentage of 6-Month Average)



Change in Consensus EPS



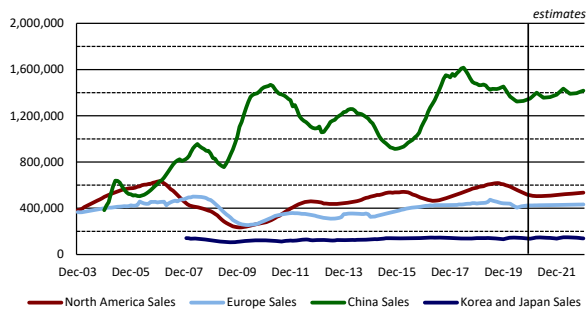
7-Day Call Volume versus 13-Week Average



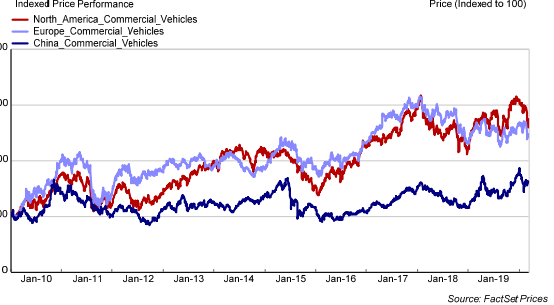
# Commercial Vehicles Global Market Summary

BAIRD

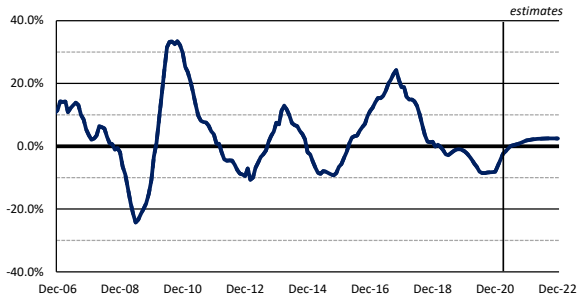
Global Medium/Heavy Truck Sales - By End Market (LTM)



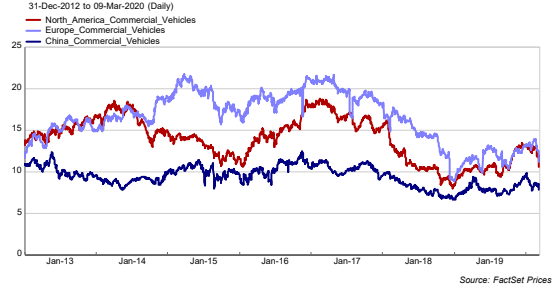
5-Year Absolute Stock Performance



Global Truck Sales - Yr/Yr Growth



Price to Earnings - NTM (Mean)

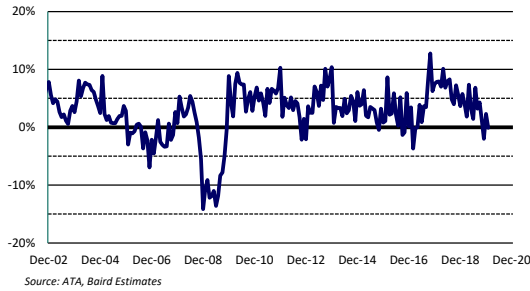


# Commercial Vehicles

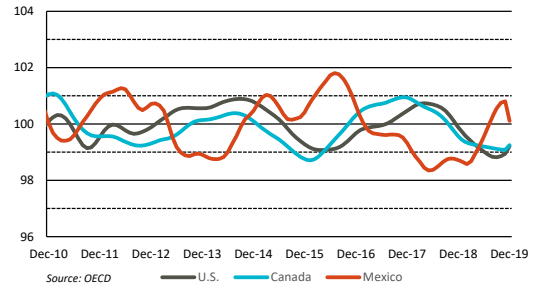
## North America Demand Drivers – Mixed Indicators

BAIRD

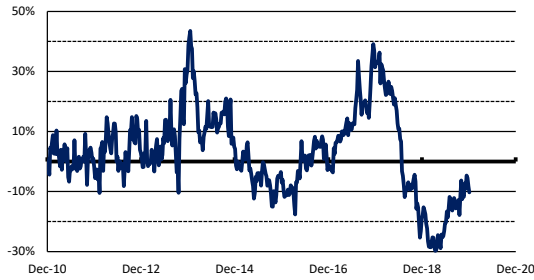
ATA Truck Freight Index



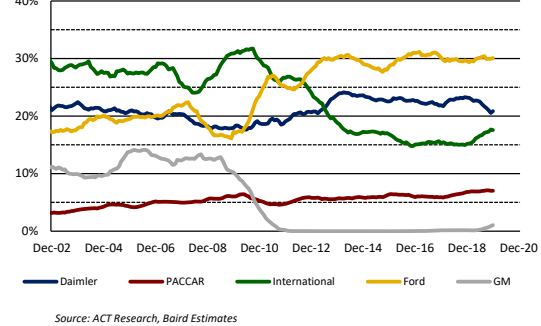
North America Leading Indicators



Dry Van (ex-fsc) Spot Rates – Yoy Chg



Class 5-7 Market Share (LTM)



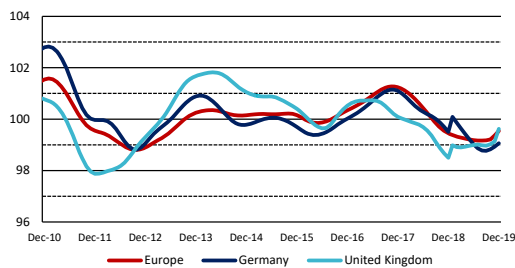
Global Auto & Truck Markets

# Commercial Vehicles

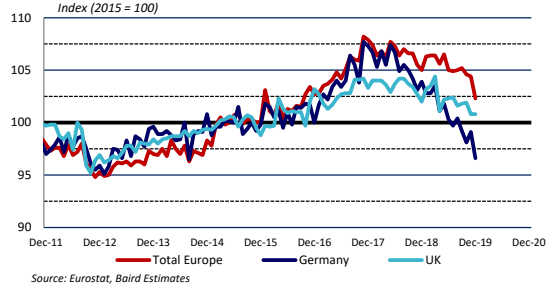
## Europe Demand Drivers – Solid Demand

BAIRD

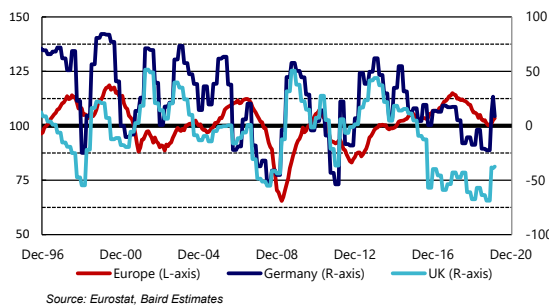
European Leading Indicators



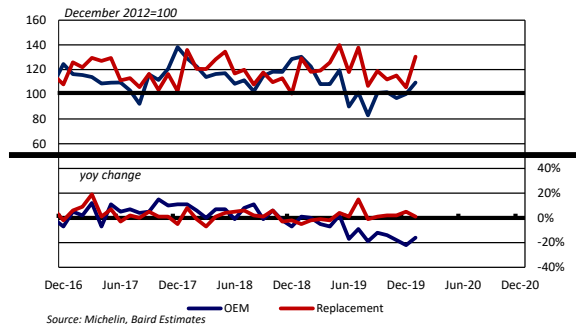
European Industrial Production



Economic Sentiment



Michelin Truck Tire Shipments (Total Europe)



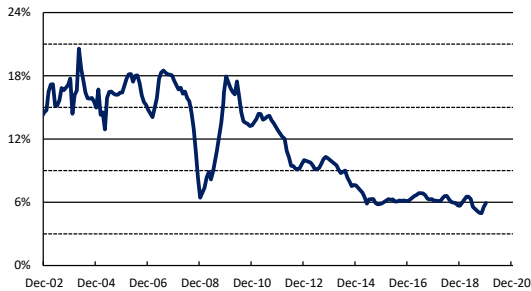
Global Auto & Truck Markets

# Commercial Vehicles

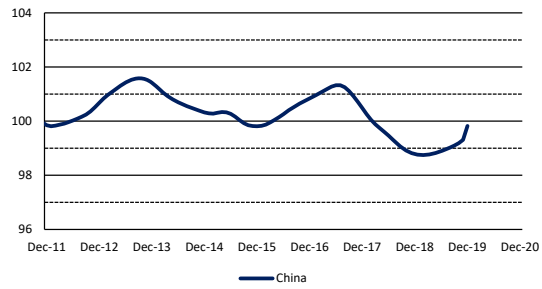
## China Demand Drivers – Improving Backdrop

BAIRD

Industrial Production (Yr/Yr Change)



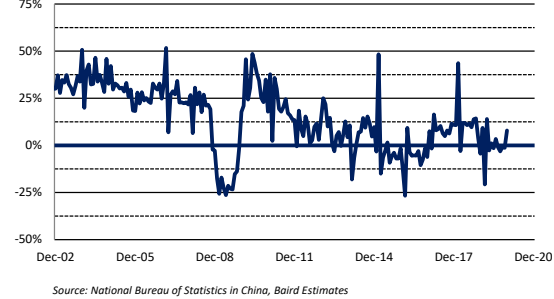
China Leading Indicators



Fixed Asset Investment (Yr/Yr Change)



China Exports (Yr/Yr Change)



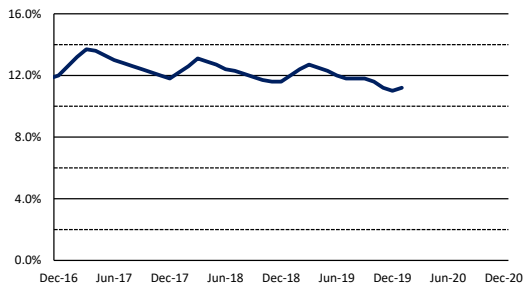
Global Auto & Truck Markets

# Commercial Vehicles

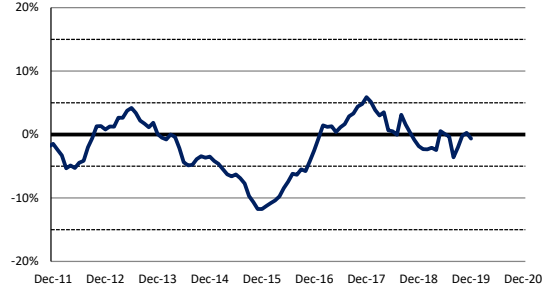
## Brazil Demand Drivers – Bottoming

BAIRD

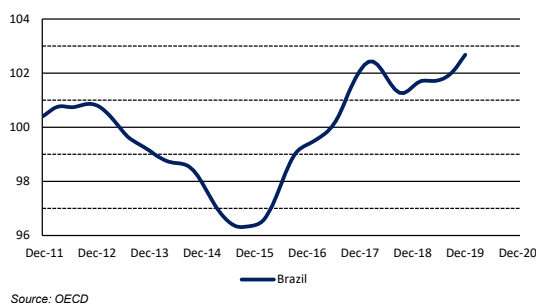
Unemployment Rate



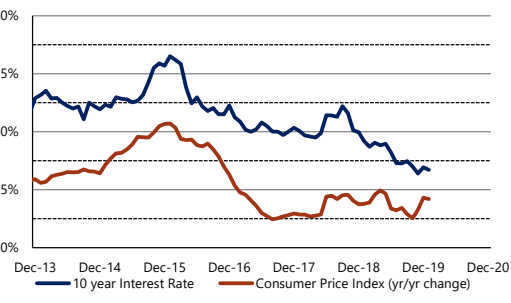
Industrial Production (L3M Yr/Yr Change)



Brazil Leading Indicators



10 Year Interest Rate and CPI



Global Auto & Truck Markets

February 19, 2020

## North America Commercial Vehicle Data

### Class 8 Production

Year-over-Year % Change

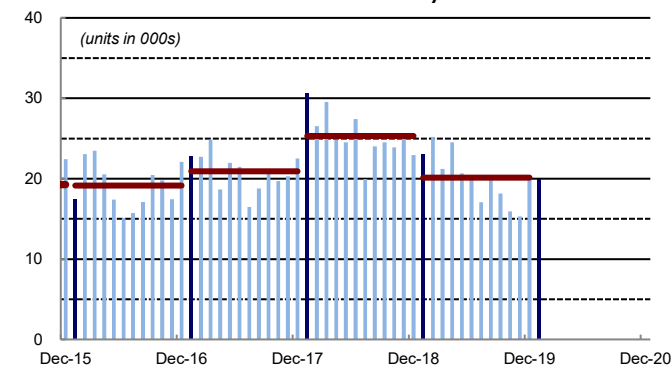
	Month	L3M	YTD
June	24%	20%	30%
July	36%	22%	31%
August	14%	24%	29%
September	19%	23%	27%
October	19%	17%	26%
November	24%	21%	26%
December	37%	26%	27%
January	34%	31%	34%
February	17%	29%	25%
March	16%	22%	22%
April	29%	21%	24%
May	36%	27%	26%
June	6%	22%	22%
July	3%	13%	19%
August	4%	4%	17%
September	-3%	1%	14%
October	-9%	-3%	12%
November	-16%	-9%	9%
December	-29%	-18%	6%
January	-24%	-23%	-24%
Q1 Estimate	-	-33%	-

### Class 5-7 Production

Year-over-Year % Change

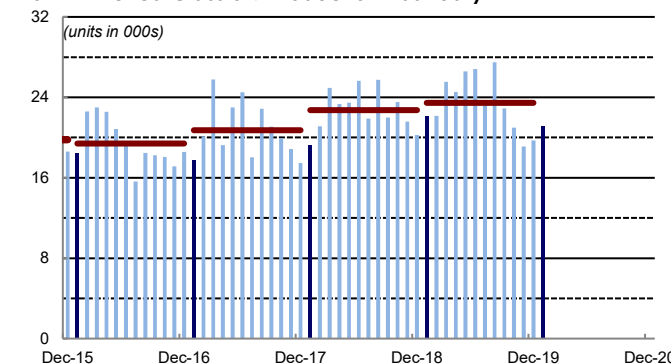
	Month	L3M	YTD
June	5%	8%	6%
July	21%	8%	8%
August	12%	12%	8%
September	4%	12%	8%
October	18%	11%	9%
November	14%	12%	9%
December	16%	16%	10%
January	15%	15%	15%
February	5%	12%	10%
March	2%	7%	7%
April	5%	4%	6%
May	13%	7%	8%
June	5%	8%	7%
July	7%	8%	7%
August	7%	6%	7%
September	4%	6%	7%
October	-11%	0%	5%
November	-12%	-6%	4%
December	-3%	-9%	3%
January	-4%	-6%	-4%
Q1 Estimate	-	-12%	-

### North America Class 5-7 Orders - January



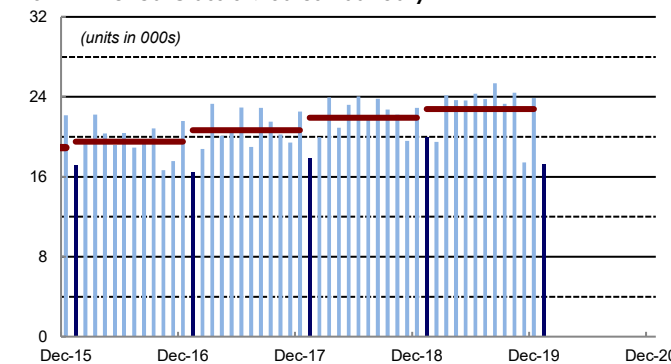
Source: ACT Research, Baird estimates

### North America Class 5-7 Production - January



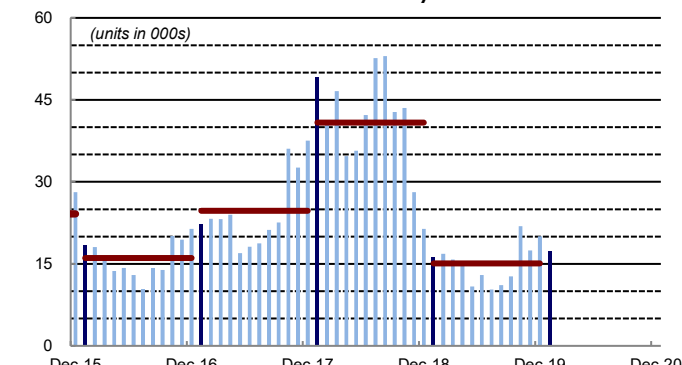
Source: ACT Research, Baird estimates

### North America Class 5-7 Sales - January



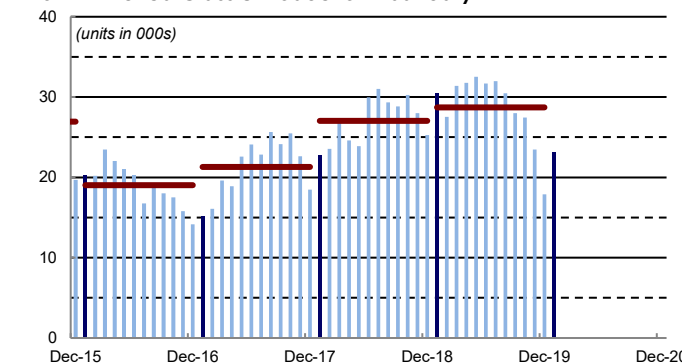
Source: ACT Research, Baird estimates

### North America Class 8 Orders - January



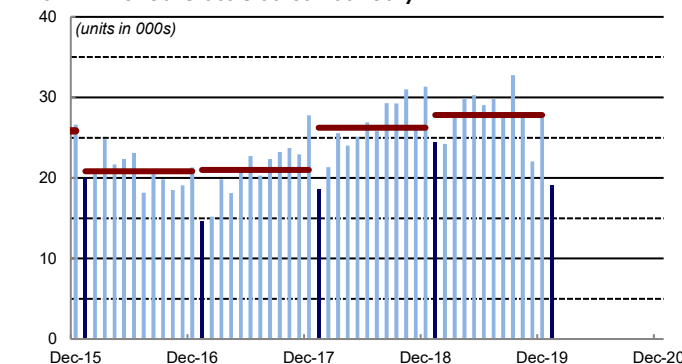
Source: ACT Research, Baird estimates

### North America Class 8 Production - January



Source: ACT Research, Baird estimates

### North America Class 8 Sales - January



Source: ACT Research, Baird estimates

David Leiker, CFA

Senior Research Analyst

414.298.7535

[dleiker@rwbaird.com](mailto:dleiker@rwbaird.com)

Erin Welcenbach

Sr. Research Associate

414.298.1947

[ewelcenbach@rwbaird.com](mailto:ewelcenbach@rwbaird.com)

Please refer to the Appendix for Important Disclosures -

for additional comments and important disclosures

Marketing Book - [www.rwbaird.com/docs/Automotive\\_MarketingBook.pdf](http://www.rwbaird.com/docs/Automotive_MarketingBook.pdf)

## European Commercial Vehicle Data - January 2020

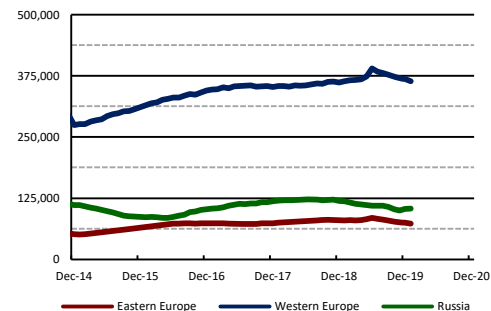
Heavy CV = Trucks > 16t + 70% of M/H Buses & Coaches > 3.5t

Medium CV = Trucks 3.5-16t + 30% of M/H Buses & Coaches > 3.5t

### Total Commercial Vehicle Registrations

	Year-over-Year % Change		
	Month	L3M	YTD
January	10%	2%	10%
February	2%	2%	6%
March	-2%	3%	3%
April	10%	3%	5%
May	-1%	2%	3%
June	4%	4%	3%
July	11%	4%	4%
August	7%	7%	5%
September	0%	6%	4%
October	13%	7%	5%
November	2%	5%	5%
December	-11%	2%	3%
January	8%	0%	8%
February	6%	1%	7%
March	2%	5%	5%
April	4%	4%	5%
May	21%	9%	8%
June	45%	24%	15%
July	-22%	16%	10%
August	-17%	5%	7%
September	-12%	-17%	5%
October	-13%	-14%	3%
November	-14%	-13%	1%
December	-8%	-12%	1%
January	-17%	-13%	-17%
Q1 est.	-	-18%	-

### European LTM Sales by Region

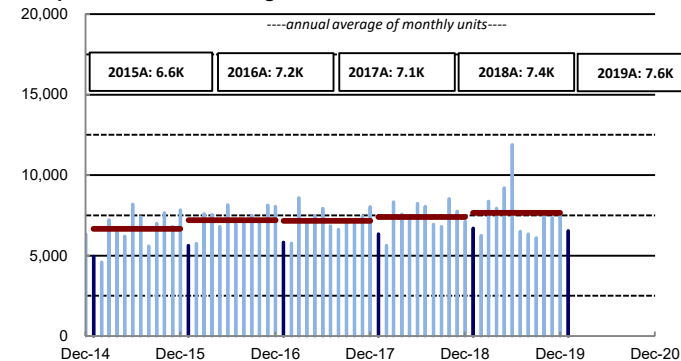


\*2012 Italy registrations are ACEA estimates

**David Leiker, CFA**  
Sr. Research Analyst  
414.298.7535  
[dleiker@rwbaired.com](mailto:dleiker@rwbaired.com)

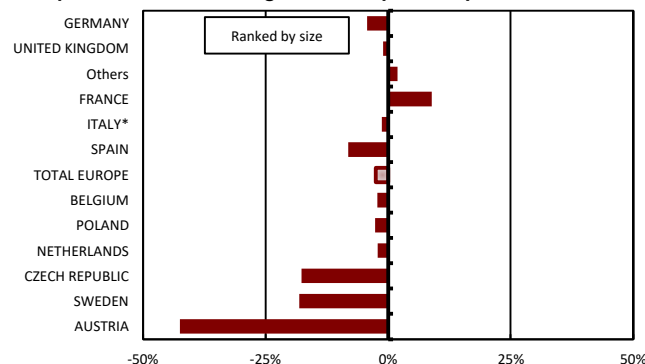
**Erin Welcenbach**  
Sr. Research Associate  
414.298.1947  
[ewelcenbach@rwbaired.com](mailto:ewelcenbach@rwbaired.com)

### European Medium CV Registrations - Current Month



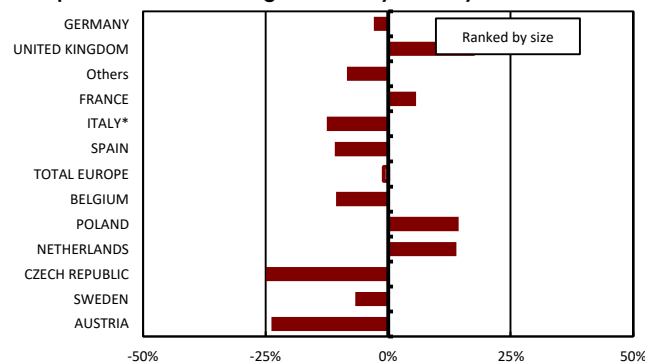
Source: ACEA, Baird estimates

### European Medium CV Registrations by Country - Current Month



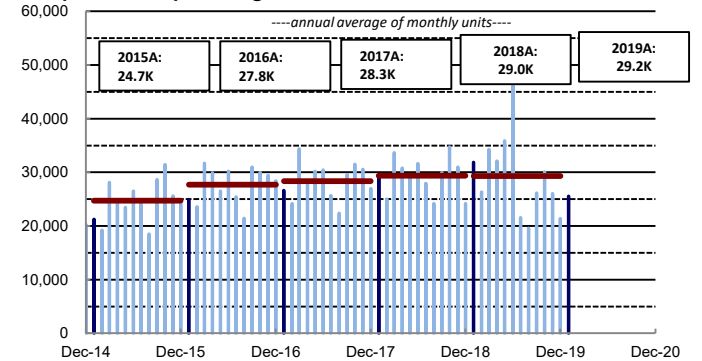
Source: ACEA, Baird estimates

### European Medium CV Registrations by Country - Last 3 Months



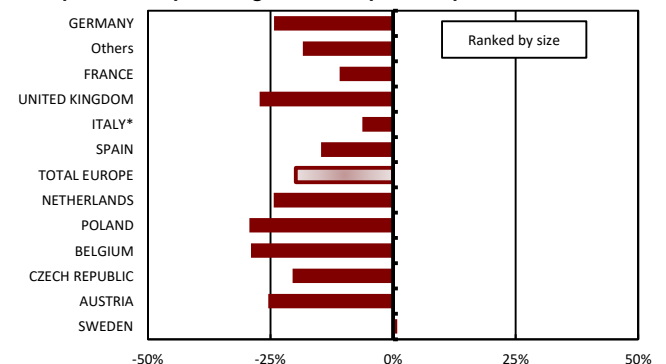
Source: ACEA, Baird estimates

### European Heavy CV Registrations - Current Month



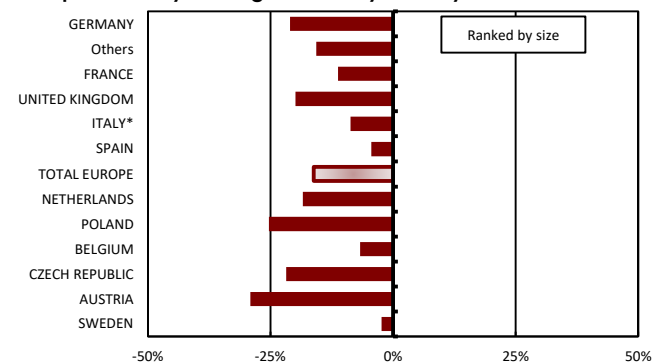
Source: ACEA, Baird estimates

### European Heavy CV Registrations by Country - Current Month



Source: ACEA, Baird estimates

### European Heavy CV Registrations by Country - Last 3 Months



Source: ACEA, Baird estimates

February 25, 2020

Please Refer to Appendix  
for Important Disclosures and Analyst Certification



## China Commercial Vehicle Sales/Production - January 2020

Commercial Vehicle Sales (Only Medium and Heavy)

Year-over-Year % Change			
Month	L3M	YTD	
January	-9%	-8%	-9%
February	2%	-5%	-5%
March	3%	-1%	-1%
April	-5%	0%	-3%
May	-16%	-6%	-5%
June	-10%	-10%	-6%
July	8%	-8%	-5%
August	-1%	-2%	-4%
September	-1%	2%	-4%
October	6%	1%	-3%
November	7%	4%	-2%
December	6%	6%	-2%
<b>January</b>	<b>10%</b>	<b>8%</b>	<b>10%</b>

Commercial Vehicle Production (Med. And Heavy)

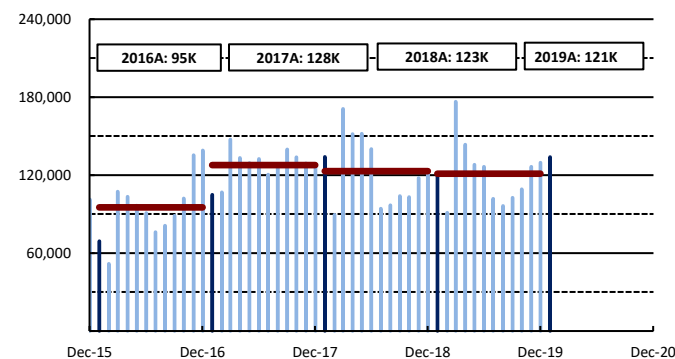
Year-over-Year % Change			
Month	L3M	YTD	
January	0%	-10%	0%
February	-12%	-7%	-5%
March	2%	-3%	-3%
April	-5%	-4%	-3%
May	-5%	-3%	-4%
June	-9%	-6%	-4%
July	-9%	-8%	-5%
August	2%	-6%	-4%
September	2%	-2%	-4%
October	11%	5%	-2%
November	20%	12%	0%
December	27%	20%	2%
<b>January</b>	<b>-9%</b>	<b>13%</b>	<b>-9%</b>
Q1 Est.	-	-5%	-

### Market Share - By Sub-Segment

	2017	2018	2019
Medium & Heavy Truck	89%	90%	90%
Medium & Heavy Bus	11%	10%	10%
<b>M&amp;H CV</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

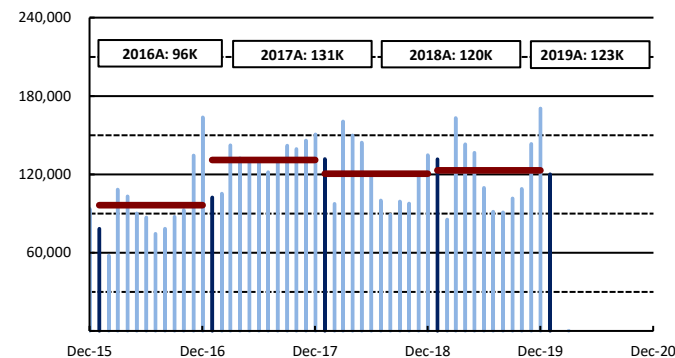
Source: LMC Automotive, Baird Estimates

### Monthly Commercial Vehicle Sales - Current Month



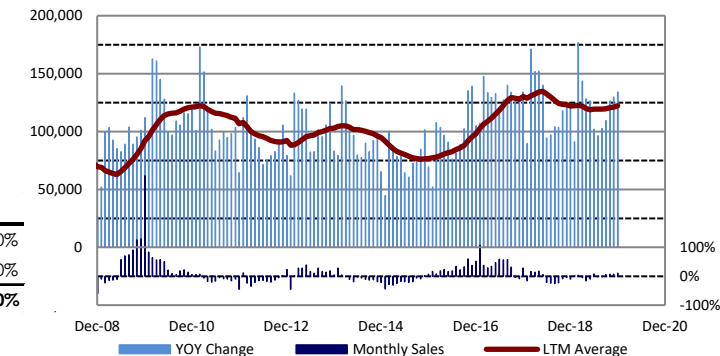
Source: LMC Automotive, Baird estimates

### Monthly Commercial Vehicle Production - Current Month



Source: LMC Automotive, Baird estimates

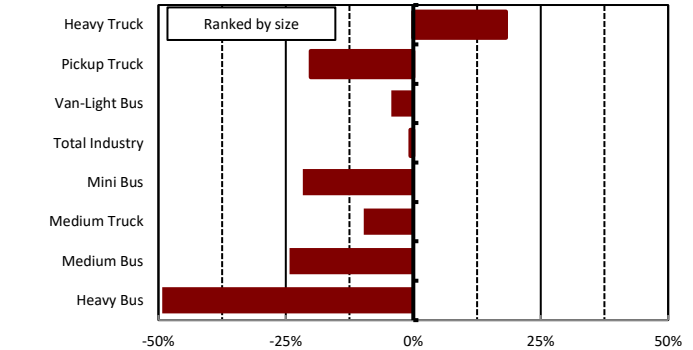
### Monthly Commercial Vehicle Sales - 2007 - Present



Source: LMC Automotive, Baird estimates

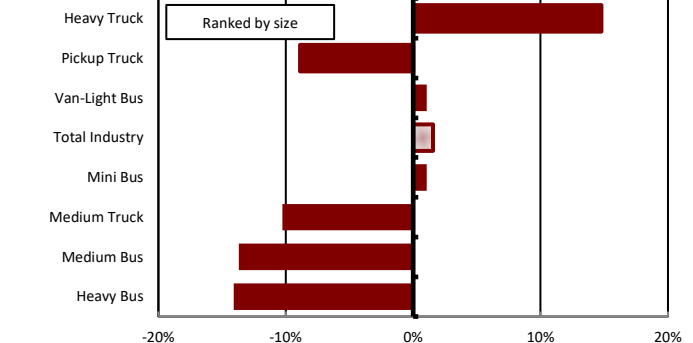
March 10, 2020

### Change in Sales by Segment - Current Month



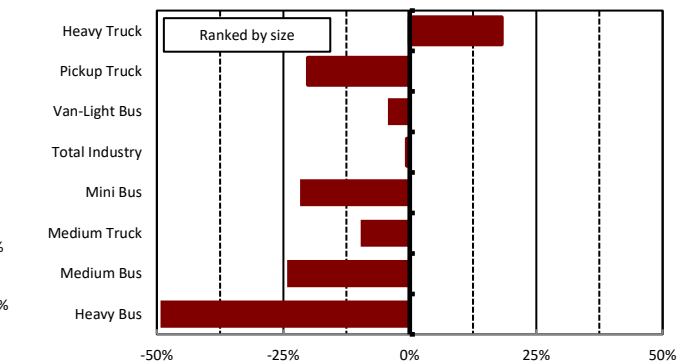
Source: LMC Automotive, Baird estimates

### Change in Sales by Segment - Last Three Months



Source: LMC Automotive, Baird estimates

### Change in Sales by Segment - Year-to-Date



Source: LMC Automotive, Baird estimates

David Leiker, CFA  
Sr. Research Analyst  
414.298.7535

[dleiker@rwbaird.com](mailto:dleiker@rwbaird.com)

Erin Welcenbach  
Sr. Research Associate  
414.298.1947

[ewelcenbach@rwbaird.com](mailto:ewelcenbach@rwbaird.com)

Please Refer to Appendix

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## Brazil Commercial Vehicle Sales & Production - February

March 9, 2020

### Trucks and Buses

#### Sales

	Month	L3M	YTD
February	70%	48%	64%
March	32%	51%	51%
April	44%	46%	49%
May	64%	46%	52%
June	39%	49%	50%
July	27%	42%	46%
August	27%	31%	43%
September	32%	29%	41%
October	21%	26%	39%
November	17%	23%	36%
December	16%	18%	34%
January	2%	12%	2%
<b>February</b>	<b>-8%</b>	<b>4%</b>	<b>-3%</b>

	Month	L3M	YTD
Light (3.5-6t)	-42%	13%	-8%
Medium (6t-15t)	-11%	-8%	-14%
Heavy (>15t)	-1%	7%	4%
<b>Total Truck</b>	<b>-7%</b>	<b>4%</b>	<b>-1%</b>
Bus	-14%	3%	-10%
<b>Total CVs</b>	<b>-8%</b>	<b>4%</b>	<b>-3%</b>

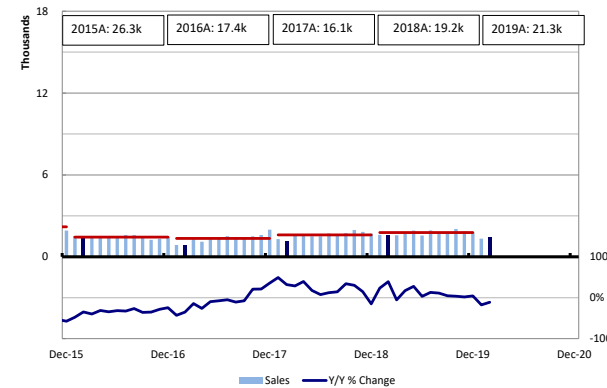
#### Production

	Month	L3M	YTD
February	23%	8%	13%
March	-22%	-1%	-1%
April	-1%	-2%	-1%
May	51%	5%	8%
June	7%	16%	8%
July	16%	23%	9%
August	6%	9%	8%
September	13%	11%	9%
October	6%	8%	9%
November	-11%	3%	7%
December	-16%	-5%	5%
January	-2%	-9%	-2%
<b>February</b>	<b>-4%</b>	<b>-7%</b>	<b>-3%</b>
Q1 Est.	-	0%	-

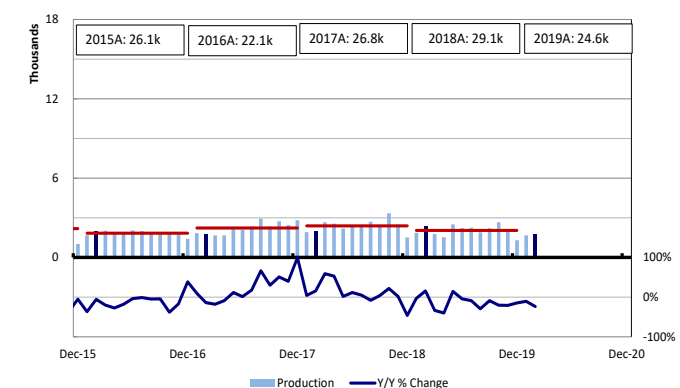
	Month	L3M	YTD
Light (3.5-6t)	-60%	-68%	-54%
Medium (6t-15t)	-22%	-14%	-16%
Heavy (>15t)	1%	-3%	5%
<b>Total Truck</b>	<b>-5%</b>	<b>-7%</b>	<b>-1%</b>
Buses	1%	-7%	-10%
<b>Total CVs</b>	<b>-4%</b>	<b>-7%</b>	<b>-3%</b>

### Sales

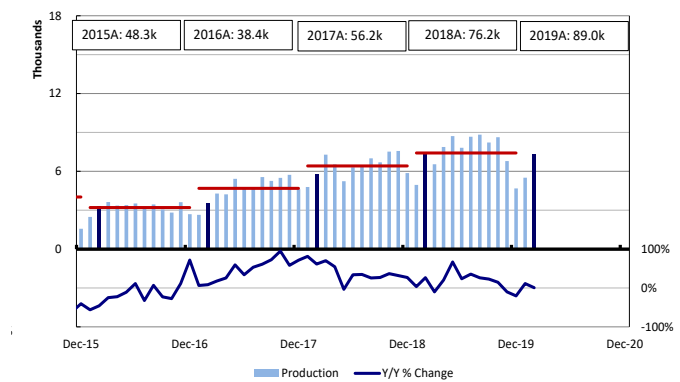
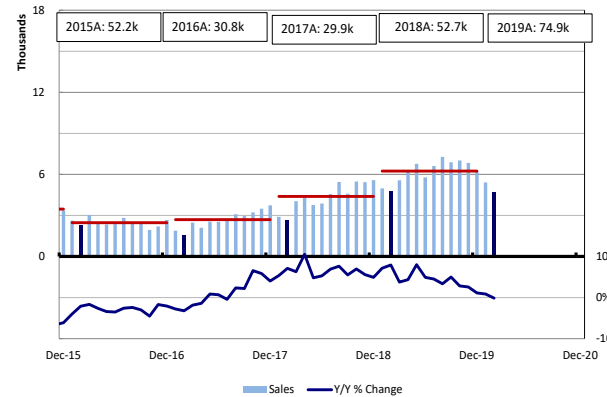
#### Light/Medium Trucks (3.5-15t)



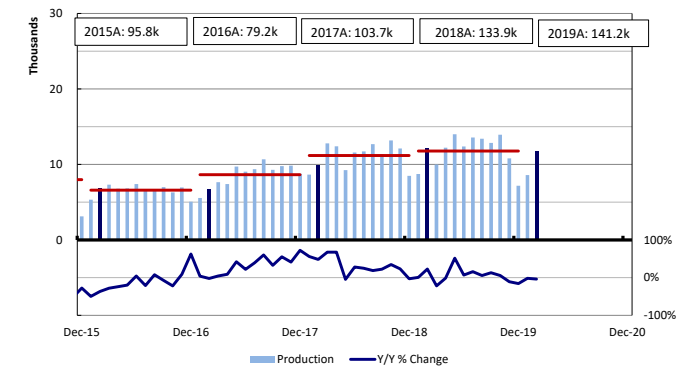
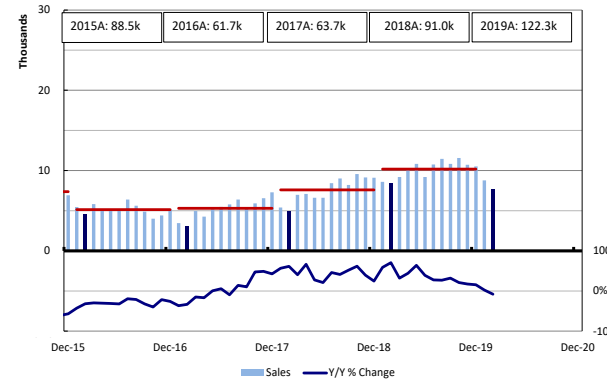
### Production



#### Heavy Trucks (> 15t)



#### Total Commercial Vehicle (Trucks & Buses)



Source: ANFAVEA, Ward's Automotive, Baird Estimates

David Leiker, CFA

Sr. Research Analyst

414.298.7535

[dleiker@rwbaird.com](mailto:dleiker@rwbaird.com)

Erin Welcenbach

Sr. Research Associate

414.298.1947

[ewelcenbach@rwbaird.com](mailto:ewelcenbach@rwbaird.com)

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# Commercial Vehicles Secular Themes – Safety

2025 Market Size = \$6 billion/5% CAGR

- Allison Transmission
- Continental
- Mobileye
- Knorr-Bremse
- WABCO



## Rising Safety Standards

- United States
  - Shorter stopping distance driving demand for next-generation drum brakes and greater adoption of disc brakes
  - Market demand driving adoption of stability control (with regulation after August 2017 in US) and emergency braking
- Europe
  - Emergency braking mandated for all new platforms in November 2013 and all new vehicles in November 2015
- Market-driven demand driving penetration of advanced safety:
  - ABS, traction/stability control
  - Crash detection/avoidance
  - Emergency stopping, driver assistance

## Global Safety Standards

	2016	2017	2018	2019	2020	2021	2022
Europe	AEB / LDW (All Vehicles)			VRUD*			
US	ESC (HCVs)			AEB*			
Japan	AEB / ESC / RSS (HCVs)		LDW*				
Brazil						ESC*	
Russia	ESC (HCVs)						
India	ABS (HCVs)	ABS (Trailers)					
China	ABS (HCVs)		ESC / FCW / LDW / AEB / ADB		EBS*		LKA*

Definitions

ESC = Electronic Stability Control  
 RSS = Roll Stability Control  
 ABS = Anti-lock braking system  
 EBS = Electronic braking system  
 ADB = Air disc brakes

LDW = Lane Departure Warning  
 LKA = Lane Keep Assist  
 AEB = Autonomous Emergency Braking  
 VRUD = Vulnerable Road User Detection  
 \* = indicates proposed legislation

Source: ACEA, Autoliv, WABCO

# Commercial Vehicles Secular Themes – Fuel Efficiency and Emissions

2025 Market Size = \$90 billion/4% CAGR

- Delphi Tech
- Cummins
- WABCO
- Modine



## Fuel Efficiency and Emissions

- US phased in higher fuel economy standards in 2014/2017 requiring 20% cumulative improvement
- Europe saw last change in emission standards (Euro 6) at the start of 2014 – fuel standards are next
- Other regions of the world are moving to reduce fuel consumption and adopt Euro 6 emission standards:
  - China: Euro 5 in 2017
  - Brazil: Euro 6 in 2018
  - India: Euro 4 in 2017

## Fuel Efficiency and Emission Paths

- Powertrain and fuel technologies
- Weight reduction and aerodynamics
- Reduce friction and parasitic losses
- Fuels: Hybrid/electric and NatGas

## Global Emission Standards

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Europe			Euro 5				Euro 6						
China							NS4			NS5		NS6	
India				Euro 3						BS4		BS5	
Korea			Euro 4		Euro 5			Euro 6					
Russia					Euro 4		Euro 5						
Brazil					Euro 5						Euro 6		
Argentina							Euro 4		Euro 5				
Australia				Euro 5						Euro 6			

Euro 2   Euro 3   Euro 4   Euro 5   Euro 6

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
US/Canada			EPA 10				GHD 14			GHD 17			
Mexico	EPA 04						EPA 07						

EPA 04   EPA 07   EPA 10   GHD 14   GHD 17

Source: Cummins

# Commercial Vehicles

## Secular Themes – Emerging Markets

2025 Market Size = \$83 billion/3% CAGR

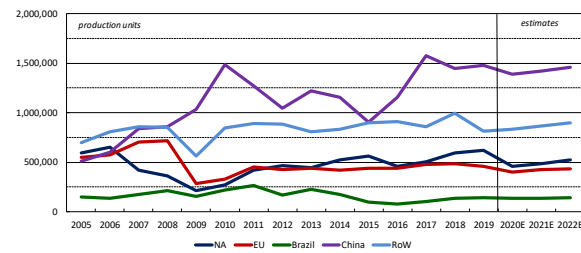
### Emerging Markets – Now Sidetracked

- Long term, emerging markets outgrow developed markets
- The “Westernization” of fleets in China/India drives content/share growth for Western OEMs/suppliers
  - China: DongFeng-Volvo, SinoTruk-MAN
  - Beiqi and Baotou-Daimler
  - JAC-Cummins, SAIC-Fiat
  - Chongqing, Dongfeng, and Beiqi-Cummins
  - India: Mahindra, Tata, Ashok-Leyland, Eicher
- Brazil economy driven by consumerization of “middle class”
- Eastern Europe, Russia, SE Asia offer long-term growth opportunities despite near-term pressure in Russia/Turkey
- China used to export to SE Asia

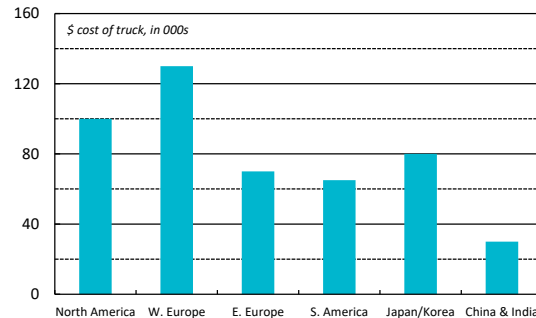
- Allison Transmission
- Cummins
- Modine
- Volvo AB
- WABCO

BAIRD

### End-Market Growth



### Value of Vehicles



Source: WABCO, ACT Research, Baird estimates

# Commercial Vehicles

## Secular Themes – North America Cycle Rolling Over

2025 U.S. Market Size = \$58 billion/-1% CAGR

### North American Medium-Duty orders bottoming; expect 2020 sales of 250,000 units

- Medium-duty orders declined 28% yoy in Q4, though yoy declines moderated in Dec (-11%) and Jan (-14%); inventory still elevated

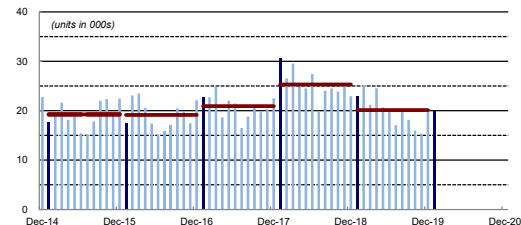
### Class 8 orders declined 36% yoy in Q4, a sequential improvement from the Q3 pace

- In past cycles, truck stocks have re-rated higher as NTM earnings revisions bottom and Class 8 orders demonstrate continued sequential improvement
- However, we believe some of the coronavirus-related freight disruptions are likely to weigh on the spot recovery in freight markets, potentially pushing out the timing of a more meaningful order recovery

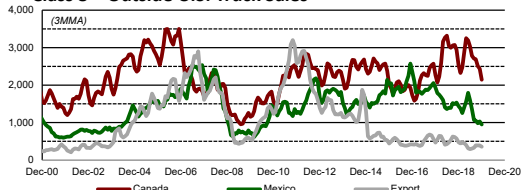
- Allison
- Navistar
- PACCAR
- Comm. Vehicle Gr.
- Volvo AB
- WABCO
- Modine

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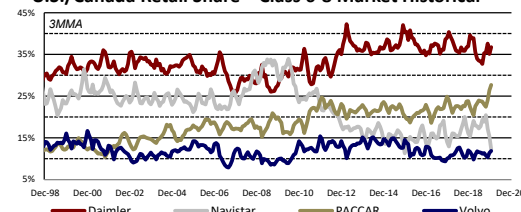
### North America Class 5-7 – Orders



### Class 8 – Outside U.S. Truck Sales



### U.S./Canada Retail Share – Class 6-8 Market Historical

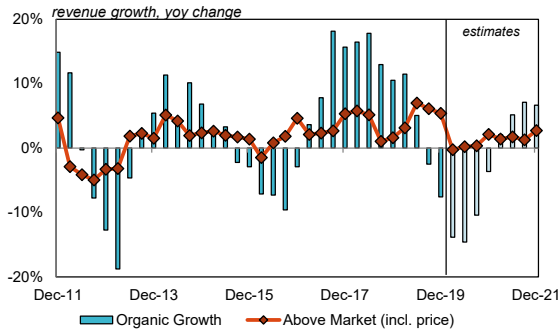


Source: ACT Research, EPA, Baird estimates

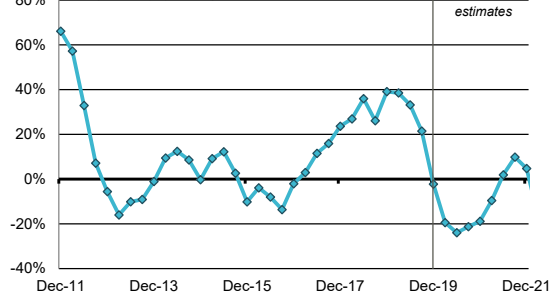
# Commercial Vehicles Stock Drivers

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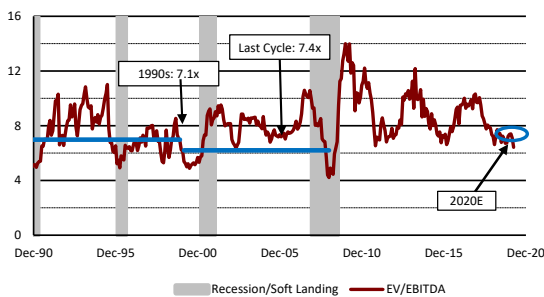
Commercial Vehicle Organic Growth/Growth Above Market



Commercial Vehicle EPS Growth – Historical and Estimated

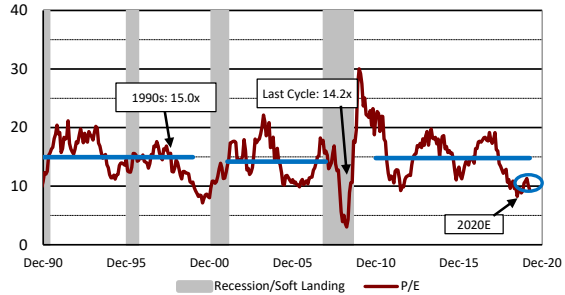


Valuation: EV/EBITDA



Global Auto & Truck Markets

Valuation: P/E



Source: Company reports, ACT Research, FactSet, Baird estimates

# Commercial Vehicles Key Investment Risks

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## Allison Transmission

**Key risks:** 1) volume and adoption in the "core" N.A. commercial vehicle market; 2) competitive transmission offerings (manuals and AMTs); 3) sustainability of premium pricing/margin profile; 4) exposure to oil & gas (fracking) markets; 5) leverage; and 6) premium valuation.

## Cummins

**Key risks:** 1) the cyclical nature of commercial truck markets; 2) effectively meeting current and upcoming emissions, CO2, and fuel efficiency regulations; 3) customer acceptance of internal engines; 4) raw material costs; 5) modeling risk.

## Modine Manufacturing

**Key risks:** 1) execution risk; 2) global vehicular end markets; 3) rising raw material costs; 4) modeling risk; 5) major customers/programs; and 6) post-retirement liabilities.

## Navistar

**Key risks:** 1) cyclical end markets; 2) emissions regulations; 3) fuel economy/CO2 regulations; 4) shift in engine strategy; 5) credit markets/availability; 6) raw material prices; 7) post-retirement liabilities; and 8) modeling risk.

## PACCAR

**Key risks:** 1) cyclical end markets; 2) commodity prices; 3) credit markets and credit availability; 4) loan portfolio performance; 5) post-retirement liabilities; 6) foreign exchange; and 7) premium market position.

## AB Volvo

**Key risks:** 1) cyclical end markets; 2) foreign exchange; 3) commodity risk; 4) credit markets/availability; 5) residual value risk; 6) union labor agreements; 7) government emissions/fuel efficiency regulations; 8) dual-class share structure; 9) modeling risk; and 10) post-retirement liabilities.

## WABCO

**Key risks:** 1) the cyclical nature of European/North American commercial vehicle markets; 2) contractual price reductions; 3) major customers; 4) costs to develop new technologies, enter new markets; 5) foreign exchange; 6) rising commodity prices; and 7) post-retirement liabilities.

# Adient plc (ADNT)

**Price (3/12/20):** \$13.97

**Rating/Suit:** **Neutral / Higher Risk**

**Target Price:** \$27  
4.9x Cal-2022E EBITDA, median of 3-4 yr trading range for global seating peers, plus equity income/share at 8x earnings, discounted at 20%. We believe median is appropriate given potential end market improvement.

## Size (in millions)

Market Cap	\$1,310
Enterprise Value	\$5,087
Sales	\$16,590
Daily Trading Volume	\$21

## Fundamentals

Net Debt/EBITDA (LTM)	5.47x
FCF Yield (2020 Est.)	0.40%
Pre-Tax ROA	4.56%
Dividend Yield:	0.00%

**BAIRD**

## Competitors:

Lear, Faurecia, Toyota Boshoku, Magna

## Company Description:

Headquartered in Dublin, Ireland, Adient is the world's largest automotive supplier of seats and interiors. The company has 85,000 employees with 234 locations in 34 countries. Adient has ~34% global market share in automotive seats, including roughly 45% market share in China.

## Business Model Strengths:

**The global leader in automotive seating and interiors.** Adient's position as the largest supplier of complete seats, seating components, and interior systems (via its 30% ownership in Yanfeng Automotive Interiors) positions the company to capitalize as automakers source global platforms from suppliers with manufacturing and technical capability around the world.

**Strong China exposure.** China revenue (on an unconsolidated basis) is approximately \$8 billion, with Adient commanding approximately 45% market share. The company has a strong competitive position with both foreign and domestic Chinese OEMs.

**Content opportunities.** We believe there are content opportunities that will allow the seating industry to outpace overall market demand. These include adding components to the full seat assembly, a trend toward a higher mix of crossover and SUV sales globally, and an increase in luxury/comfort features for passengers.

**Long-term margin expansion opportunity.** While margins are pressured near-term (headwinds in Seat Structures & Mechanisms business, inability to achieve some spin-related cost take-out), over time, we expect Adient to return margins closer to pre-spin levels.

## Headwinds:

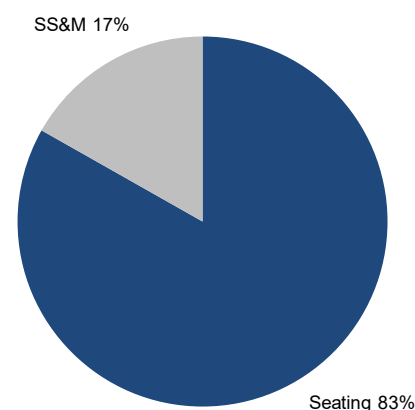
Global auto production, timing of earnings inflection, depressed near-term free cash flow.

## Investment Risks:

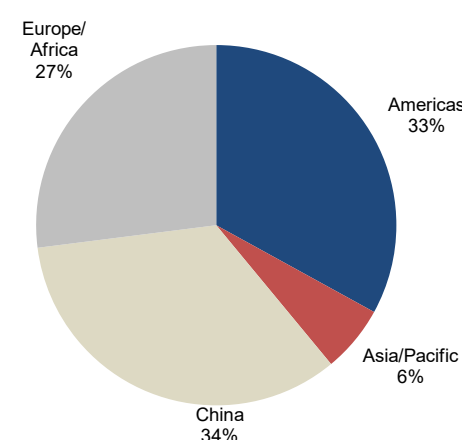
Cyclical end markets, exposure to major OEMs, new program launches, restructuring, raw materials, supplier disruption, and FX.

## Revenue Profile (FY2019):

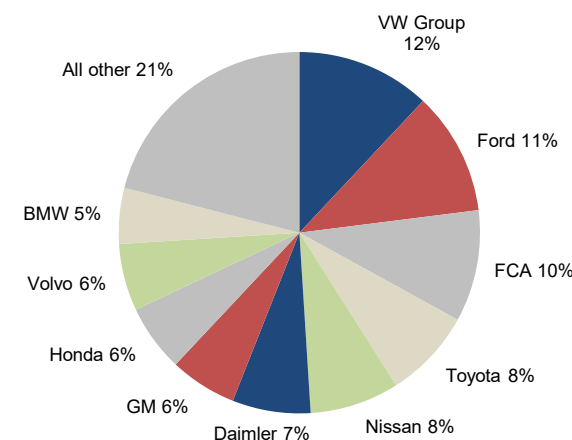
### Seating Product Sales:



### Geography:



### Customers:

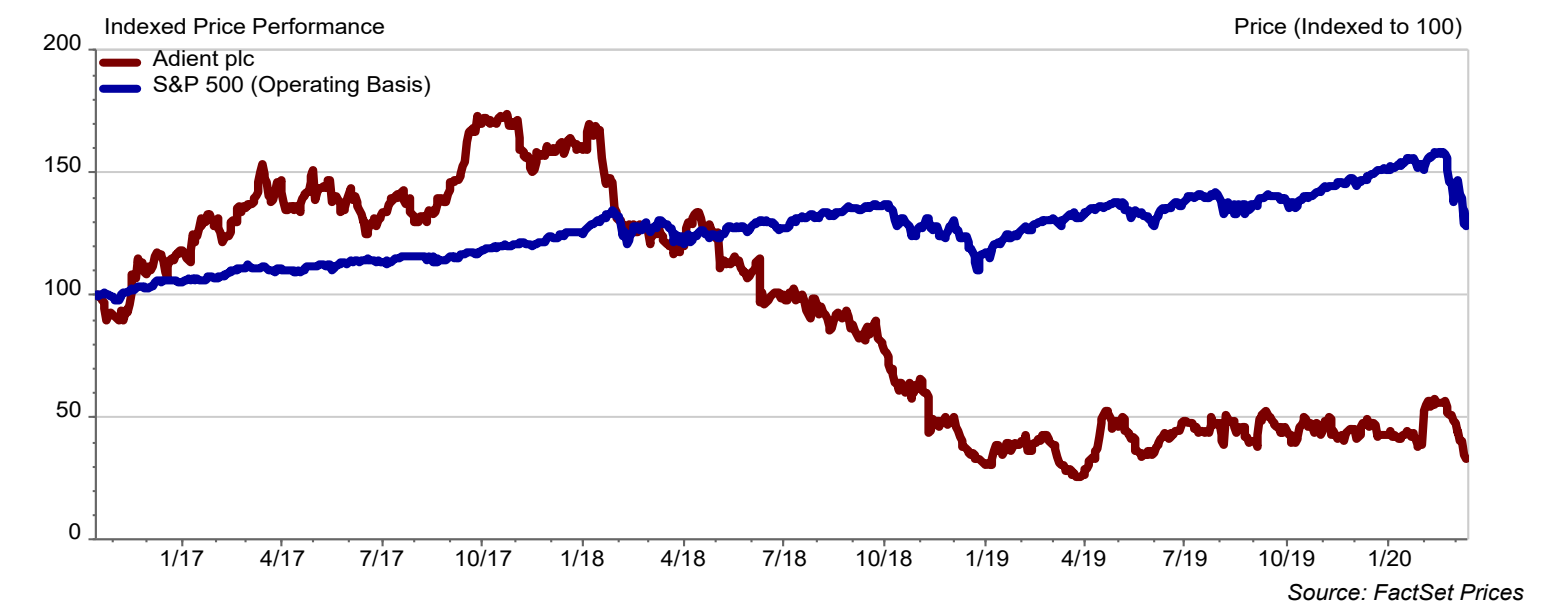


\*Geography and Customer details includes consolidated and non-consolidated revenue

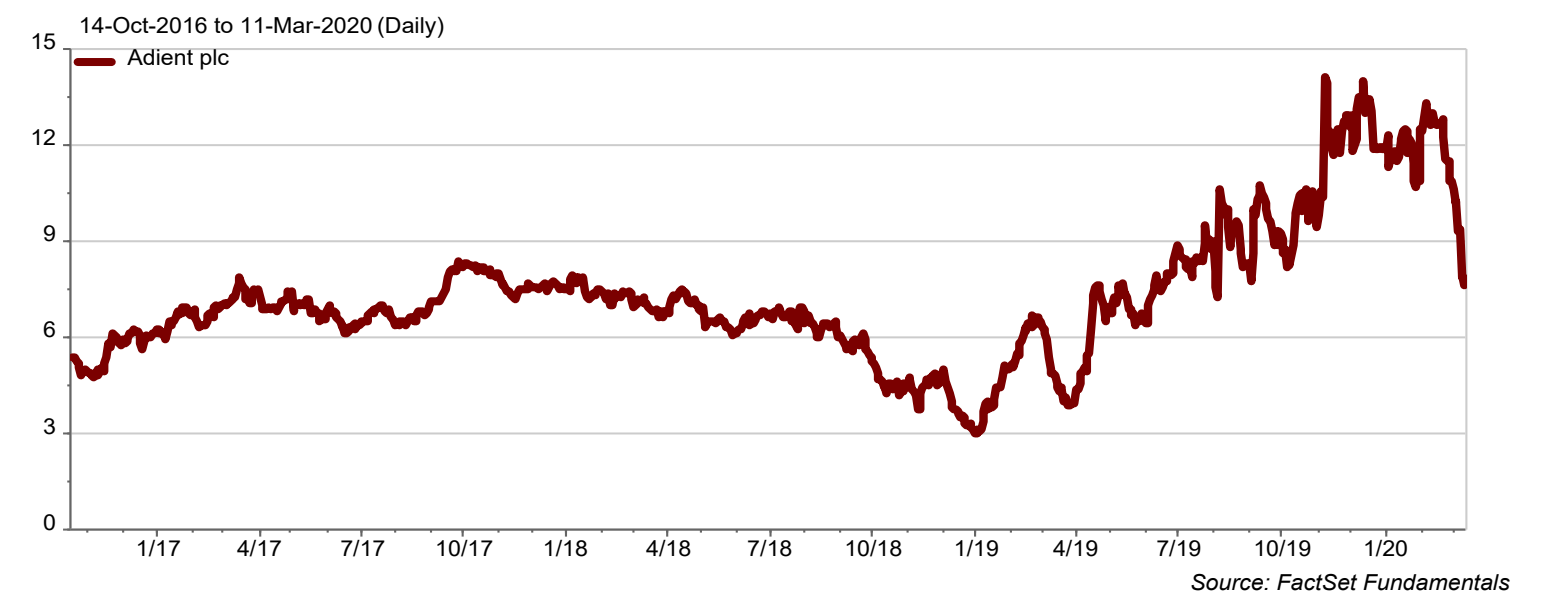
## Financial Summary (September):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
<b>Revenue</b>	16,246	17,314	16,590	15,667	15,650
% chg	-3%	7%	-4%	-6%	0%
<b>Baird Revenue Est:</b>	-	-	-	15,697	16,060
<b>EBITDA</b>	1,199	1,200	787	890	971
% margin	7.4%	6.9%	4.7%	5.7%	6.2%
<b>EBIT</b>	1,256	770	410	566	640
% margin	7.7%	4.4%	2.5%	3.6%	4.1%
<b>EPS</b>	\$9.48	\$5.66	\$1.63	\$1.86	\$2.51
% chg	10%	-40%	-71%	14%	35%
<b>Baird EPS est:</b>	-	-	-	\$2.11	\$2.88
<b>P/E Multiple:</b>	-	-	-	7.51x	5.57x

## Stock Chart - from Oct 15, 2016



## Historical P/E - NTM





# Allison Transmission (ALSN)

**Price (3/12/20):** \$33.49 (\$35 - \$49)  
**Rating/Suit:** **Outperform/ Higher Risk**  
**Target Price:** \$58 10.0x Cal-2022E EBITDA, equal to valuation observed at prior cyclical recoveries, discounted by 15%.

## Size (in millions)

Market Cap \$3,944  
Enterprise Value \$6,578  
Sales \$2,698  
Daily Trading Volume \$37

## Fundamentals

Net Debt/EBITDA (LTM) 2.06x  
FCF Yield (2020 Est.) 8.80%  
Pre-Tax ROA 13.62%  
Dividend Yield: 1.35%

BAIRD

## Competitors:

**Automatic Competitors:** Aisin, Caterpillar, Twin Disc, Voith, ZF; **Manual/AMT Competitors:** Eaton, Ford; also faces competition from OEM vertical integration

## Company Description:

Headquartered in Indianapolis, Indiana, Allison is the world's largest supplier of fully automatic transmissions for medium- and heavy-duty commercial vehicles, tactical U.S. military vehicles, and hybrid-propulsion systems for transit buses. In 2017, the company accounted for roughly 60% of automatic transmissions for medium- and heavy-duty on-highway commercial vehicles sold globally.

## Business Model Strengths:

**Premium product, premier brand.** Well-known brand throughout the commercial vehicle space, commanding a premium price while maintaining a dominant market position in serviced markets.

**Attractive margin profile.** Allison is the leading provider of automatic transmissions, enabling strong pricing power; long-term supply agreements often stipulate annual price increases.

**Strong free cash flow.** High profitability, traditionally low capital expenditure needs, and limited cash income tax obligations create strong free cash flow.

**Opportunities to increase penetration.** Globally, penetration of automatic transmissions in commercial vehicles is under 10% (5% in Europe and less than 5% in the emerging markets).

**New market opportunities.** Class 4/5 trucks and the Class 8 "metro" market are several markets Allison is targeting, along with China On-Highway and International Energy.

## Headwinds:

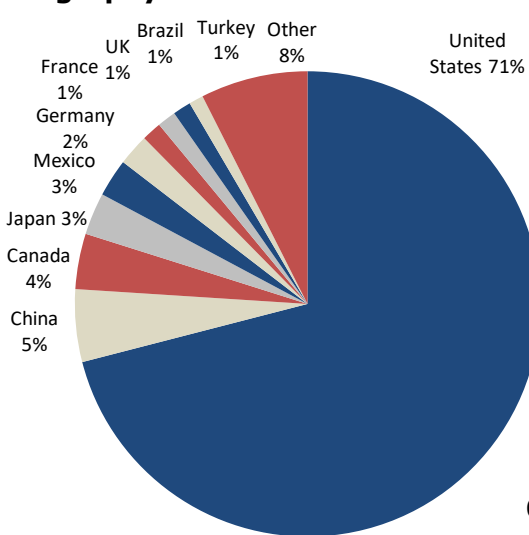
Hybrid bus markets, slower traction in the Class 8 "Metro" market, and automation of manuals.

## Investment Risks:

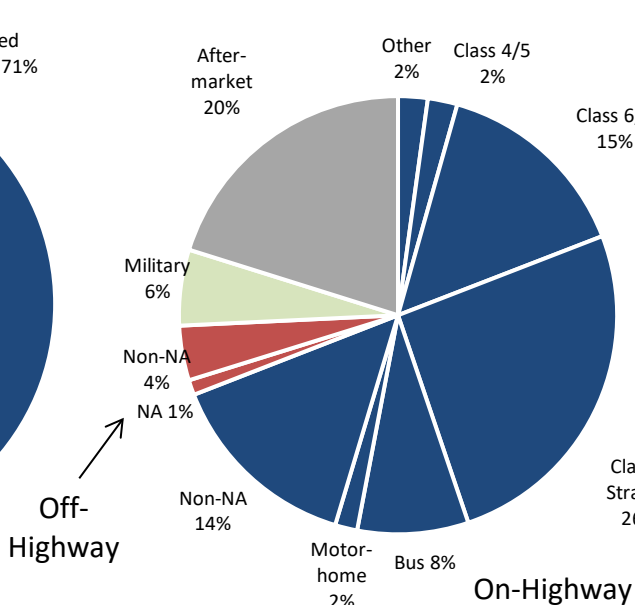
Increasing competition from AMTs, exposure to key customers, cyclical nature of core on-highway truck markets and off-highway mining/energy markets, ability to meet future debt obligations, premium valuation, and the potential impairment of intangible assets.

## Revenue Profile (FY2019):

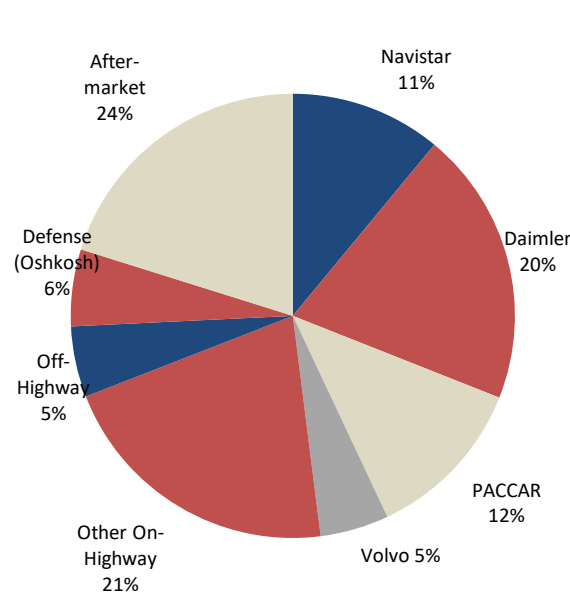
### Geography:



### End Markets:



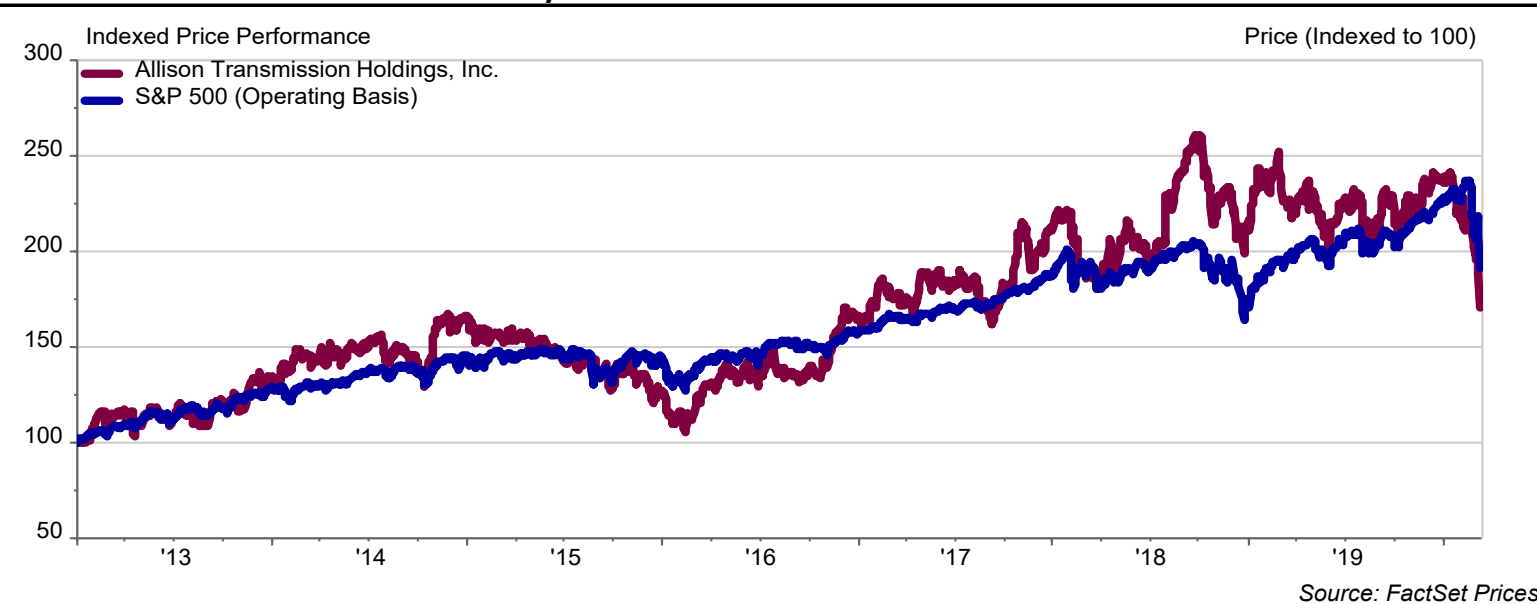
### Customers:



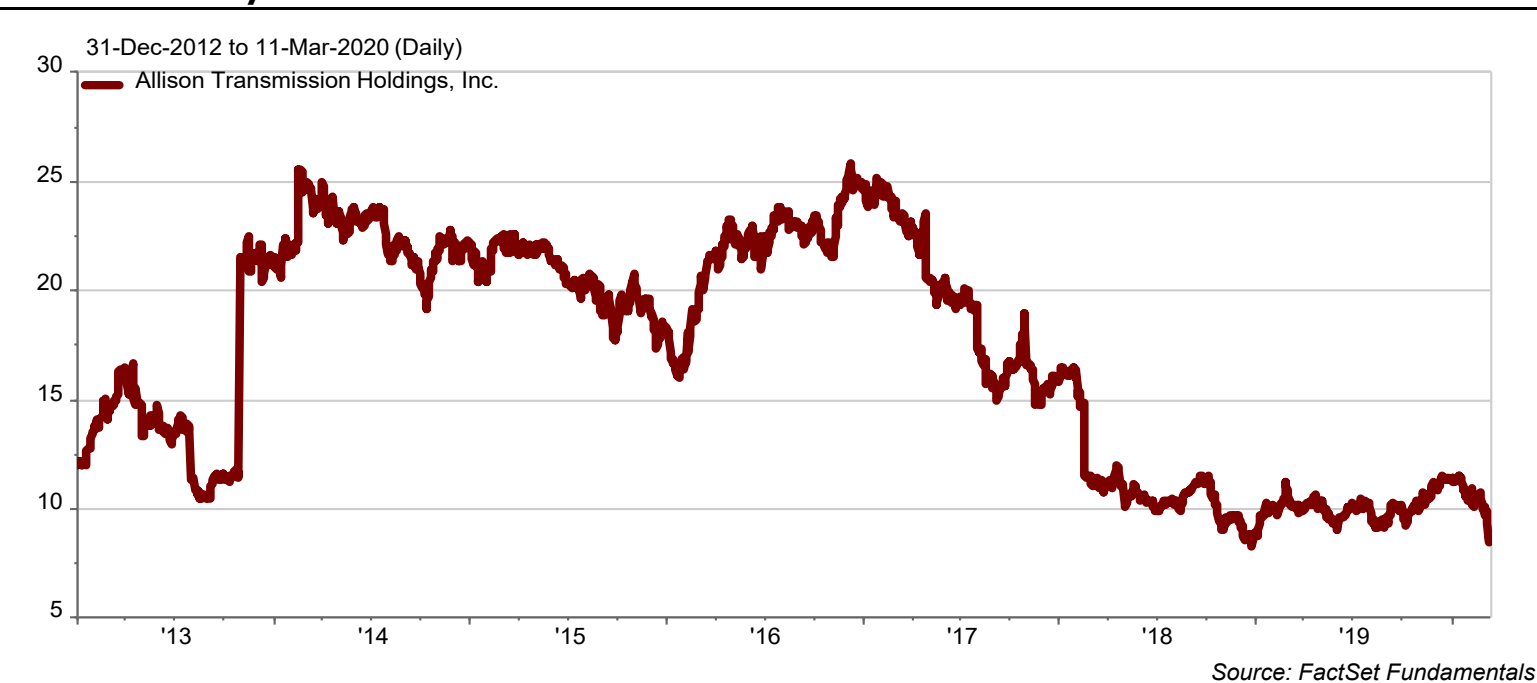
## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
Revenue	2,262	2,713	2,698	2,444	2,508
% chg	23%	20%	-1%	-9%	3%
Baird Revenue Est:				2,441	2,556
EBITDA	868	1,133	1,086	909	969
% margin	38.4%	41.8%	40.2%	37.2%	38.6%
EBIT	674	921	894	726	772
% margin	29.8%	34.0%	33.1%	29.7%	30.8%
EPS	\$3.57	\$6.19	\$8.79	\$4.90	\$5.34
% chg	36%	73%	42%	-44%	9%
Baird EPS est:	-	-	-	\$5.22	\$5.93
P/E Multiple:	-	-	-	6.84x	6.27x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



# Autoliv (ALV)

**Price (3/12/20):** \$53.74 (\$58 - \$87)  
**Rating/Suit:** **Neutral / Average Risk**  
**Target Price:** \$84  
7.4x 2022E EBITDA, the median of the 3-4 yr trading range, discounted by 15%. We believe the median is appropriate given the potential for improving end market volumes.

**Size (in millions)**  
Market Cap \$4,689  
Enterprise Value \$7,147  
Sales \$8,548  
Daily Trading Volume \$27

**Fundamentals**  
Net Debt/EBITDA (LTM) 1.61x  
FCF Yield (2020 Est.) 7.42%  
Pre-Tax ROA 11.68%  
Dividend Yield: 3.37%

BAIRD

## Competitors:

Key Safety Systems (including Takata), ZF-TRW, Tokai Rika

## Company Description:

Headquartered in Stockholm, Sweden, Autoliv develops and manufactures integrated safety systems including airbags (52% of 2017 revenue), seat belts (34%), and steering wheels (13%).

## Business Model Strengths:

**Passive safety leadership.** Its sales account for approximately 40% of the global passive safety market, approximately 50% higher than the next-largest competitor (Key Safety Systems/Takata).

**Growth in safety content.** Countries with the highest growth rates in car ownership (China, India, Brazil) also have safety content one-third to one-half the content of NA/Europe.

**One of the most extensive footprints in the industry.** The company maintains local seatbelt and airbag production facilities in every major global market.

**Leading share in emerging markets** (China: 35%, Brazil: ~40%, India: ~50%), which are expected to generate over half of the growth in auto demand in the next five years.

**Diversified end-market mix.** Autoliv generates about one-third of its revenue from each of Europe, Americas, and Asia.

**Cash flow.** Expected to generate significant free cash flow in the next couple of years (\$8-9 per share), which we expect to be used for buybacks, dividends, and reinvestment in the business.

## Headwinds:

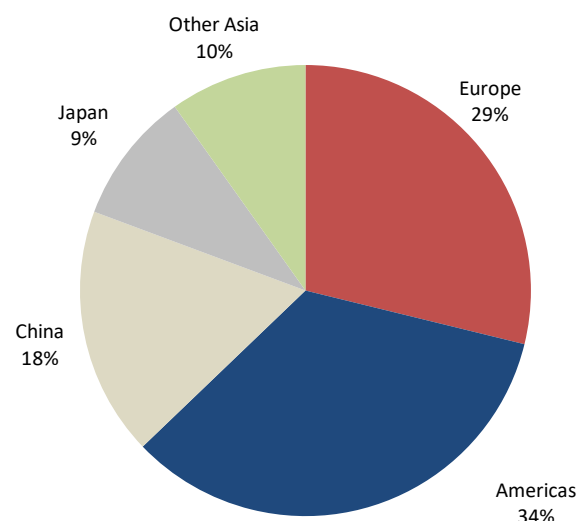
Global auto production, conversion from orders to profits, conflicting views on content growth.

## Investment Risks:

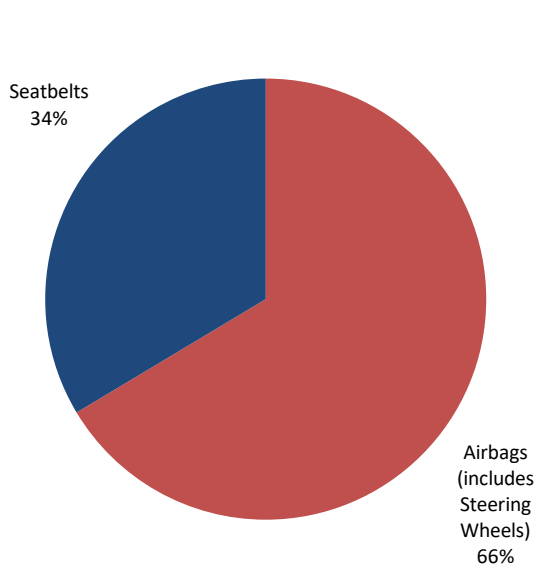
End-market demand, premium safety take rates, demand for Japanese OEMs within the Chinese market, FX, commodities, resolution of the EU price fixing probe, new technology advancements. Risk to Underperform rating: better-than-expected market share gains, stabilizing global auto production.

## Revenue Profile (FY2019):

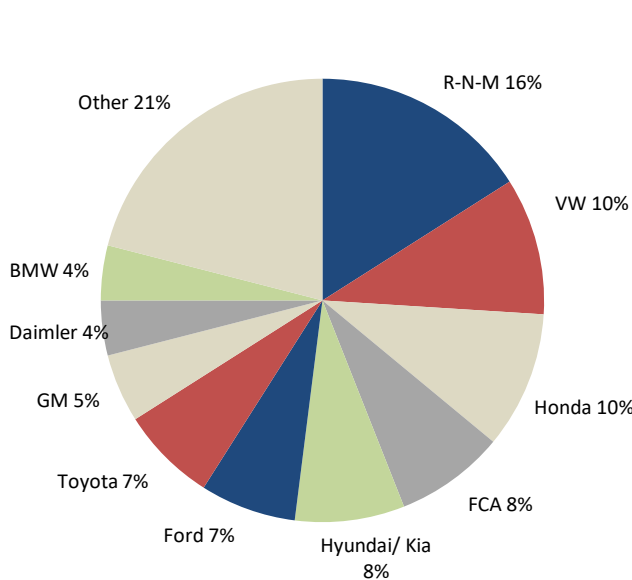
### Geography:



### End Markets:



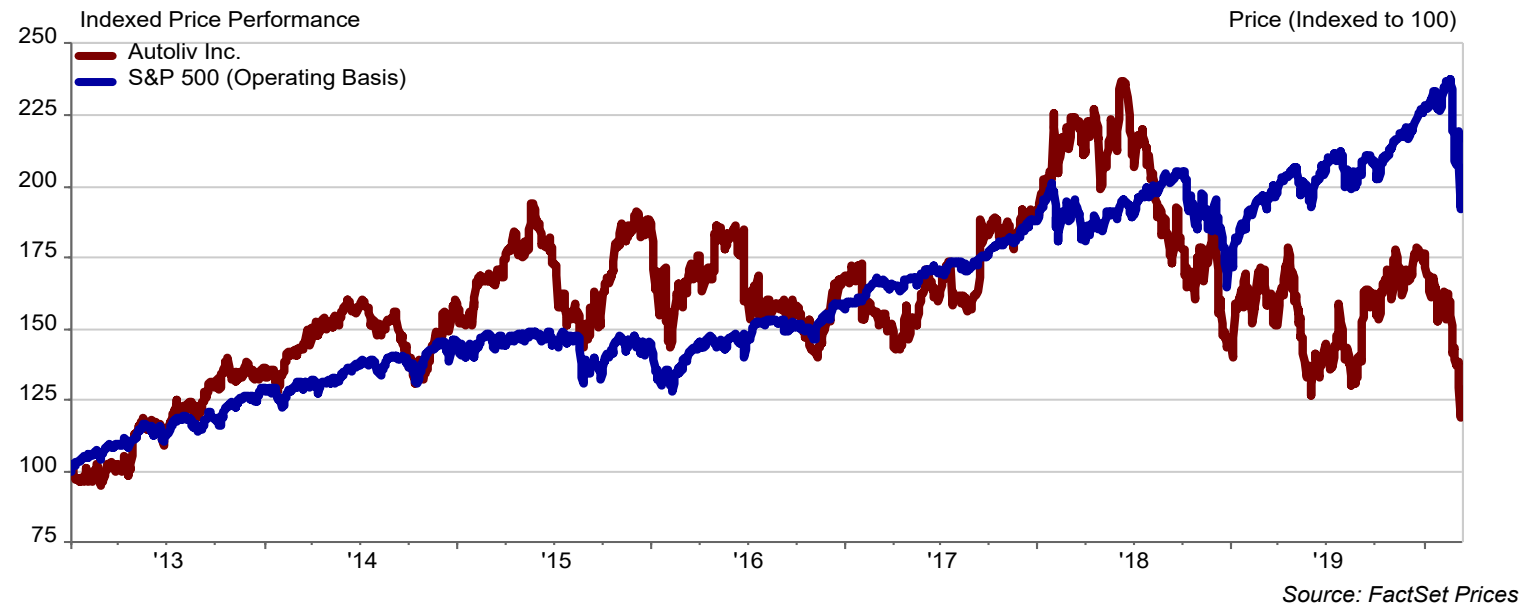
### Customers:



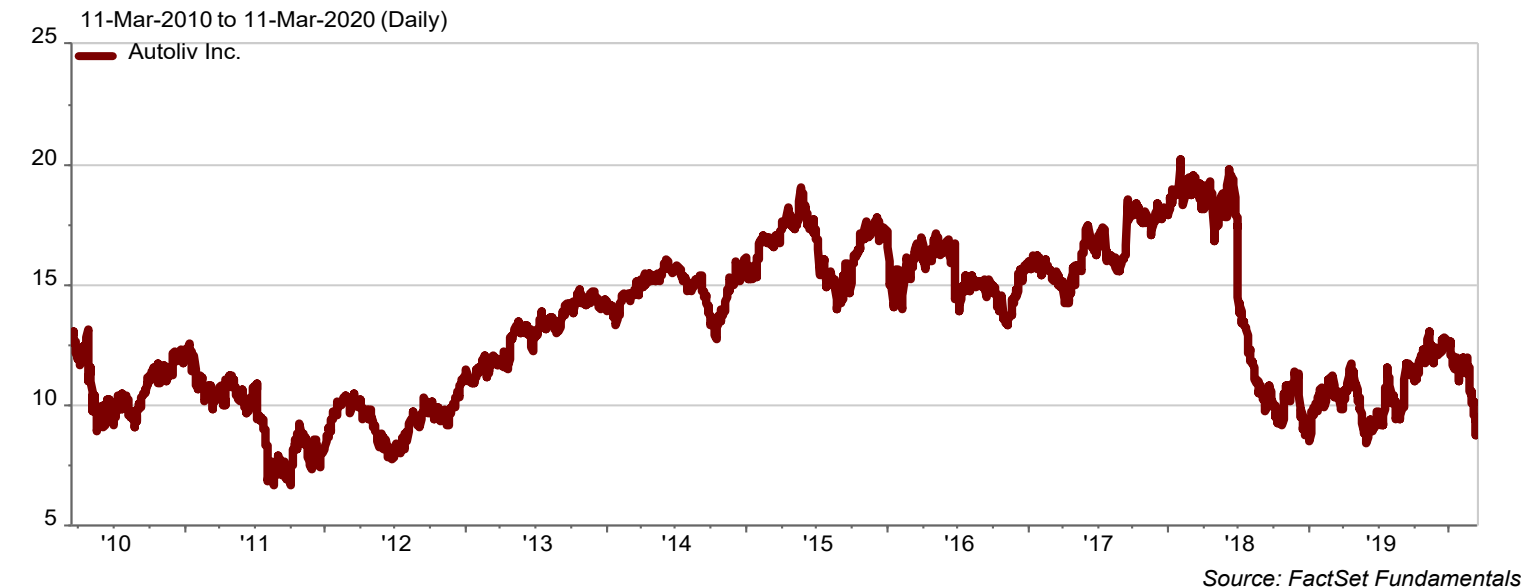
## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
Revenue	8,137	8,802	8,548	8,763	9,237
% chg	3%	8%	-3%	3%	5%
Baird Revenue Est:				8,860	9,268
EBITDA	1,197	1,285	1,109	1,194	1,327
% margin	14.7%	14.6%	13.0%	13.6%	14.4%
EBIT	890	908	773	840	953
% margin	10.9%	10.3%	9.0%	9.6%	10.3%
EPS	\$6.99	\$7.04	\$5.72	\$6.36	\$7.32
% chg	6%	1%	-19%	11%	15%
Baird EPS est:	-	-	-	\$6.43	\$7.27
P/E Multiple:	-	-	-	8.36x	7.39x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 13.7x LTM EPS

# Aptiv PLC (APTV)

**Price (3/12/20):** \$60.75 (\$64 - \$98)

**Rating/Suit:** **Outperform/ Average Risk**

**Target Price:** \$110 Our \$110 target price is based on 10.8x 2022E EBITDA, median valuation of the current-cycle range, plus autonomous driving JV equity income at 8.0x 2025 EV/Sales, discounted by 10% to arrive at a 12-month target.

## Size (in millions)

Market Cap	\$15,505
Enterprise Value	\$21,679
Sales	\$14,357
Daily Trading Volume	\$93

## Fundamentals

Net Debt/EBITDA (LTM)	2.02x
FCF Yield (2020 Est.)	5.37%
Pre-Tax ROA	11.01%
Dividend Yield:	0.98%

**BAIRD**

## Competitors:

**Active Safety/Autonomous Driving:** Apple, Bosch, Conti, Cruise, Denso, Intel, Magna, Mobileye, Nvidia, Uber, Veoneer, Visteon, Waymo

**Infotainment/User Experience:** Bosch, Conti, Denso, Harman, Panasonic, Veoneer, Visteon, ZF

**SPS Segment:** Lear, Leoni, Molex, Sumitomo, TE Connectivity, Yazaki

## Company Description:

Aptiv PLC (headquartered in Dublin, Ireland) is at the forefront of bringing a wide range of smart mobility solutions to market, including autonomous driving, next-gen power/signal distribution networks, centralized computing platforms, and solutions for Mobility-on-Demand.

## Business Model Strengths:

**Leading technology portfolio.** Aptiv has a leading technology portfolio at the forefront of bringing a wide range of smart mobility solutions to market.

**New technologies target rapidly growing TAMs.** Aptiv's product portfolio is levered to high growth sectors within automotive, focused on hardware, software, integration, signal/power distribution, and data analytics.

**Bookings support future revenue growth.** Aptiv has delivered strong bookings growth in key growth technologies (e.g., ADAS/autonomous driving, connectivity) supporting accelerating revenue growth in 2020.

**Strong free cash flow converter.** We expect Aptiv to generate significant free cash flow as the company converts cash at an ~85% rate. Excess cash will be deployed to fund dividends, share repurchases, and strategic M&A (including additional technology investments).

## Headwinds:

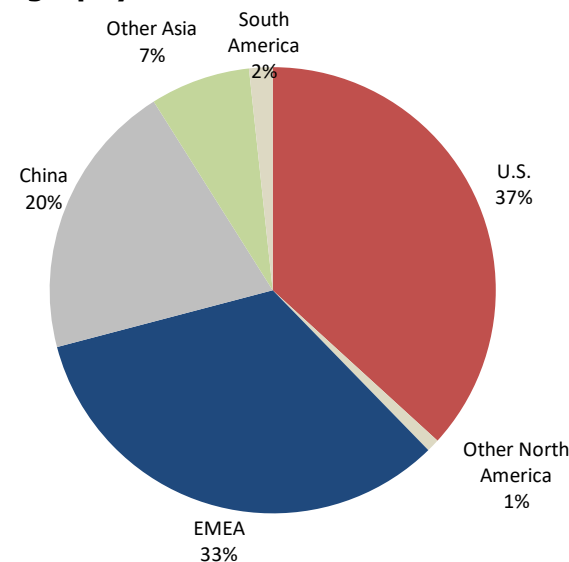
Global auto production, higher commodity prices (copper) and currency (strong dollar).

## Investment Risks:

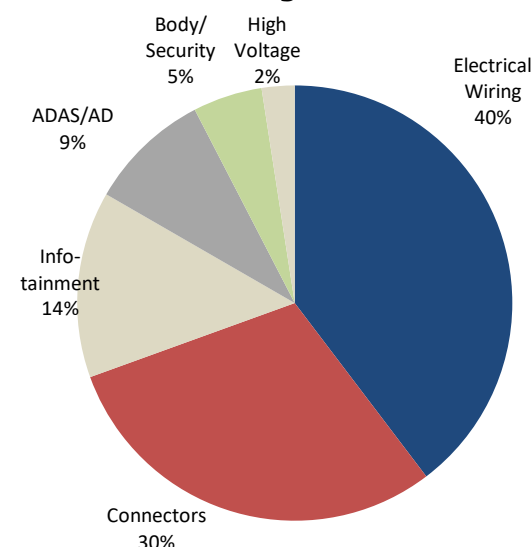
The technology landscape, pace of technology development/adoption, execution, exposure to cyclical automotive end markets, a concentrated customer base, and foreign currency exposure.

## Revenue Profile (FY2019):

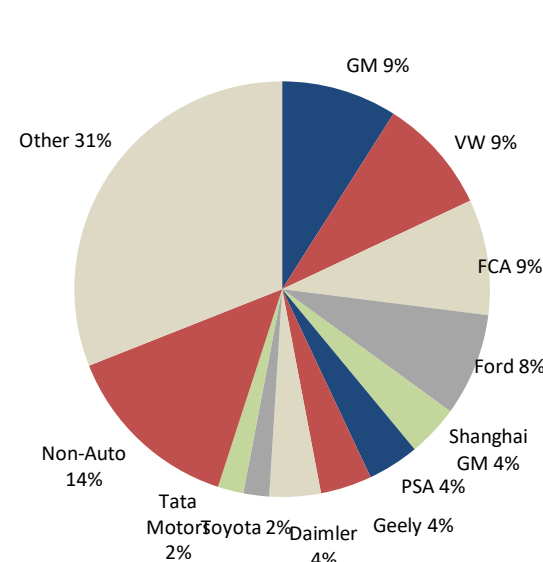
### Geography:



### Product Categories



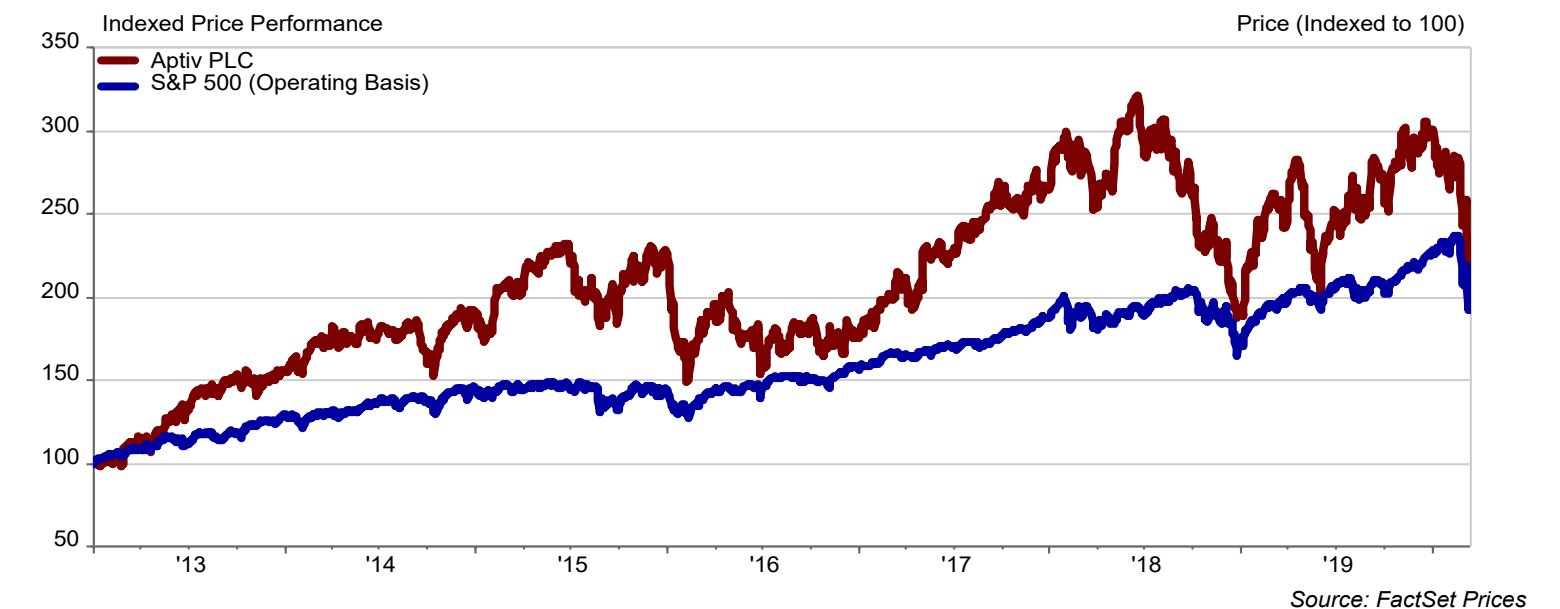
### Customers:



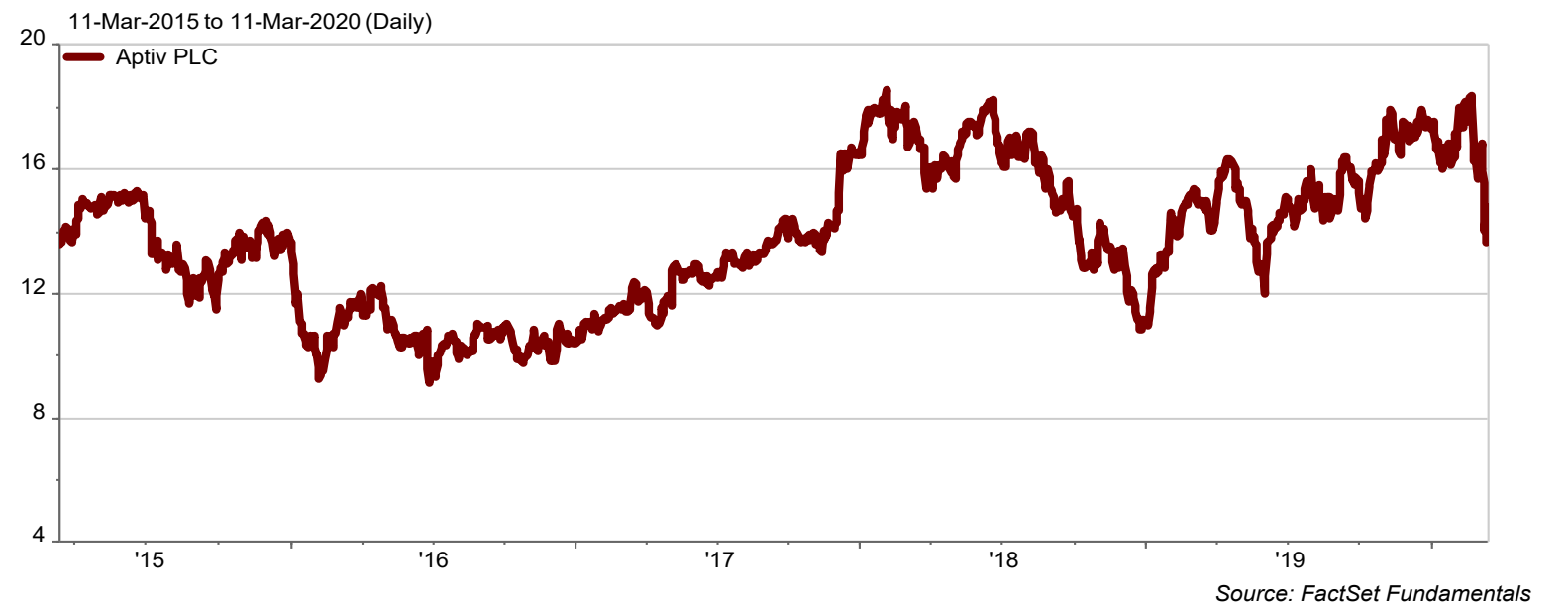
## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates 2020E	2021E
<b>Revenue</b>	12,884	14,435	14,357	14,675	15,666
% chg	6%	12%	-1%	2%	7%
<b>Baird Revenue Est:</b>				14,692	15,979
<b>EBITDA</b>	2,175	2,389	2,265	2,451	2,690
% margin	16.9%	16.5%	15.8%	16.7%	17.2%
<b>EBIT</b>	1,594	1,751	1,548	1,670	1,920
% margin	12.4%	12.1%	10.8%	11.4%	12.3%
<b>EPS</b>	\$4.64	\$5.26	\$4.80	\$4.76	\$5.62
% chg	-4%	13%	-9%	-	-
<b>Baird EPS est:</b>	-	-	-	\$4.95	\$5.96
<b>P/E Multiple:</b>	-	-	-	12.27x	10.20x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 9.0x LTM EPS



# BorgWarner (BWA)

**Price (3/12/20):** \$24.50 (\$26 - \$46)  
**Rating/Suit:** **Outperform/ Average Risk**  
**Target Price:** \$49 6.4x 2022E EBITDA, median valuation of the 3-4 year trading range, discounted by 10%. We believe the median is appropriate given potential for improving end market volumes.

## Size (in millions)

Market Cap \$5,056  
Enterprise Value \$6,881  
Sales \$10,168  
Daily Trading Volume \$62

## Fundamentals

Net Debt/EBITDA (LTM) 0.73x  
FCF Yield (2020 Est.) 9.83%  
Pre-Tax ROA 12.04%  
Dividend Yield: 2.00%

BAIRD

## Competitors:

Garrett Motion, Bosch, Denso, Conti, Magna, Tsubaki Group, Exedy

## Company Description:

Headquartered in Auburn Hills, Michigan, BorgWarner is a leading global supplier of systems and components in powertrain applications (turbochargers, timing chains, cooling systems) and drivetrain applications (four-wheel-drive, all-wheel-drive, dual clutch, and automatic transmissions).

## Business Model Strengths:

**Technology leader** in fuel efficiency/emissions reduction, helping to meet rising global emissions standards: turbos, timing systems, transmissions, diesel technology, thermal products.

**New business pipeline.** The company's product portfolio is expected to generate 5-6% revenue growth above underlying light vehicle production in coming years, with a new business backlog that has higher-ROIC products than pre-recession.

**Electrification.** BorgWarner is a leading player in electrification, with capabilities in electric motors, transmissions, and power electronics. Currently 50% of the company's backlog is related to hybrid/EV propulsion.

**Geographic opportunity.** While China has been a significant growth driver in recent years, the region represents just 16% of revenue. Outsized growth in the market is expected to continue.

**Margins.** EBIT margins are expected to reach the low-13% range by 2023 (mid-teens incrementals), driven by operating leverage and restructuring of non-core businesses.

## Headwinds:

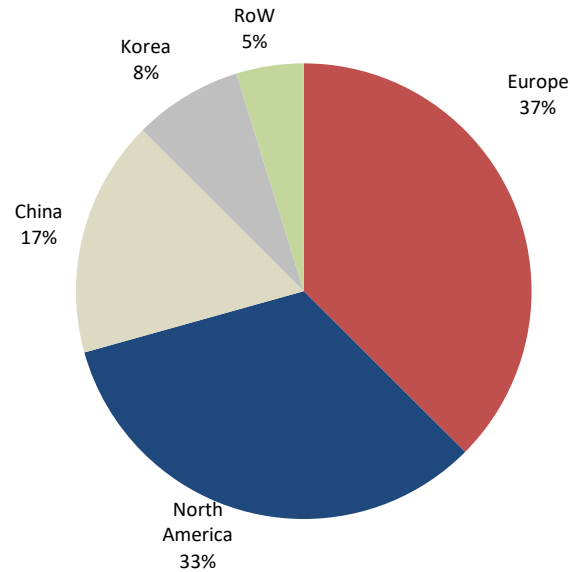
Global vehicle end markets (China), vehicle mix (diesel), and currency (strong dollar, weak euro).

## Investment Risks:

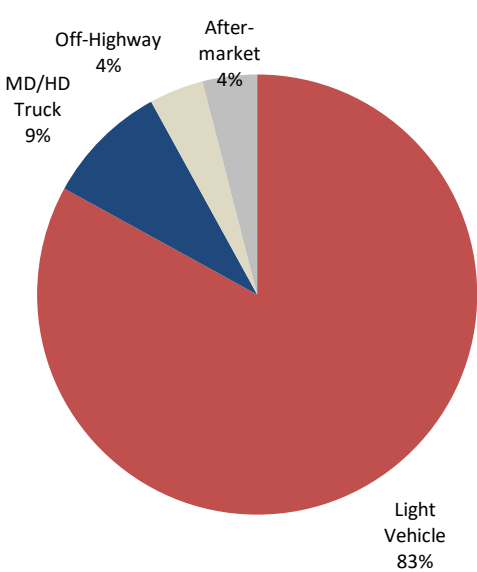
End-market demand, particularly in Europe and global commercial vehicle, the timing/pace of new product launches to drive outperformance, margins in declining volume environment, foreign exchange/commodity prices, new technology advancements.

## Revenue Profile (FY2019):

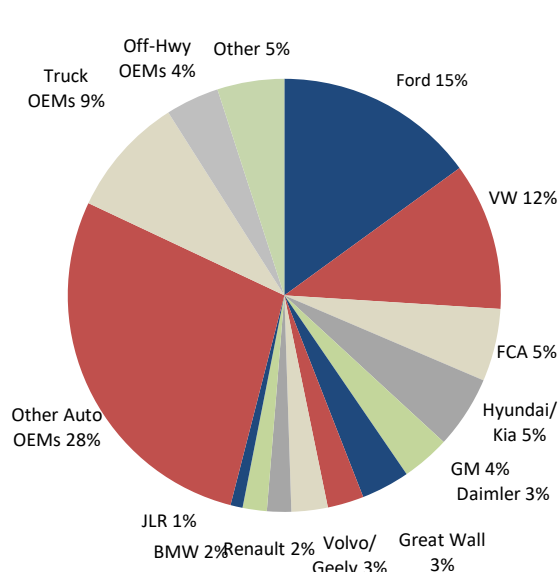
### Geography:



### End Markets:



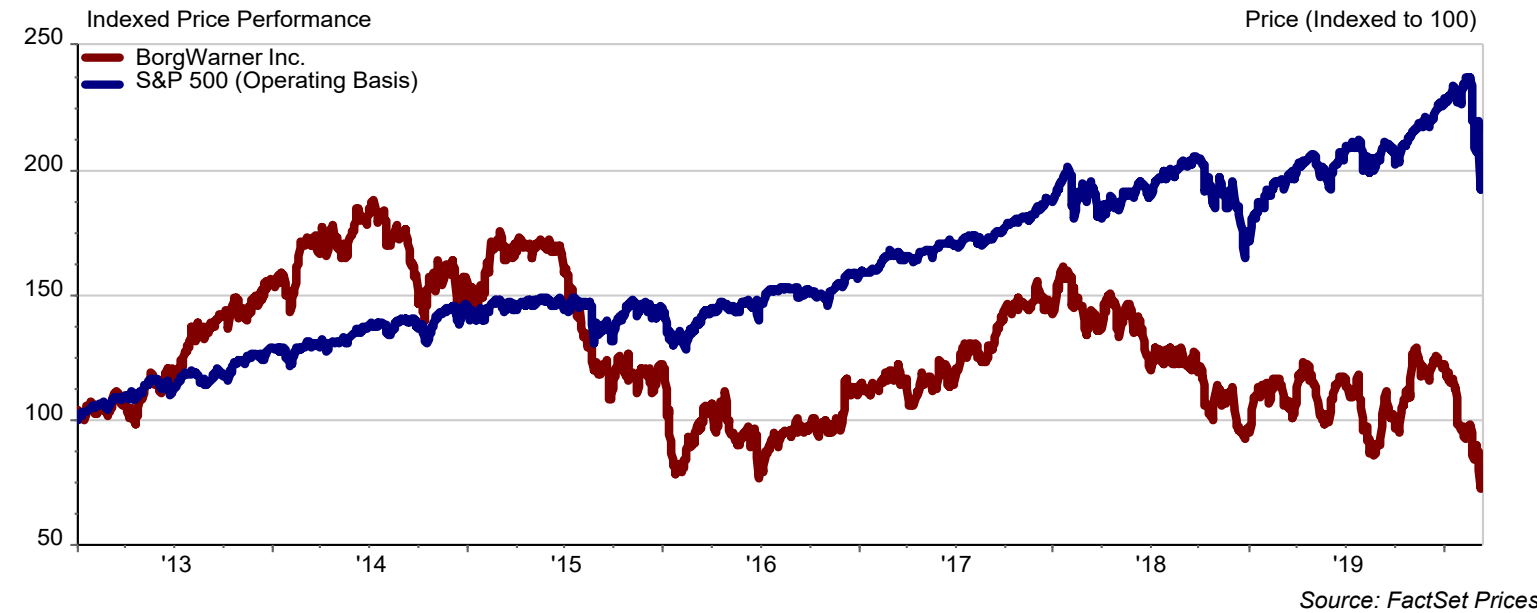
### Customers:



## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
Revenue	9,799	10,530	10,168	9,948	10,485
% chg	8%	7%	-3%	-2%	5%
Baird Revenue Est:				9,944	10,598
EBITDA	1,635	1,744	1,650	1,601	1,753
% margin	16.7%	16.6%	16.2%	16.1%	16.7%
EBIT	1,446	1,515	1,232	1,155	1,303
% margin	14.8%	14.4%	12.1%	11.6%	12.4%
EPS	\$3.89	\$4.48	\$4.13	\$3.89	\$4.32
% chg	19%	15%	-8%	-6%	11%
Baird EPS est:	-	-	-	\$3.98	\$4.37
P/E Multiple:	-	-	-	6.30x	5.66x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 13.1x LTM EPS

# Cummins (CMI)

**Price (3/12/20):** \$127.55 (\$139 - \$186)  
**Rating/Suit:** **Outperform / Average Risk**  
**Target Price:** \$188 9.3x Cal-2022E EBITDA, equal to median multiple observed at mid-cycle EBITDA, plus equity income net of minority interest at 14.0x earnings, discounted by 10%.

## Size (in millions)

Market Cap \$19,167  
Enterprise Value \$23,555  
Sales \$23,771  
Daily Trading Volume \$160

## Fundamentals

Net Debt/EBITDA (LTM) 0.43x  
FCF Yield (2020 Est.) 7.10%  
Pre-Tax ROA 12.32%  
Dividend Yield: 3.13%

BAIRD

## Competitors:

Daimler, Navistar, PACCAR, Volvo, Weichai, Caterpillar, MAN, Yanmar, Tenneco, BorgWarner, Garrett

## Company Description:

Headquartered in Columbus, Indiana, Cummins is a leading manufacturer of diesel and natural gas engines, engine-related components, and electric power generation systems for vehicle manufacturers, distributors, and other customers worldwide. Founded in 1919, Cummins is the largest independent engine maker in the world, with a presence in over 190 countries.

## Business Model Strengths:

**Secular demand for clean, efficient power.** Cummins delivers engines that are clean and fuel-efficient, with high performance. These engines are able to lower operating costs for end users, while satisfying the stringent regulatory standards.

**High market share.** Cummins engines represent ~35% of the overall Class 8 engine market.

**Complementary businesses.** The complementary nature of the four businesses – Engine, Power Generation, Components, Distribution – opens the ability to leverage operating expenses, optimize product design, and maximize incremental manufacturing profits.

**Cash generation.** Cash likely to be used for share repurchases, dividends and acquisitions.

**Market share expansion in certain areas.** Although we expect pressure in NA heavy-duty segment, Cummins has the opportunity to expand market share through new markets (ex: high-horsepower Industrial applications) and emerging markets, while capturing greater share of components.

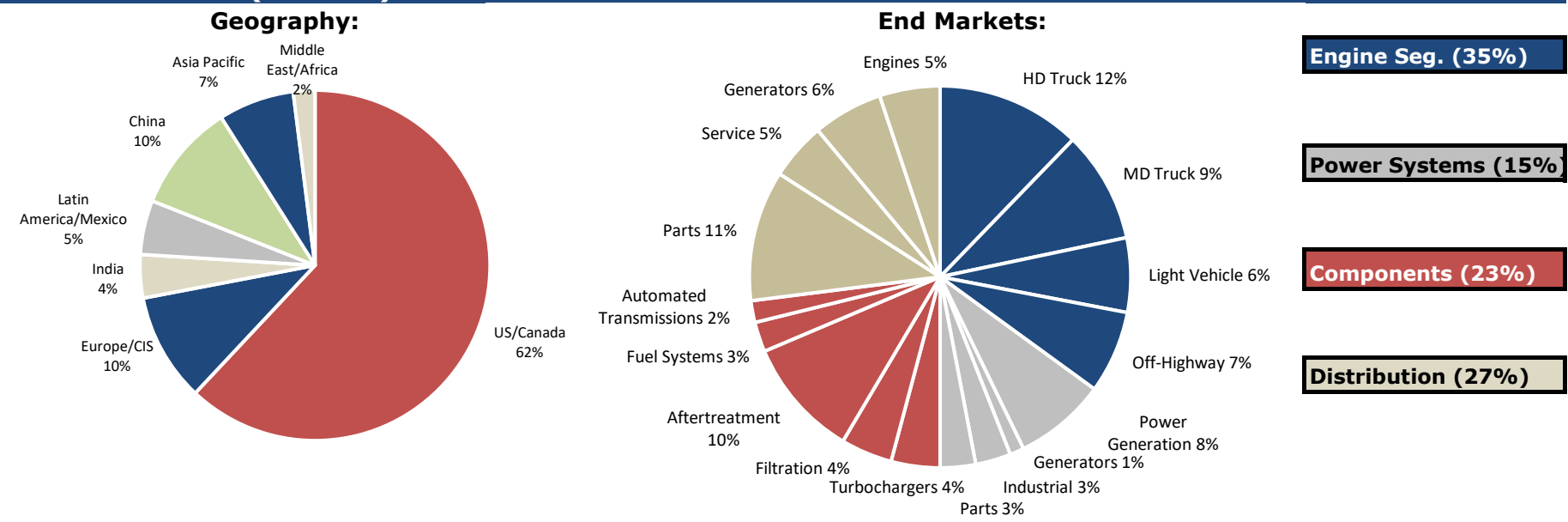
## Headwinds:

NA truck cycle, lower demand in China, incremental investments in electrification.

## Investment Risks:

End market volatility, share shifts between major customers and engine sizes, costs to develop new technologies and successful market adoption, strength of JV partners, supply base concentration, raw material costs, foreign currency, labor costs and union exposure, and pension/OPEB liabilities.

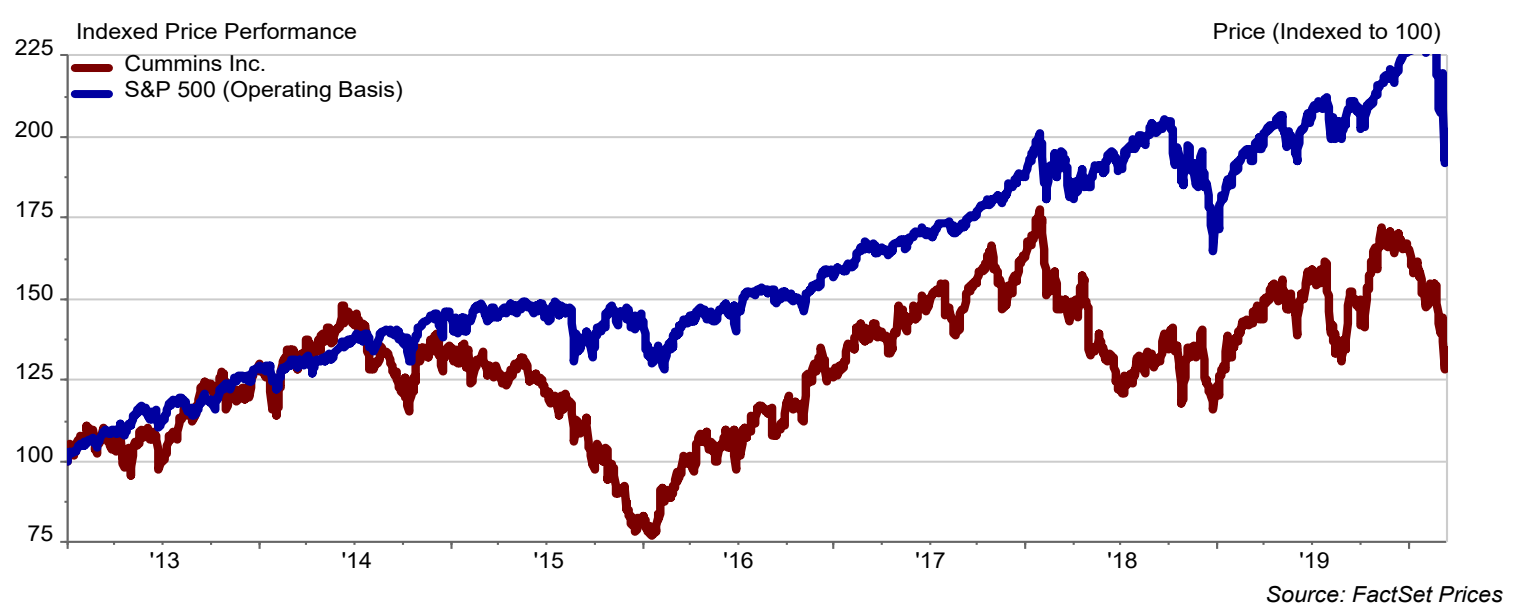
## Revenue Profile (FY2019):



## Financial Summary (December):

\$ millions	2016	2017	2018	consensus estimates	
				2019E	2020E
Revenue	17,509	20,428	23,771	23,571	21,208
% chg	-8%	17%	16%	-1%	-10%
Baird Revenue Est:				23,570	21,079
EBITDA	2,527	3,065	3,847	3,731	3,060
% margin	14.4%	15.0%	16.2%	15.8%	14.4%
EBIT	1,999	2,446	3,037	2,836	2,283
% margin	11.4%	12.0%	12.8%	12.0%	10.8%
EPS	\$8.23	\$10.62	\$13.23	\$15.05	\$11.96
% chg	-10%	29%	25%	14%	-21%
Baird EPS est:	-	-	-	\$14.91	\$11.56
P/E Multiple:	-	-	-	8.48x	10.66x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 12.8x LTM EPS

# Delphi Technologies (DLPH)

**Price (3/12/20):** \$10.40 (\$10 - \$26)

**Rating/Suit:** **Outperform/ Higher Risk**

**Target Price:** \$15  
Our \$15 target price is based on 5.1x 2022E EBITDA, median valuation of the current-cycle range, discounted by 20%. We believe the median is appropriate given potential for improving end market volumes.

## Size (in millions)

Market Cap	\$895
Enterprise Value	\$2,571
Sales	\$4,332
Daily Trading Volume	\$23

## Fundamentals

Net Debt/EBITDA (LTM)	2.87x
FCF Yield (2020 Est.)	10.42%
Pre-Tax ROA	5.95%
Dividend Yield:	0.00%

**BAIRD**

## Competitors:

Bosch, Continental, Denso, Hitachi

## Company Description:

Incorporated in Jersey (UK), Delphi Technologies is a leading global supplier of powertrain technologies for the global automotive and commercial vehicle end markets.

## Business Model Strengths:

**Regulations driving higher content.** Countries around the world representing over 80% of annual new car sales have enacted or proposed regulations that would reduce carbon emissions from vehicles by approximately 4% per year during the next decade.

**Electrification.** Delphi's on-battery content and the other sources of electric vehicle content results in \$1,500 of total addressable content, approximately 5x the average internal combustion engine content.

**Potential for profitability improvement once products scale.** Delphi previously had achieved levels of profitability (2017 adjusted EBIT margin near 12%) that were near best-in-class. However, as subscale products (either generating losses or with dilutive margins) grow faster than existing product lines, the company is experiencing margin dilution near-term. Longer-term, we expect additional margin improvement from 2019 levels (guidance of ~8%) as new product lines reach scale and Delphi drives operating leverage.

## Headwinds:

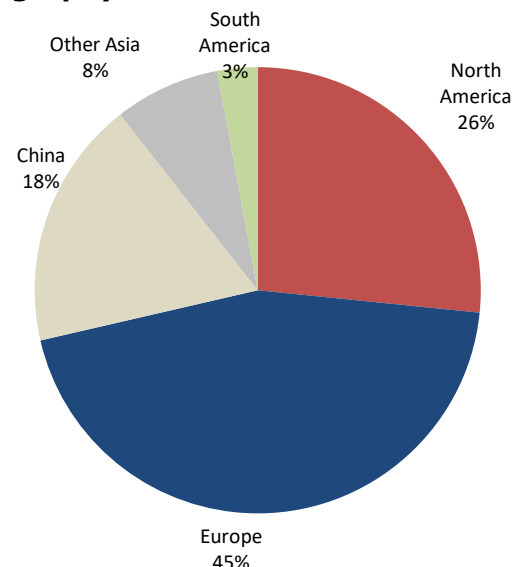
Global auto production, product mix, diesel share, separation-related costs, elevated capex spending.

## Investment Risks:

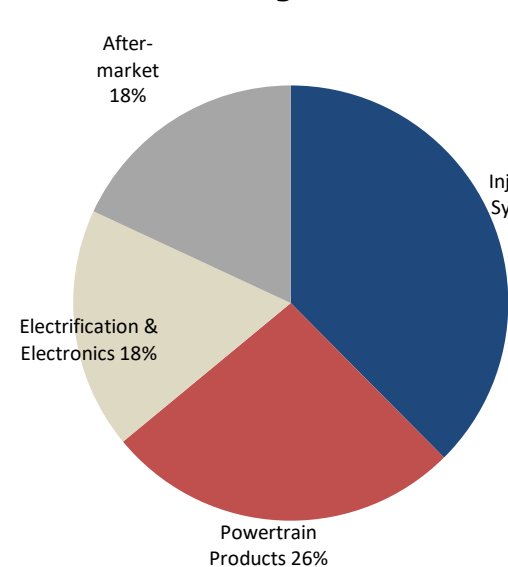
End-market demand, particularly in European light and commercial vehicle markets, the ability to meet margin expectations in choppy end-market environment, exposure to key customers and take rates of Delphi content, commodity prices (notably copper, which is a pass through but can distort margins), new technology advancements.

## Revenue Profile (FY2019):

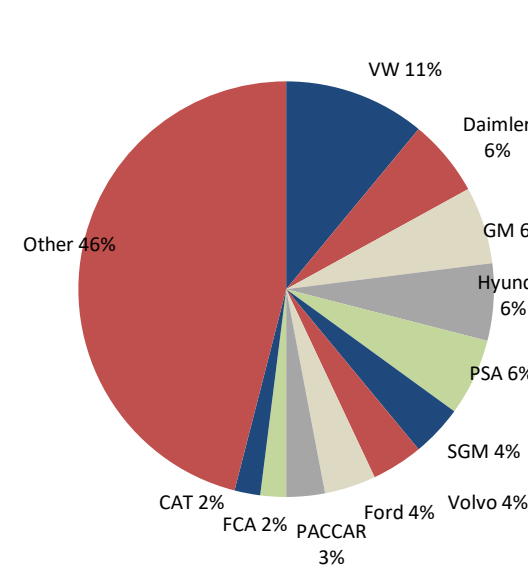
### Geography:



### Product Categories:



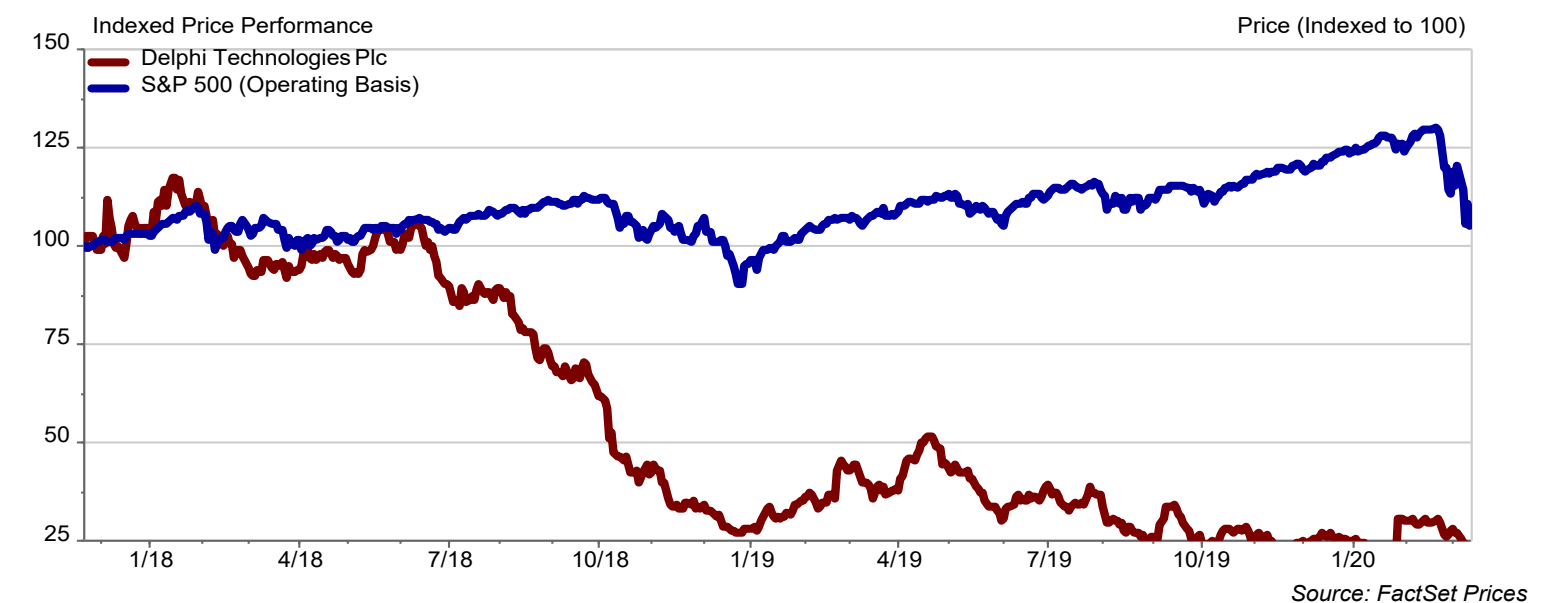
### Customers:



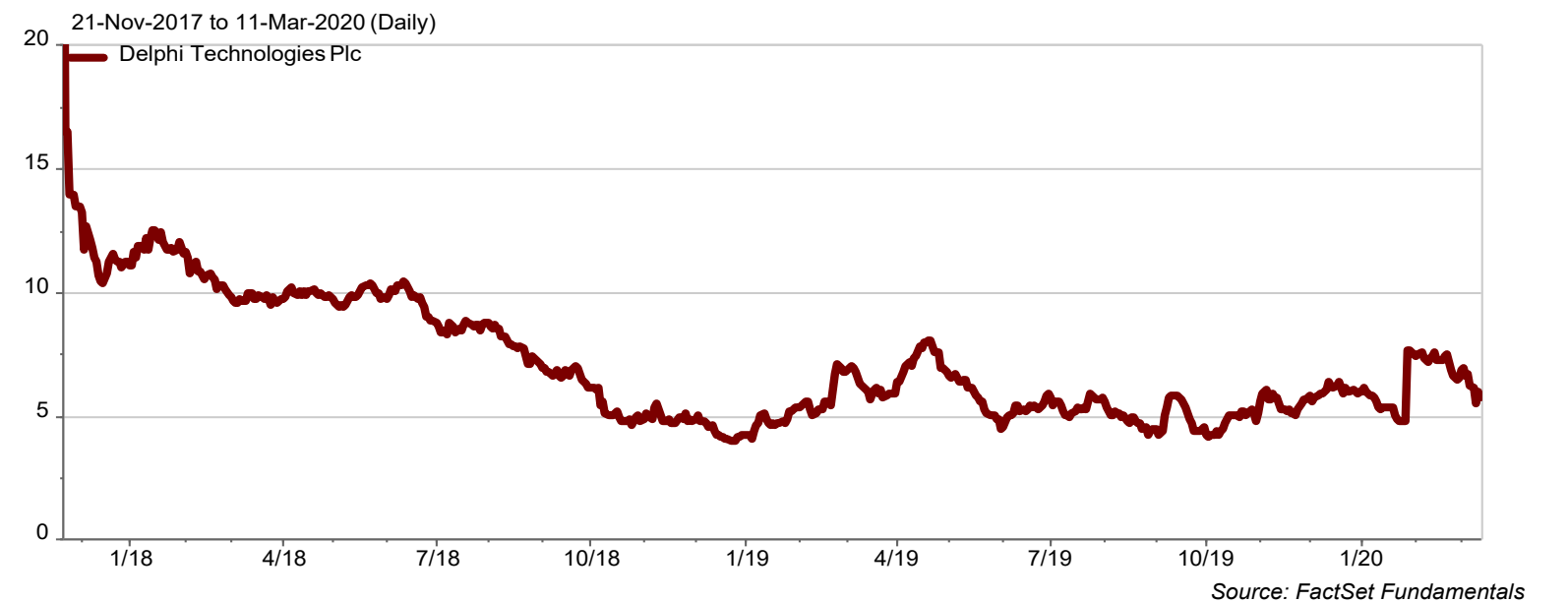
## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates 2020E	2021E
<b>Revenue</b>	4,849	4,858	4,332	4,138	4,239
% chg	10%	0%	-11%	-4%	2%
<b>Baird Revenue Est:</b>				4,296	4,100
<b>EBITDA</b>	773	743	529	510	556
% margin	15.9%	15.3%	12.2%	12.3%	13.1%
<b>EBIT</b>	446	548	310	286	327
% margin	9.2%	11.3%	7.1%	6.9%	7.7%
<b>EPS</b>	\$5.15	\$4.38	\$2.33	\$1.96	\$2.35
% chg	20%	-15%	-47%	-16%	20%
<b>Baird EPS est:</b>	-	-	-	\$2.20	\$2.08
<b>P/E Multiple:</b>	-	-	-	4.74x	4.99x

## Stock Chart - from Nov 21, 2017



## Historical P/E - NTM





# Gentex (GNTX)

BAIRD

**Price (3/12/20):** \$22.57 (\$20 - \$31)

**Rating/Suit:** **Neutral/ Average Risk**

**Target Price:** \$29 10.0x 2022E EBITDA, median valuation during prior periods of high-single-digit growth-above-market, discounted by 10%. We believe this approach is justified given organic growth outlook.

## Size (in millions)

Market Cap \$5,671  
Enterprise Value \$5,885  
Sales \$1,859  
Daily Trading Volume \$35

## Fundamentals

Net Debt/EBITDA (LTM) -0.74x  
FCF Yield (2020 Est.) 5.83%  
Pre-Tax ROA 27.86%  
Dividend Yield: 1.50%

## Competitors:

Magna Mirrors (Donnelly)

## Company Description:

Headquartered in Zeeland, Michigan, Gentex is the world's leading manufacturer of auto-dimming rear view mirrors. New Product introductions - Rear Camera Display (2006), Driver Assist (2012), Full Display Mirror (2015) - have helped the company accelerate the addition of content to the mirror.

## Business Model Strengths:

**Technology advantage.** Gentex is the innovator of the electrochromic auto-dimming mirror and controls a dominant share position (93% in 2017 vs. 85% in 2010).

**Manufacturing advantage.** A large part of Gentex's advantage versus competitors (Magna Mirrors) comes through its low-cost, highly automated manufacturing process.

**Secular growth.** Gentex is expected to grow revenue 5-10% due to increasing penetration and higher content.

**Opportunities for further auto-dimming mirror penetration.** Currently, interior auto-dimming mirrors are in just 25-30% of vehicles, with exterior mirrors in <10% of global vehicles.

**Above-average gross margins.** Gentex is expected to maintain gross margins of 37-38%, above the normal industry levels. Gentex is able to maintain these margins through its dominant market share and manufacturing capabilities.

## Headwinds:

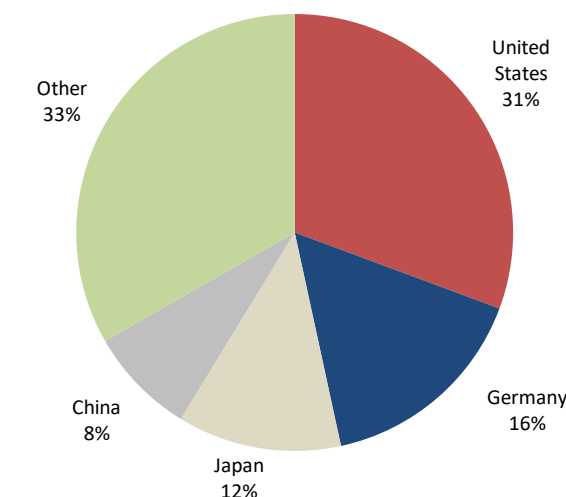
China tariffs, electronic component shortages, investor sentiment (e.g., displays replacing mirrors).

## Investment Risks:

End-market demand, adoption rates for mirrors and mirror-related content among automotive buyers, ability for margins to stabilize/improve with capacity addition plans largely complete, investments in R&D to introduce new products, ability to win new mirror program awards, successful integration of HomeLink, new technology advancements (cameras replacing mirrors).

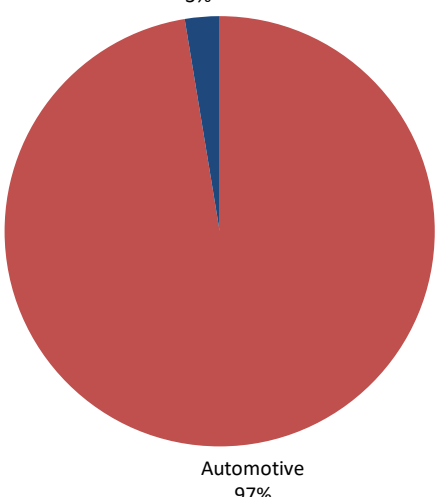
## Revenue Profile (FY2019):

### Geography:

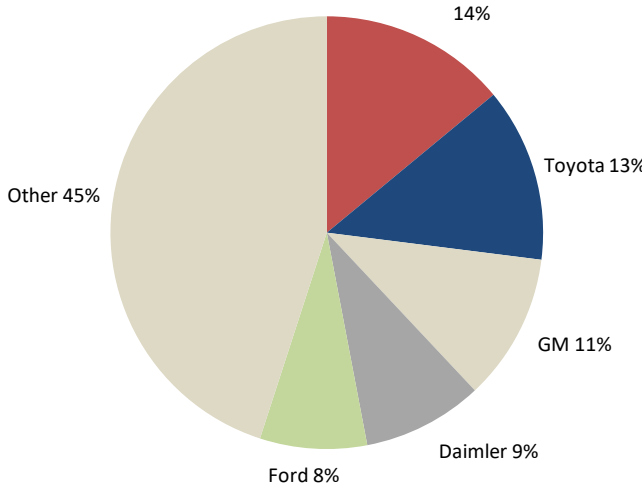


\*Source: Company reports

### End Markets:



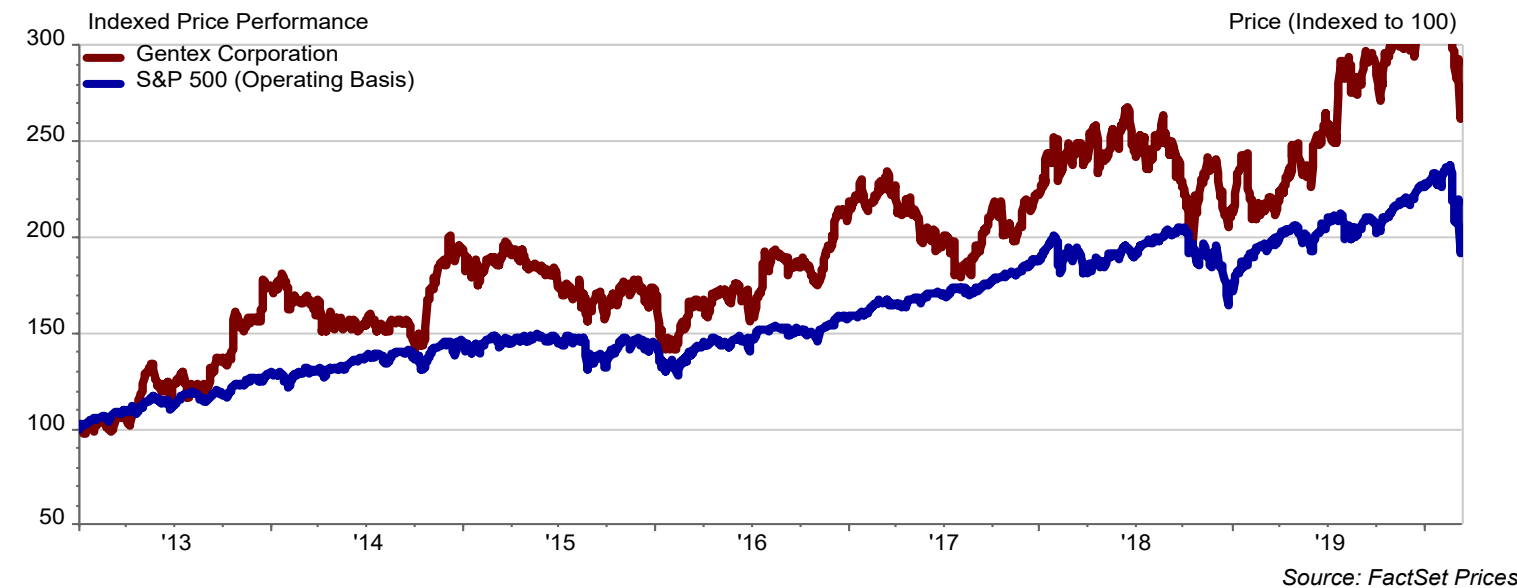
### Customers:



## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
<b>Revenue</b>	1,795	1,834	1,859	1,950	2,056
% chg	7%	2%	1%	5%	5%
<b>Baird Revenue Est:</b>				1,943	2,083
<b>EBITDA</b>	623	610	593	614	633
% margin	34.7%	33.3%	31.9%	31.5%	30.8%
<b>EBIT</b>	523	508	489	506	528
% margin	29.2%	27.7%	26.3%	26.0%	25.7%
<b>EPS</b>	\$1.28	\$1.63	\$1.67	\$1.76	\$1.90
% chg	8%	27%	3%	6%	8%
<b>Baird EPS est:</b>	-	-	-	\$1.76	\$1.94
<b>P/E Multiple:</b>	-	-	-	12.81x	11.88x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 24.9x LTM EPS



# Lear Corporation (LEA)

**Price (3/12/20):** \$87.46 (\$92 - \$158)

**Rating/Suit:** **Neutral / Average Risk**

**Target Price:** \$135 5.0x estimated 2022E EBITDA, median valuation of the 3-4 yr trading range, discounted by 10%. We believe the median is appropriate given potential for improving end market volumes.

## Size (in millions)

Market Cap \$5,289  
Enterprise Value \$7,410  
Sales \$19,810  
Daily Trading Volume \$65

## Fundamentals

Net Debt/EBITDA (LTM) 0.78x  
FCF Yield (2020 Est.) 10.49%  
Pre-Tax ROA 10.76%  
Dividend Yield: 2.51%

**BAIRD**

## Competitors:

Adient, Faurecia, Magna, Toyota Boshoku, TS Tech; Aptiv, Leoni, Sumitomo, TE Connectivity, Yazaki

## Company Description:

Headquartered in Southfield, Michigan, Lear Corporation is a leading global supplier and manufacturer of automotive seating and electrical equipment. The company currently maintains 240 locations in 36 countries and has 136,000 employees.

## Business Model Strengths:

**A global leader in seating systems (No. 2 position).** The company has global scale and benefits from strong manufacturing performance with opportunities for further vertical integration.

**Exposure to secular themes of connectivity and fuel efficiency.** Lear has cabling capabilities across low (12V) and high (300V) voltage systems. Electrical Distribution average CPV is \$700. On a fully electrified vehicle, content could be several times this figure.

**China revenue exposure of ~\$4 billion.** Of this total, \$2.5 billion is consolidated (~10% of total sales), \$1.5 billion unconsolidated JVs. China revenues have grown double-digits over past 4-5 years.

**Acquisition strategy supports technology capability and increased vertical integration.** Recent acquisitions include: Arada (V2V) and EXO Technologies (GPS) in Electrical and Eagle Ottawa (leather) and Grupo Antolin in Seating.

**Strong free cash flow generation and high capital return to shareholders (buybacks, dividends).** Free cash flow estimated at \$870 million in 2019 (9% FCF yield).

## Headwinds:

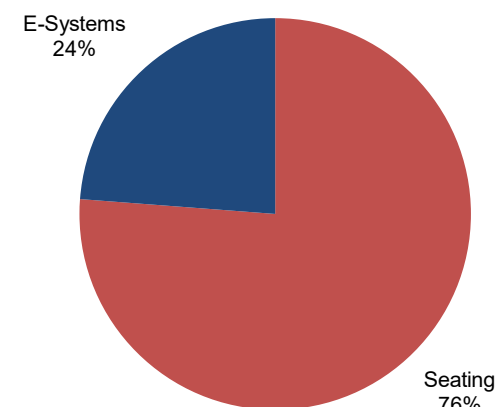
Auto production, competitive announcements, lack of margin expansion, slowing estimate revisions.

## Investment Risks:

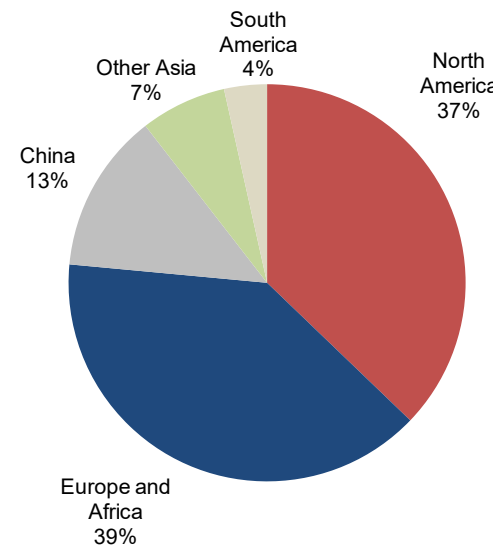
Competitive pressures, exposure to major OEMs (Ford and GM represent 35-40% of revenues), cyclicality of the automotive industry, new program launches, integration of acquisitions, raw material prices, supplier disruption, foreign currency fluctuations, and post retirement liabilities.

## Revenue Profile (FY2019):

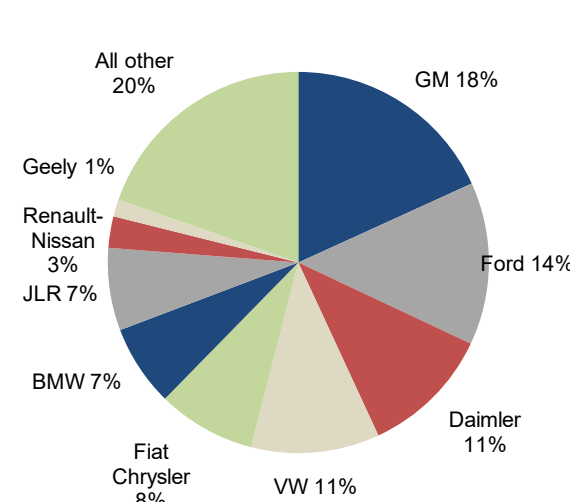
### Product Category:



### Geography:



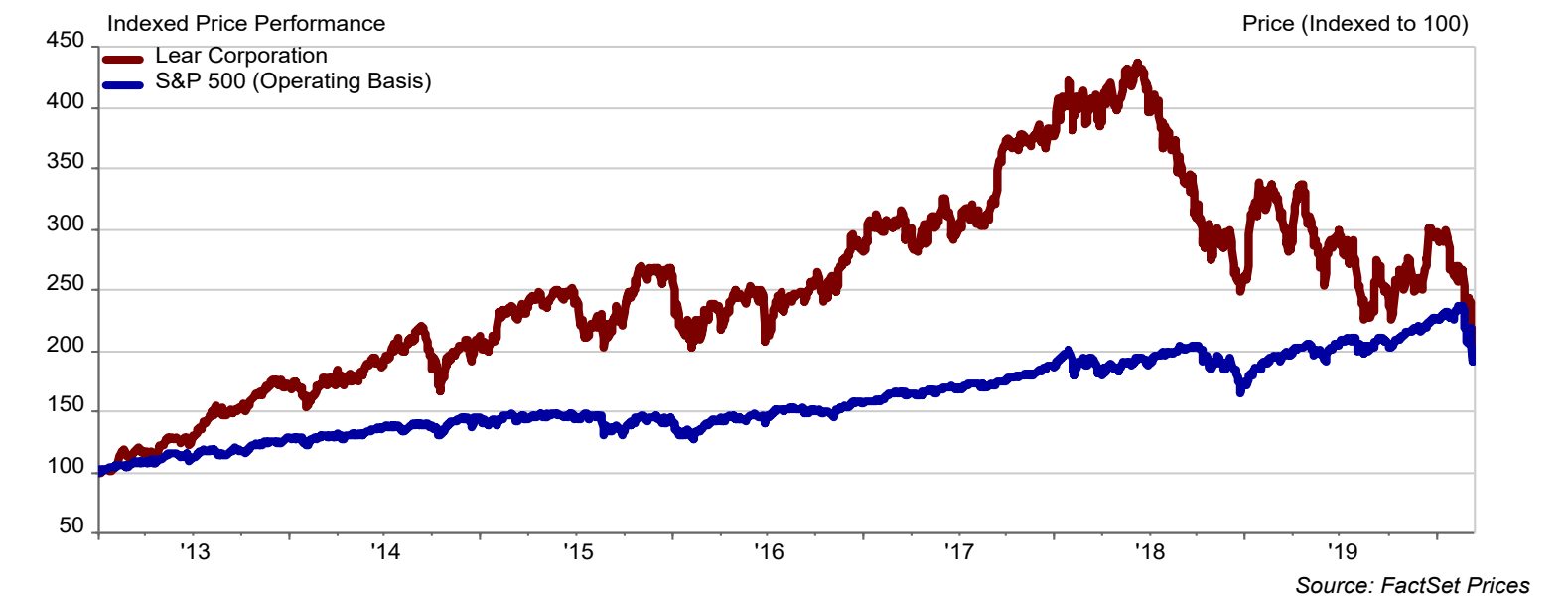
### Customers:



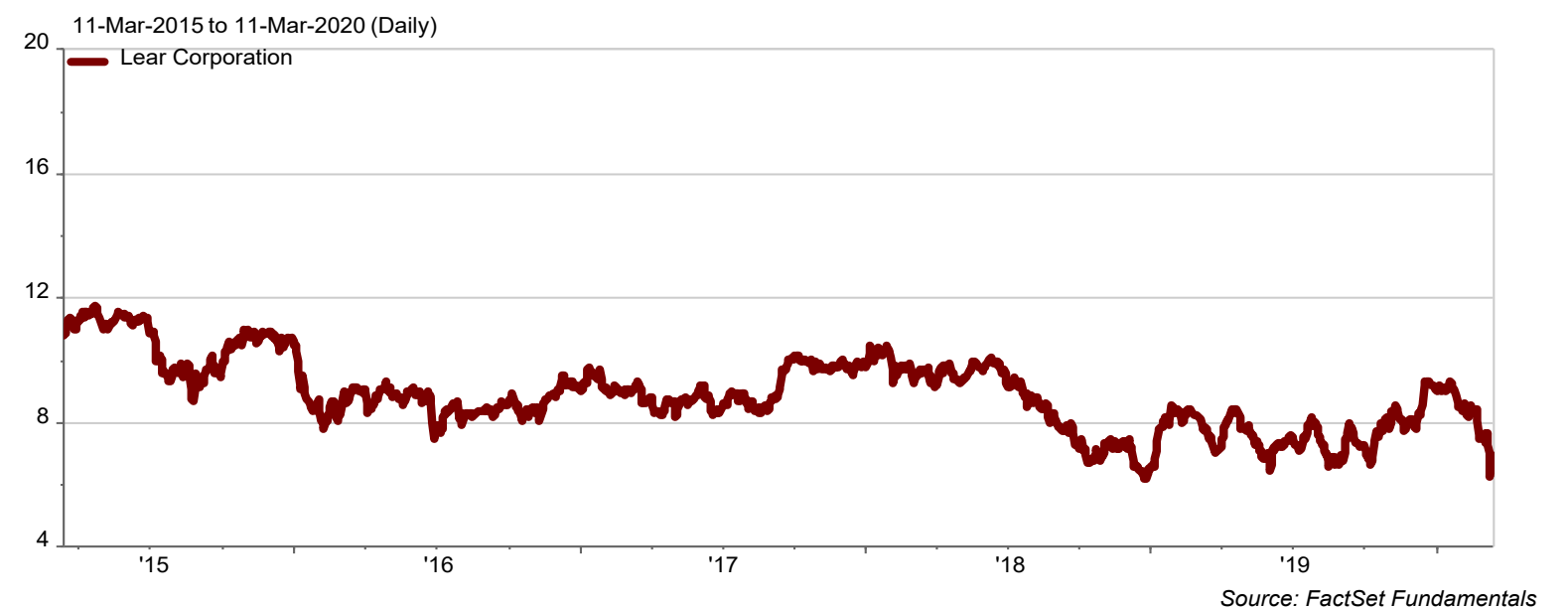
## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
<b>Revenue</b>	20,467	21,149	19,810	19,922	20,566
% chg	10%	3%	-6%	1%	3%
<b>Baird Revenue Est:</b>				19,945	20,988
<b>EBITDA</b>	2,184	2,235	1,814	1,821	1,927
% margin	10.7%	10.6%	9.2%	9.1%	9.4%
<b>EBIT</b>	1,719	1,749	1,309	1,297	1,377
% margin	8.4%	8.3%	6.6%	6.5%	6.7%
<b>EPS</b>	\$17.00	\$18.22	\$13.99	\$14.27	\$16.23
% chg	21%	7%	-23%	2%	14%
<b>Baird EPS est:</b>	-	-	-	\$14.47	\$17.10
<b>P/E Multiple:</b>	-	-	-	6.13x	5.39x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



# Littelfuse (LFUS)

**Price (3/12/20):** \$129.11 (\$139 - \$204)

**Rating/Suit:** **Outperform / Average Risk**

**Target Price:** \$202 14.1x calendar-2022E EBITDA, the median valuation of the 3-4 year trading range, discounted by 10%. We believe median valuation is appropriate given the potential for improving end market volumes.

## Size (in millions)

Market Cap	\$3,154
Enterprise Value	\$3,567
Sales	\$1,504
Daily Trading Volume	\$16

## Fundamentals

Net Debt/EBITDA (LTM)	0.56x
FCF Yield (2020 Est.)	3.76%
Pre-Tax ROA	9.58%
Dividend Yield:	1.05%

**BAIRD**

## Competitors:

**Electronics:** Cooper (Eaton), Bel Fuse, Bourns, On Semiconductor, STMicro, Vishay, Infineon; **Auto:** Cooper, Pacific Engineering, Sensata, TE Connectivity, CTS; **Industrial:** Cooper, GE Multilin, Mersen

## Company Description:

Headquartered in Chicago, Illinois, Littelfuse is a leading supplier of circuit protection products for the electronics, automotive and industrial markets. In systems that use electrical energy, Littelfuse components and modules are a critical safeguard against overcurrent and overvoltage events. Littelfuse also supplies a fast-growing portfolio of sensors and power control products.

## Business Model Strengths:

**Leading supplier of fuses to automotive industry.** Circuit protection devices are a crucial safeguard to ensure failsafe performance from increasingly complex vehicle electrical architectures.

**Increasing electronic content in vehicles.** Over the last decade, average fuse content per vehicle has increased over 60%, supporting a mid-single-digit organic CAGR for the Automotive business.

**Strong margin profile.** The company has maintained mid/high teens margins over the past five years, 200-300bp higher than competitors. Currently, the company is in the process of winding down lower-margin legacy sensor contracts and replacing them with contracts that support higher margins.

**Electronics offers profitable "core" business.** All varieties of electronics applications require circuit protection, and Littelfuse is the only company in the industry capable of supplying the entire lineup of ceramic, polymer, and semiconductor overvoltage protection in addition to its well-established portfolio of fuses.

## Headwinds:

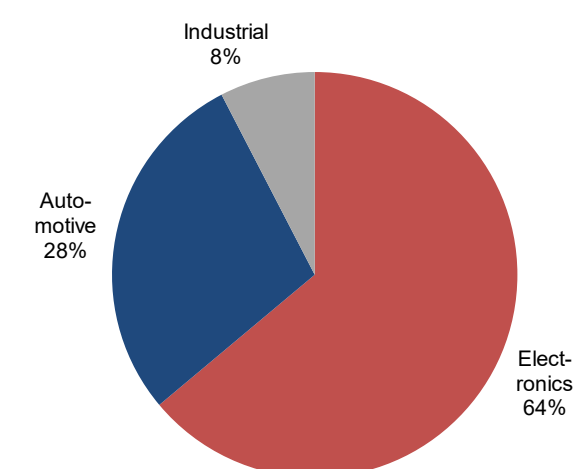
Valuation, global auto production, electronics cycle.

## Investment Risks:

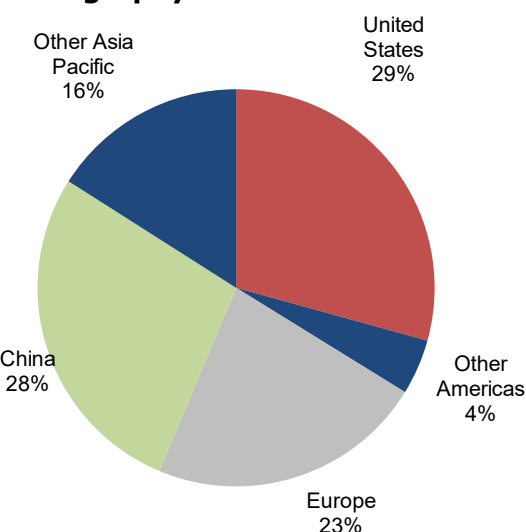
Competitive pressures, cyclical end markets (automotive, consumer electronics, telecom), acquisition integration risks/ability to deliver targeted synergies, commodity/currency price changes, disruptions at suppliers and/or customers, and modeling risk (limited visibility in certain channels/end markets).

## Revenue Profile (FY2019):

### End Markets:



### Geography:



**Customers:** Sales to Arrow Electronics were 11% of net sales in 2019

### Examples of Customers:

**Auto:** Autoliv, BMW, Delphi, Ford, GM, Hyundai, Lear, VW

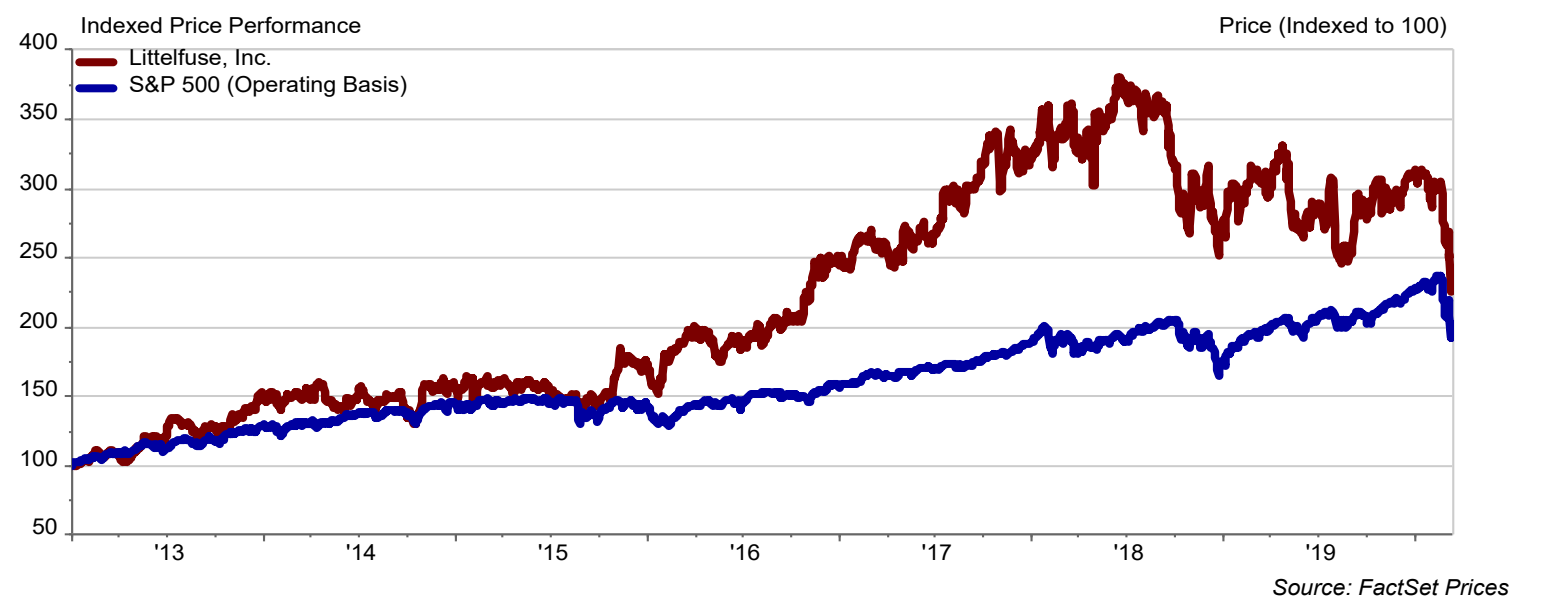
**Electronics:** Cisco, Delta, Foxconn, H-P, IBM, Intel, LG, Samsung, Sony

**Industrial:** CAT, Cummins, Daimler Trucks, GE, Generac, Deere, Rockwell, UTX

## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
<b>Revenue</b>	1,222	1,718	1,504	1,523	1,629
% chg	16%	41%	-12%	1%	7%
<b>Baird Revenue Est:</b>				1,522	1,619
<b>EBITDA</b>	299	408	308	315	356
% margin	24.5%	23.7%	20.5%	20.7%	21.9%
<b>EBIT</b>	227	314	209	222	265
% margin	18.6%	18.3%	13.9%	14.6%	16.3%
<b>EPS</b>	\$7.74	\$9.44	\$6.82	\$6.76	\$8.19
% chg	24%	22%	-28%	-1%	21%
<b>Baird EPS est:</b>	-	-	-	\$6.99	\$8.38
<b>P/E Multiple:</b>	-	-	-	19.10x	15.77x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



# Methode Electronics (MEI)

**Price (3/12/20):** \$25.58 (\$25 - \$41)

**Rating/Suit:**

**Target Price:**

**Outperform / Average Risk**

\$43

7.0x Cal-2020E EBITDA, the median valuation of the 3-4 year range, discounted by 15%. We believe the median valuation is appropriate given the potential for improving end market volumes.

## Size (in millions)

Market Cap

\$949

Enterprise Value

\$1,234

Sales

\$1,000

Daily Trading Volume

\$5

## Fundamentals

Net Debt/EBITDA (LTM)

1.13x

FCF Yield (2020 Est.)

10.95%

Pre-Tax ROA

13.20%

Dividend Yield:

1.29%

**BAIRD**

## Competitors:

Tokai Rika, Kostal, Aptiv, Valeo, Alps Electronics, Cherry Corporation, Stoneridge, ZF TRW

## Company Description:

Headquartered in Chicago, Illinois, Methode Electronics manufactures electronic component devices for OEMs in several industries. Methode's automotive segment includes full-engineered center stacks, sensors, switches (ergonomic, hidden) on steering columns, steering wheels, lead frame assemblies, and instrument panels. Non-automotive products (~20% of sales) include copper interconnect devices, bus bars, power cable assemblies, field-effect switches, and remote control HMIs.

## Business Model Strengths:

**Business transformation complete.** Recently, Methode has emphasized innovative, patented, and highly engineered products and systems while exiting low-margin, commoditized products.

**Leveraging technology.** Methode has leveraged technology and manufacturing processes between business segments, so Power and Interconnect benefit from the company's auto expertise.

**New business launches.** In addition to key contracts such as the Ford and GM center console awards (\$40 million and over \$150 million annually, respectively), Methode is booking new business in all three of its segments, with notable new business wins coming from lighting (recent acquisitions), overhead consoles, and hidden switches.

**Strong financial position.** Management has a conservative financial strategy, funding growth and acquisitions with internally generated funds.

## Headwinds:

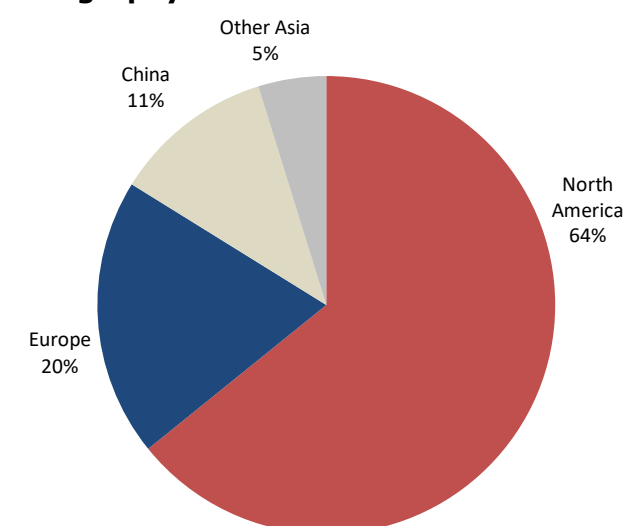
Timing of new contract awards, launch costs, higher spend for cost reduction, and large competitors.

## Investment Risks:

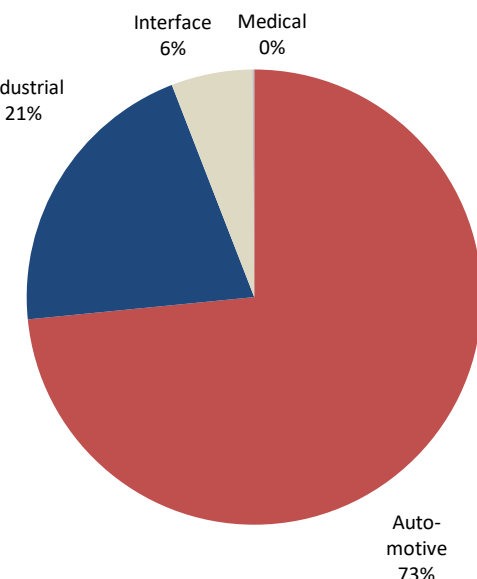
The ability to win incremental awards to drive sustained new business growth, end-market performance in automotive, industrial, and appliance markets, margin performance as meaningful new revenues come online, maintaining key customers with Ford and GM ~55% of revenue, currency/commodity prices.

## Revenue Profile (FY2019):

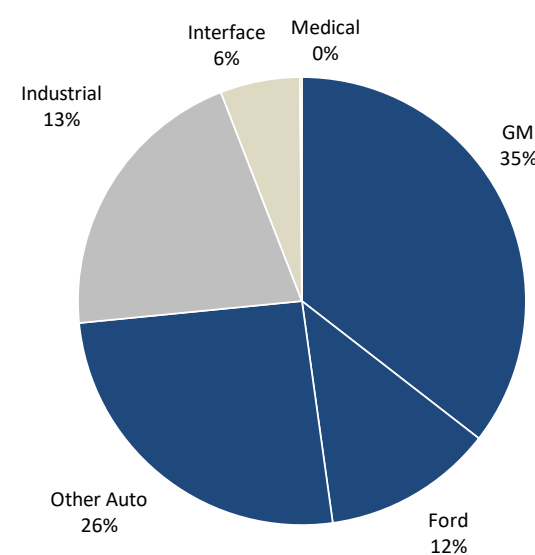
### Geography:



### End Markets:



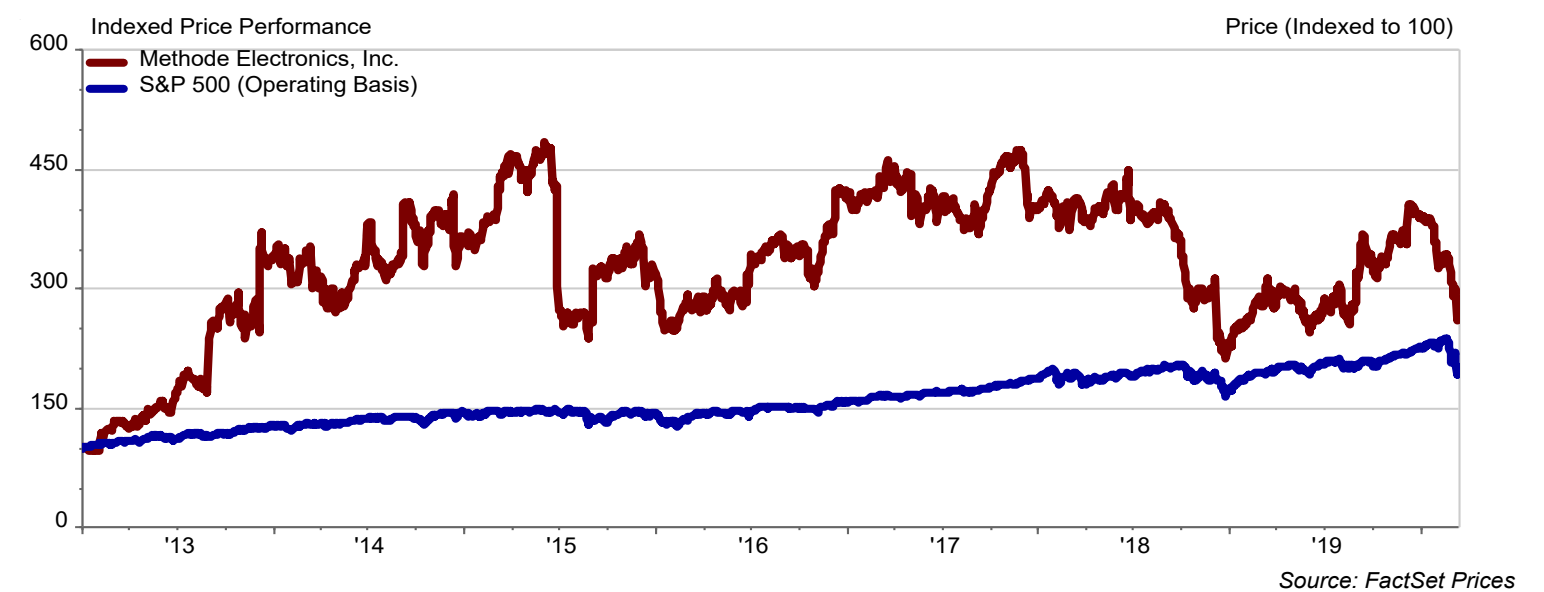
### Customers:



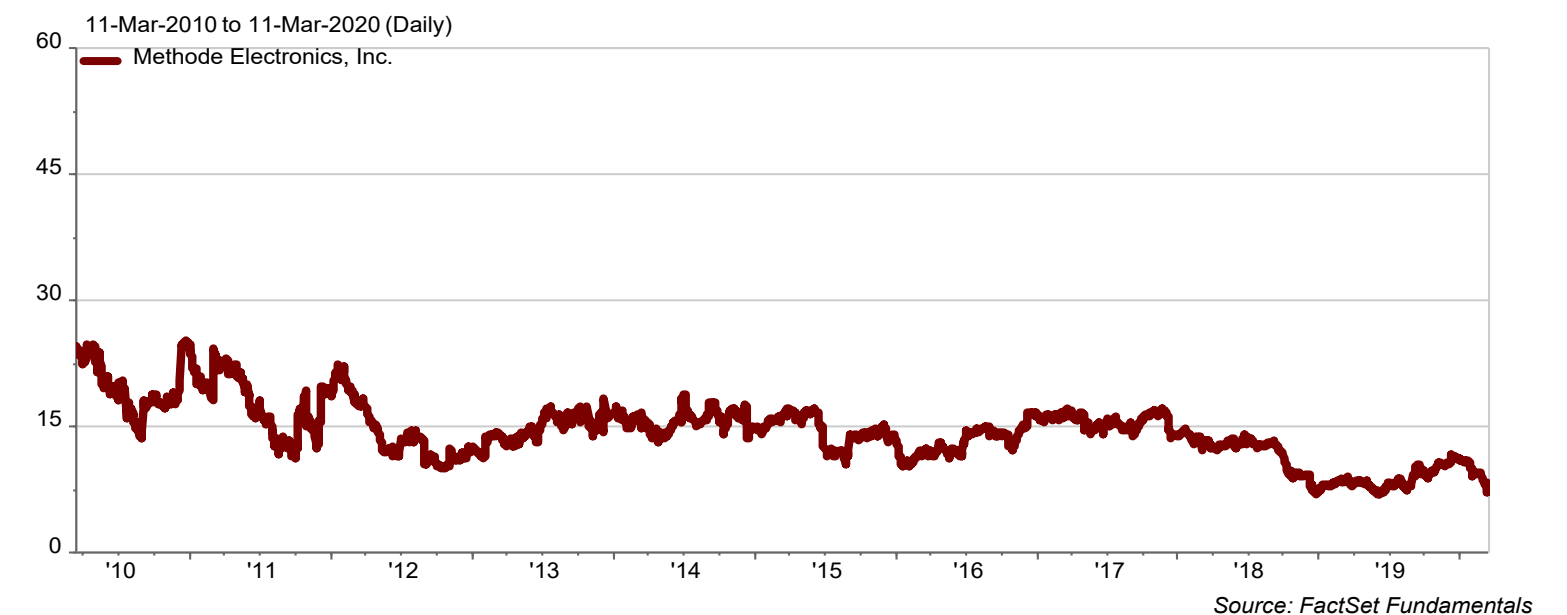
## Financial Summary (April):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
<b>Revenue</b>	816	908	1,000	1,108	1,172
% chg	1%	11%	10%	11%	6%
<b>Baird Revenue Est:</b>				1,107	1,184
<b>EBITDA</b>	152	153	185	216	230
% margin	18.6%	16.8%	18.5%	19.5%	19.6%
<b>EBIT</b>	128	118	107	163	181
% margin	15.6%	13.0%	10.7%	14.7%	15.4%
<b>EPS</b>	\$2.48	\$2.95	\$2.43	\$3.41	\$3.59
% chg	13%	19%	-18%	40%	5%
<b>Baird EPS est:</b>	-	-	-	\$3.44	\$3.79
<b>P/E Multiple:</b>	-	-	-	7.51x	7.13x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 18.9x LTM EPS



# Modine Manufacturing (MOD)

**Price (3/12/20):** \$4.44 (\$5 - \$17)  
**Rating/Suit:** **Neutral / Speculative Risk**  
**Target Price:** \$11 4.5x calendar 2022E EBITDA, a 10% discount to median of 4-year trading range, discounted by 20%. We use a 10% discount to reflect uncertainty surrounding the Auto sale.

**Competitors:**  
BorgWarner, Dana, Denso, Mahle, Valeo, Lennox, Mestek, Ingersoll-Rand, Johnson Controls

**Company Description:**  
Headquartered in Racine, Wisconsin, Modine Manufacturing is a global supplier of thermal management systems and components for automotive, commercial truck, industrial, and building markets. Modine's product portfolio is built on heat exchange products, including radiators, oil coolers, fuel coolers, EGR coolers, charge air coolers, and complete engine cooling modules.

**Business Model Strengths:**  
**Secular tailwind.** Thermal management focus allows the company to benefit from increasing heat loads being placed on commercial truck and industrial engines worldwide.

**Diversified end markets.** Modine generates revenue from four major end markets (auto, commercial truck, off-hwy, coils/HVAC). Recent acquisitions in "Industrial" businesses (e.g., Luvata) provide less cyclical revenue streams and command a premium valuation to the vehicular business.

**Growing presence in emerging markets.** China and Brazil represent ~10% of revenues, but both regions are poised to expand long term as the company leverages its strong local presence.

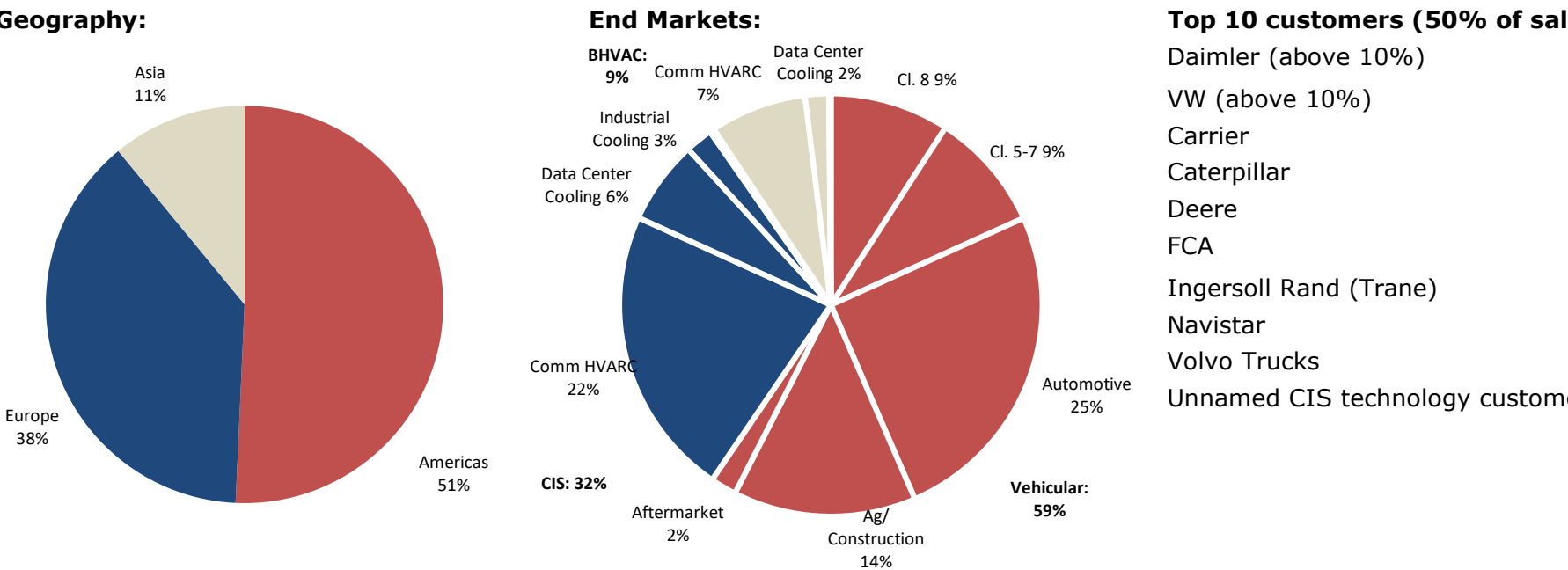
**Margin opportunity.** Modine has executed a significant restructuring plan to optimize the manufacturing footprint, with only a few facilities left to consolidate. As end markets recover, we expect Modine to deliver significant operating leverage on incremental volume.

**Cash flow generation.** The company is expected to utilize cash flow to generate organic growth, along with expand the business through acquisitions.

**Headwinds:**  
Automotive end markets, off-highway demand, legacy program roll-offs, commodity costs.

**Investment Risks:**  
Exposure to cyclical end markets (automotive, commercial vehicle, off-highway), raw material costs, customer concentration, continued restructuring actions, new business launches, and modeling risk.

## Revenue Profile (FY2019):

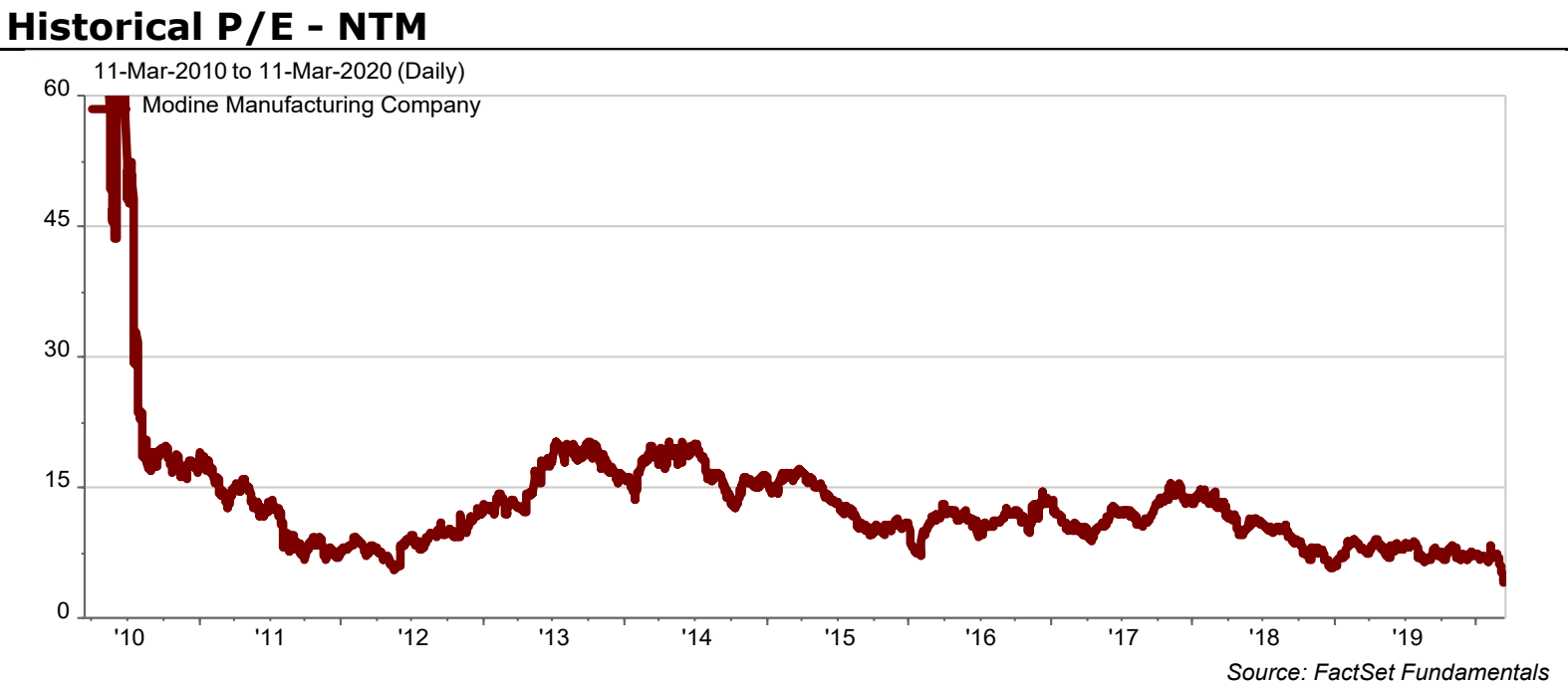


Size (in millions)	
Market Cap	\$226
Enterprise Value	\$726
Sales	\$2,213
Daily Trading Volume	\$2

Fundamentals	
Net Debt/EBITDA (LTM)	3.33x
FCF Yield (2020 Est.)	12.22%
Pre-Tax ROA	6.04%
Dividend Yield:	-



Financial Summary (March):				consensus estimates	
\$ millions	2017	2018	2019	2020E	2021E
Revenue	1,503	2,103	2,213	1,993	1,978
% chg	11%	40%	5%	-10%	-1%
Baird Revenue Est:				1,992	2,016
EBITDA	115	192	209	152	189
% margin	7.7%	9.1%	9.4%	7.6%	9.5%
EBIT	69	120	132	91	110
% margin	4.6%	5.7%	6.0%	4.6%	5.6%
EPS	\$0.78	\$1.54	\$1.57	\$0.97	\$1.18
% chg	3%	97%	2%	-39%	22%
Baird EPS est:	-	-	-	\$0.97	\$1.33
P/E Multiple:	-	-	-	4.60x	3.77x



Last-cycle median was 17.7x LTM EPS

# Navistar International (NAV)

**Price (3/12/20):** \$26.59 (\$22 - \$38)  
**Rating/Suit:** **Neutral / Higher Risk**  
**Target Price:** \$35 Our \$35 price target is equal to the buyout offer TRATON has offered Navistar to purchase the remaining shares of the company

Size (in millions)	
Market Cap	\$2,645
Enterprise Value	\$6,824
Sales	\$11,251
Daily Trading Volume	\$18

Fundamentals	
Net Debt/EBITDA (LTM)	1.84x
FCF Yield (2020 Est.)	6.78%
Pre-Tax ROA	5.29%
Dividend Yield:	0.00%

BAIRD

## Competitors:

Daimler, PACCAR, Volvo/Mack, Ford, Hino, BAE Systems, General Dynamics, Caterpillar, Cummins

## Company Description:

Headquartered in Lisle, Illinois, Navistar International is a major manufacturer of medium- and heavy-duty commercial trucks, buses, RVs, concrete mixers, and military vehicles. The company also produces a full lineup of engines that the company employs in its own vehicles and sells to external customers, largely in Brazil.

## Business Model Strengths:

**Innovative approach.** The company was the first to develop the "aero-style" cab (now the predominant cab) and use 13-liter engines for the class 8 truck (growing in popularity).

**Focus on "core" North America business** through structural cost savings and new engine strategy that will benefit the company as volumes return.

**Engine strategy.** The company has revamped its engine strategy through offering the Cummins ISX (15-liter) and ISB (6.7-liter) engines in addition to the company's engines (new A26 12.4-liter).

**Warranty improvement.** A few years ago, warranty expense was running in the mid to high single digits. The company believes this rate can now stay in the 2-2.5% (normal for the industry).

**Market share improvement is expected to come from:** 1. Project Horizon (new truck lineup launched in 2017-2018), 2. Medium-duty trucks (full engine lineup after Cummins launch), 3. Launch of Class 4/5 offering jointly developed with GM.

## Headwinds:

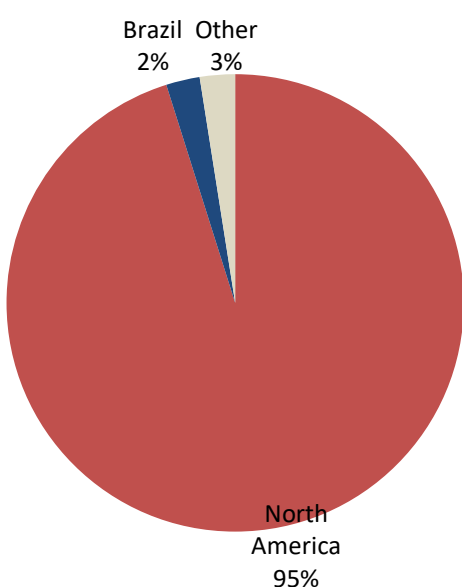
Non-diversified end markets, competitive environment, and higher input costs.

## Investment Risks:

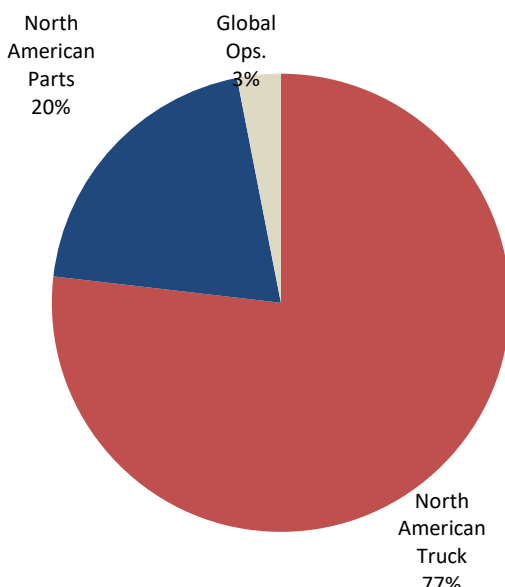
Cyclical end markets, emissions regulations, fuel economy/CO2 regulations, ability to regain market share, major customers, credit markets/availability, loan portfolio performance, raw material prices, post-retirement liabilities, high financial leverage, union labor agreements, and modeling risk.

## Revenue Profile (FY2019):

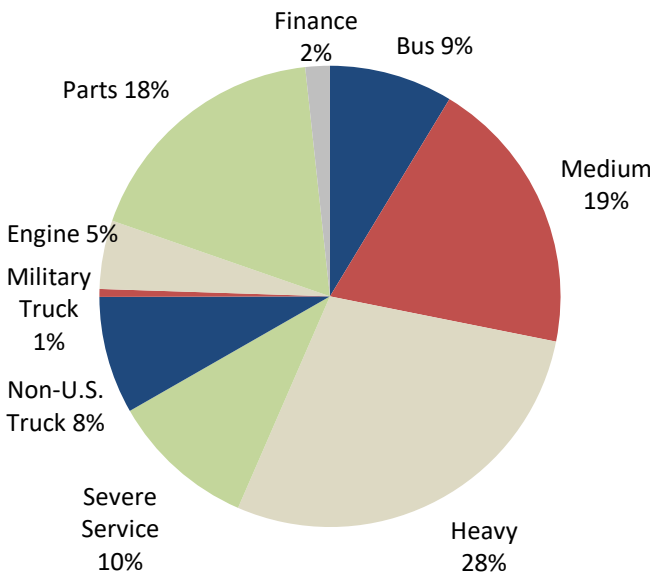
### Geography:



### Segments:



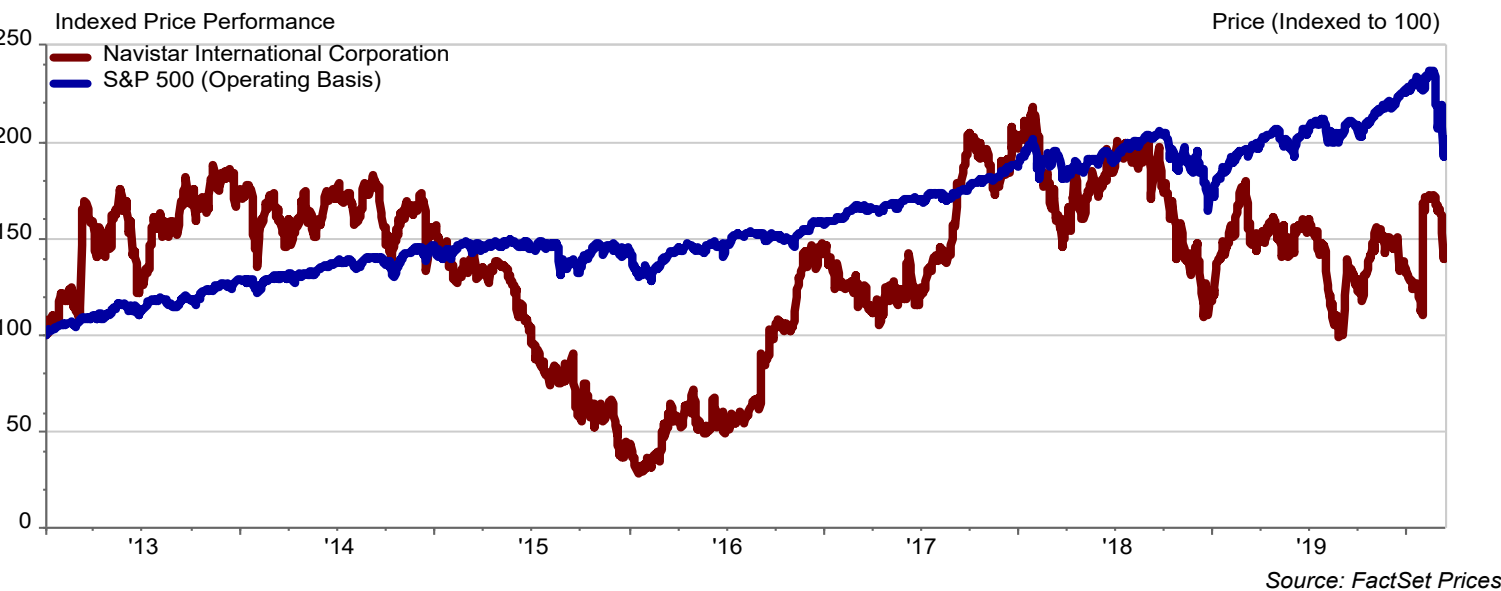
### End Markets:



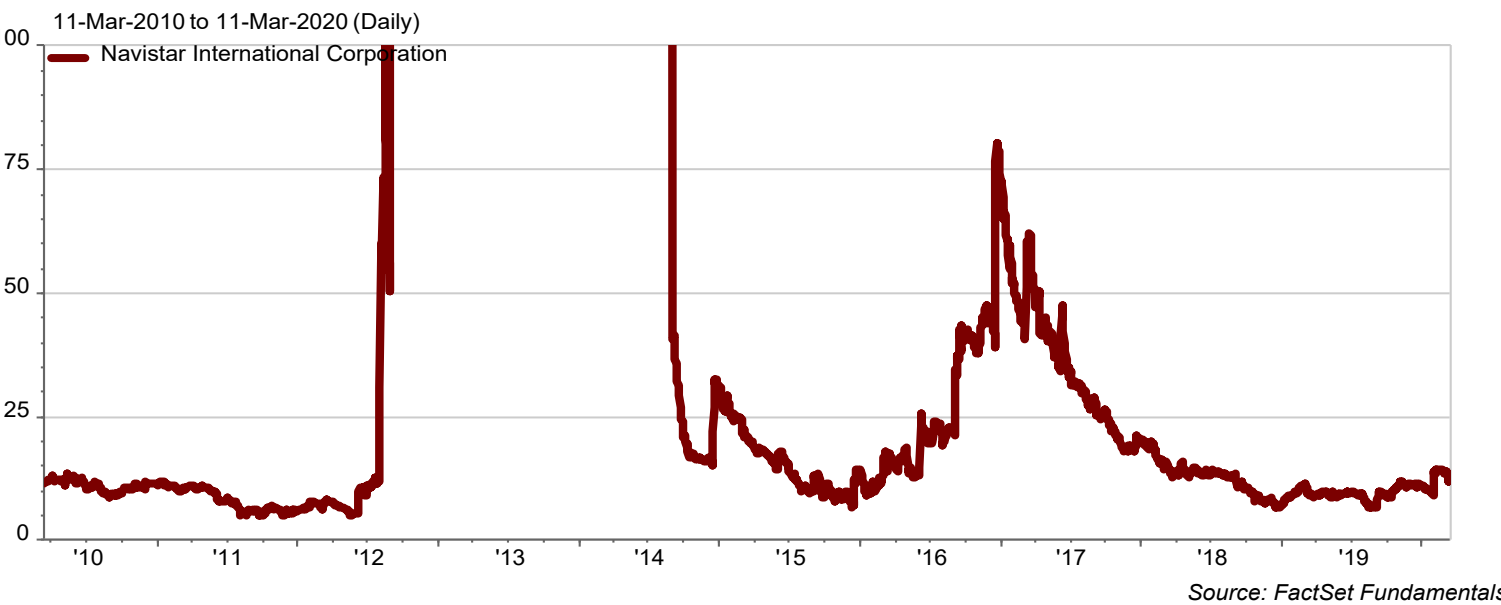
## Financial Summary (October):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
Revenue	8,428	10,250	11,251	9,289	9,596
% chg	4%	22%	10%	-17%	3%
Baird Revenue Est:				9,348	9,959
EBITDA	582	826	882	696	763
% margin	6.9%	8.1%	7.8%	7.5%	7.9%
EBIT	382	686	729	543	604
% margin	4.5%	6.7%	6.5%	5.8%	6.3%
EPS	\$0.31	\$3.41	\$4.25	\$2.38	\$2.86
% chg	NM	1000%	25%	-44%	20%
Baird EPS est:	-	-	-	\$2.35	\$3.00
P/E Multiple:	-	-	-	11.17x	9.30x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 9.0x LTM EPS

# PACCAR (PCAR)

**Price (3/12/20):** \$58.66 (\$61 - \$83)

**Rating/Suit:** **Outperform / Average Risk**

**Target Price:** \$85 9.5x 2022E EBITDA, equal to valuation observed at mid-cycle EBITDA, discounted by 10%.

## Size (in millions)

Market Cap	\$20,319
Enterprise Value	\$27,569
Sales	\$22,139
Daily Trading Volume	\$104

## Fundamentals

Net Debt/EBITDA (LTM)	-1.53x
FCF Yield (2020 Est.)	5.99%
Pre-Tax ROA	8.42%
Dividend Yield:	1.70%

**BAIRD**

## Competitors:

Daimler, Navistar, Volvo/Mack, TRATON, Renault

## Company Description:

Headquartered in Bellevue, Washington, PACCAR is a leading manufacturer of medium- and heavy-duty trucks, marketed under the Kenworth, Peterbilt, and DAF nameplates. The company's trucks are used for both over-the-road hauling of freight and off-highway construction/mining/oil & gas applications. PACCAR also provides financing and leasing to its customers and dealers through wholly owned finance subsidiaries.

## Business Model Strengths:

**Premium truck brands.** PACCAR brands broadly recognized as "premium" offering in the space.

**Pricing ability.** PACCAR brands have historically received a pricing premium, and implemented annual price increases, in excess of other manufacturers.

**Superior profitability.** PACCAR has historically generated profitability above truck peers. During the last cycle, PACCAR's avg. EBITDA margin (10.2%) was second only to Scania AB.

**Increasing MX engine penetration supports aftermarket growth.** PACCAR has steadily increased the percentage of vehicles equipped with an in-house MX engine. As this population begins to exit the warranty period, we expect to see stronger growth in the aftermarket business.

**Strong cash position.** PACCAR has strong cash flow generation, which is used to enhance shareholder returns (via regular dividend, "special" dividends, and share buybacks).

## Headwinds:

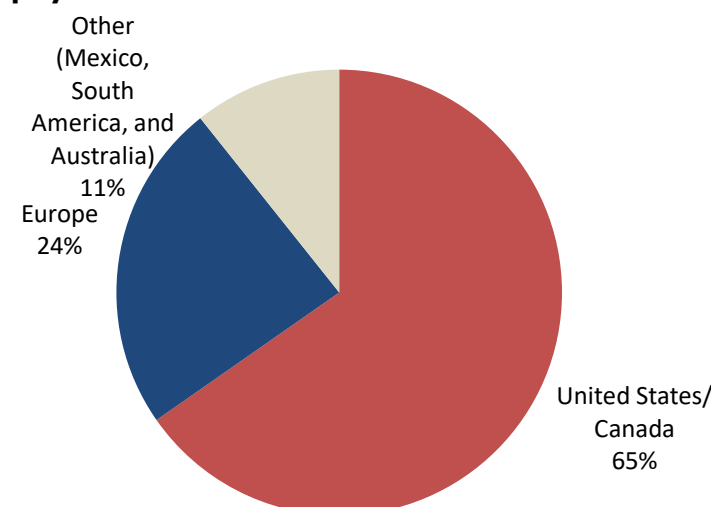
Class 8 sentiment, European truck markets, increased investment spending for electrification.

## Investment Risks:

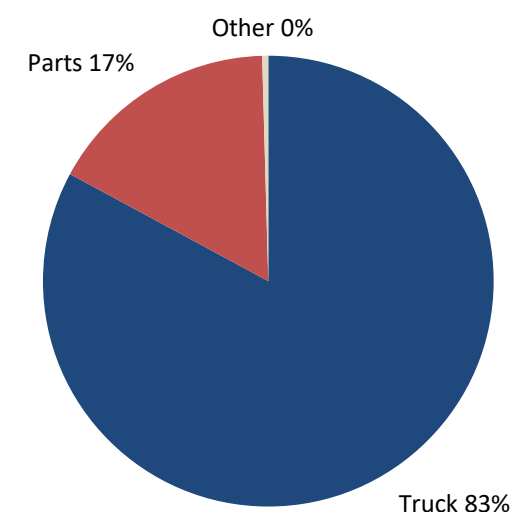
Cyclical end markets, commodity prices, credit markets/availability, loan portfolio performance, post-retirement liabilities, FX, premium market position, emissions/fuel economy regulations, and major shareholders.

## Revenue Profile (FY2019):

### Geography:



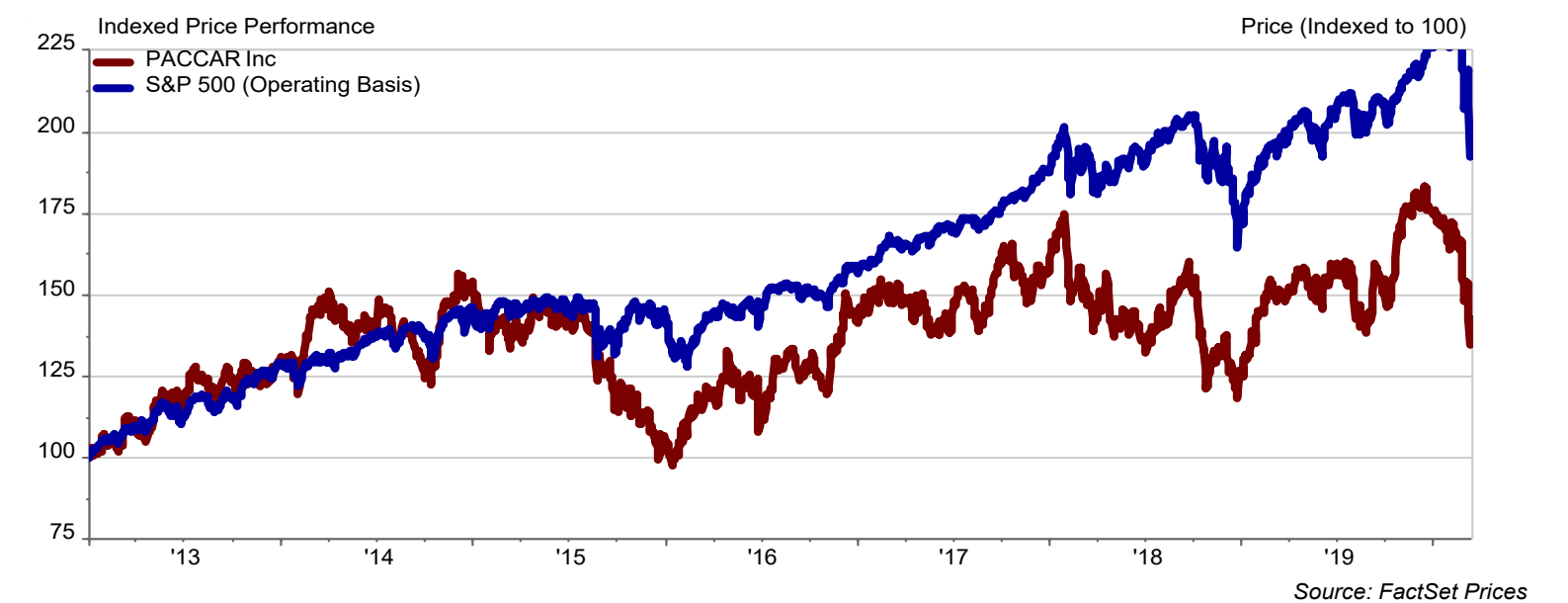
### End Markets:



## Financial Summary (December):

\$ millions	2016	2017	2018	consensus estimates	
				2019E	2020E
<b>Revenue</b>	15,847	18,188	22,139	24,120	20,205
% chg	-17%	15%	22%	9%	-16%
<b>Baird Revenue Est:</b>				24,120	20,245
<b>EBITDA</b>	2,723	3,262	2,870	3,153	2,520
% margin	17.2%	17.9%	13.0%	13.1%	12.5%
<b>EBIT</b>	1,640	1,880	2,383	2,676	2,035
% margin	10.4%	10.3%	10.8%	11.1%	10.1%
<b>EPS</b>	\$3.85	\$4.26	\$6.24	\$6.87	\$5.24
% chg	-15%	11%	46%	10%	-24%
<b>Baird EPS est:</b>	-	-	-	\$6.87	\$5.39
<b>P/E Multiple:</b>	-	-	-	8.54x	11.20x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



**Last-cycle median was 14.2x LTM EPS**



# Snap-on (SNA)

**Price (3/12/20):** \$122.26 (\$129 - \$172)  
**Rating/Suit:** **Neutral / Average Risk**  
**Target Price:** \$157 9.0x 2020E EBITDA, the median of the historical trading range, discounted by 15%.

**Size (in millions)**  
Market Cap \$6,683  
Enterprise Value \$8,133  
Sales \$3,730  
Daily Trading Volume \$54

**Fundamentals**  
Net Debt/EBITDA (LTM) 0.08x  
FCF Yield (2020 Est.) 7.67%  
Pre-Tax ROA 16.00%  
Dividend Yield: 2.70%

BAIRD

**Competitors:**  
**Tools Group:** MAC Tools (Stanley), Matco (Fortive), Cornwell; **RS&I:** Bosch, CDK

**Company Description:**  
Snap-on Incorporated, headquartered in Kenosha, Wisconsin, is a leading global developer, manufacturer and marketer of tools, equipment, and diagnostic solutions for professional technicians, automotive service centers, OEMs, and commercial and industrial tool users worldwide.

**Business Model Strengths:**  
**Premium, respected tools.** Snap-on brands are widely known as offering the highest-quality, most-reliable tools in the marketplace.

**Vehicle changes.** While aging fleet drives auto repair demand, changing vehicles drive demand for tools, equipment, and diagnostics. Today's vehicles are increasingly complex.

**Asia Pacific.** Snap-on's business (currently \$300-400 million) could rival size of the US business (\$2 billion) as growing fleet of cars ages, driving demand for repair equipment, diagnostics and tools.

**Critical tools.** Focus on non-auto repair presents long-term opportunity as Snap-on gains greater understanding of work performed in these markets and develops work-specific tools for this channel.

**Tools Group growth drivers.** Focus on reducing franchisee turnover (<10%), increasing productivity and steady flow of new products are responsible.

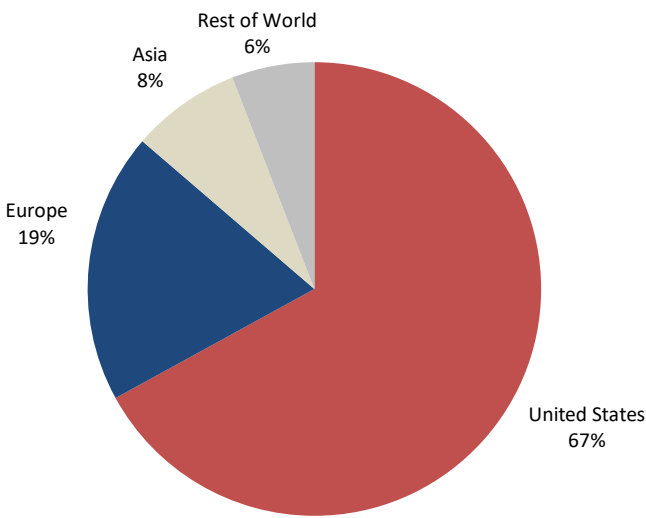
**Snap-on Credit.** This business is vital for SNA as auto mechanics finance 95% of their tool purchases, with one-third of these purchases handled by Snap-on Credit.

**Headwinds:**  
Investor sentiment concerning Tools growth and Credit company risk.

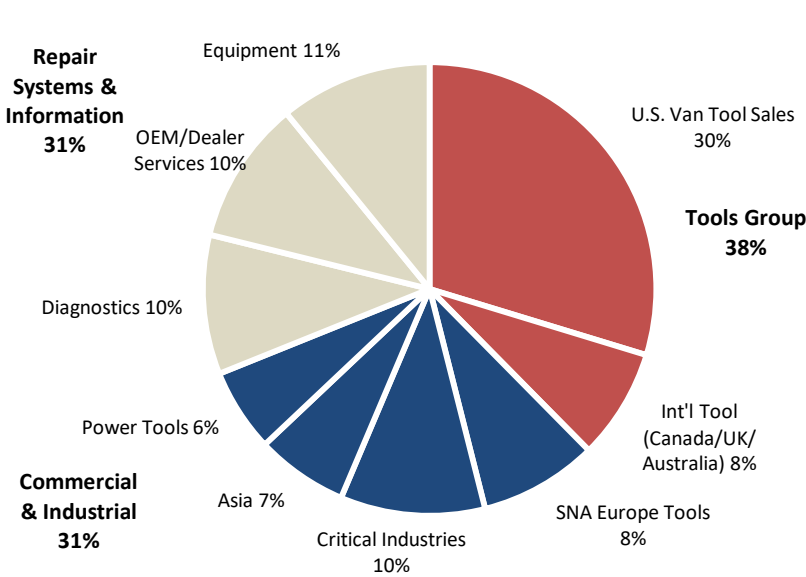
**Investment Risks:**  
End-market demand, consumer and repair shop owner confidence, number of miles driven affecting the repair business, limited intra-quarter visibility, and post-retirement liabilities.

## Revenue Profile (FY2018):

### Geography:



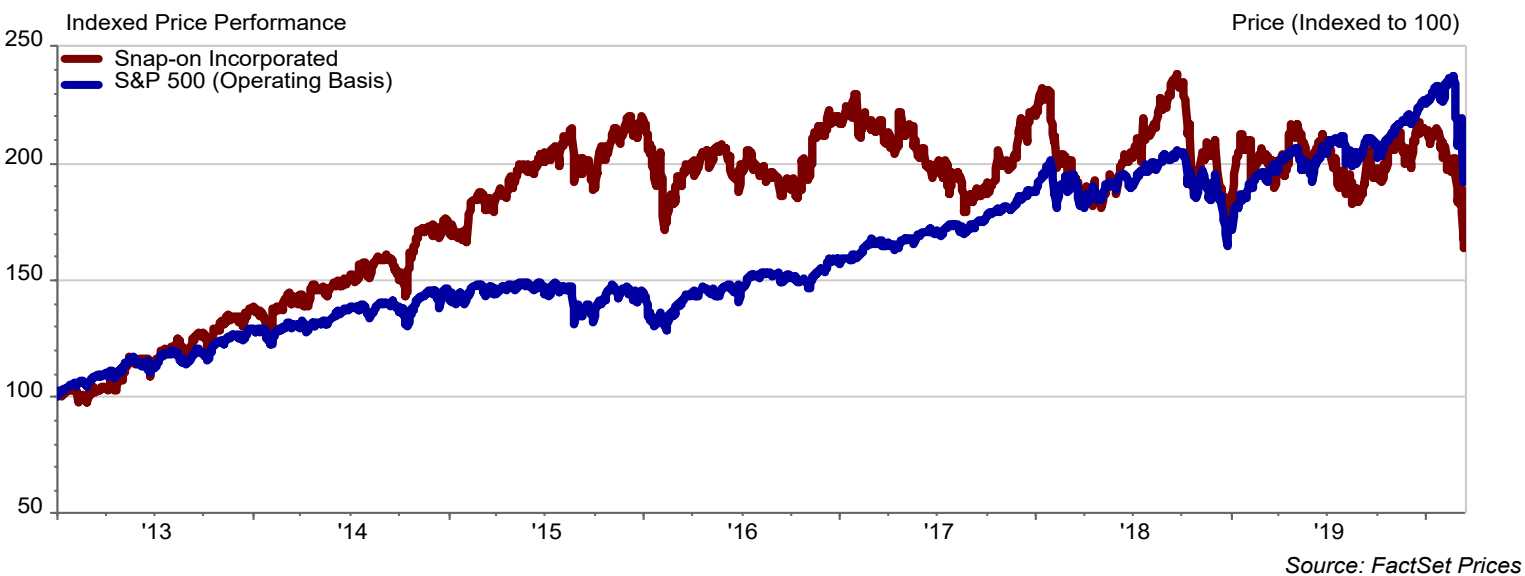
### End Markets:



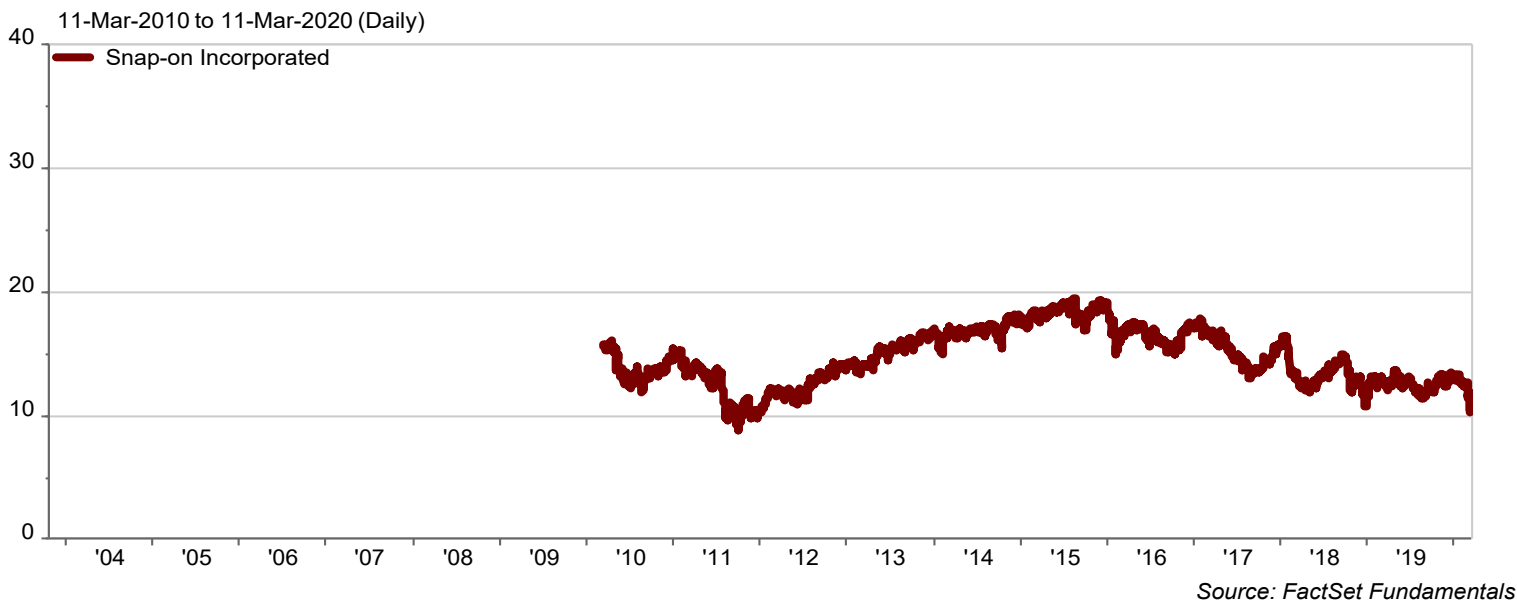
Financial Summary (December):				consensus estimates	
\$ millions	2017	2018	2019	2020E	2021E
Revenue	3,687	3,741	3,730	3,799	3,896
% chg	7%	1%	0%	2%	3%
Baird Revenue Est:				3,827	3,925
EBITDA	1,001	986	1,055	1,058	1,089
% margin	27.2%	26.3%	28.3%	27.9%	27.9%
EBIT*	710	722	705	748	778
% margin	19.3%	19.3%	18.9%	19.7%	20.0%
EPS	\$10.04	\$11.81	\$12.26	\$12.49	\$13.03
% chg	9%	18%	4%	2%	4%
Baird EPS est:	-	-	-	\$12.30	\$12.71
P/E Multiple:	-	-	-	9.79x	9.38x

\*Ex-Snap-On Credit

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 17.4x LTM EPS



# TE Connectivity Ltd. (TEL)

**Price (3/12/20):** \$69.26 (\$73 - \$100)

**Rating/Suit:** **Neutral / Average Risk**

**Target Price:** \$93 11.0x calendar 2022E EBITDA, median valuation of the 3-4 yr trading range, discounted by 10%. We believe the median is appropriate given potential for improving end market volumes.

## Size (in millions)

Market Cap	\$23,143
Enterprise Value	\$28,139
Sales	\$13,448
Daily Trading Volume	\$114

## Fundamentals

Net Debt/EBITDA (LTM)	1.31x
FCF Yield (2020 Est.)	5.59%
Pre-Tax ROA	10.83%
Dividend Yield:	2.01%

**BAIRD**

## Competitors:

Yazaki, Aptiv, Delphi, Sumitomo, Sensata, Honeywell, Molex, Amphenol, JST, Korea Electric Terminal

## Company Description:

TE Connectivity, headquartered in Switzerland, is a global leader in connector systems and sensors. Since its separation from Tyco International and initial public offering in 2007, the company has proactively managed its product portfolio to align the business with industries that present the most challenging operating environments for electrical systems. Today, TE Connectivity products connect and distribute power, data, and signals across a total addressable market opportunity of \$170 billion.

## Business Model Strengths:

**Global leader in connectivity.** Connectors are the critical link in an electrical system, creating a circuit to transmit power, data, and signals between wires, cables, circuit boards and other components. TE is the largest supplier of connection systems in the \$70 billion connector market.

**Increasing content per vehicle.** With advancements in safety, efficiency/electrification, and connectivity, vehicle content growth is expected to reach the mid \$80s by 2020 (+6% CAGR) versus the low \$60s today. Higher content in hybrids and EVs could support content above \$100 by 2025.

**"Harsh" environments favor TE.** TE provides connection solutions for applications exposed to extremes in temperature, pressure, and vibration. This fragmented market favors TE's manufacturing scale and engineering resources, providing an opportunity for market share gains.

**Margin expansion.** Sensors, industrial products, SG&A reduction all margin opportunities.

## Headwinds:

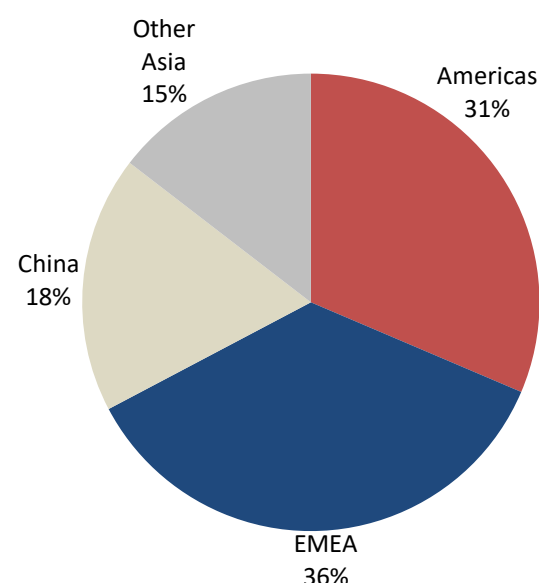
Valuation, competitive pressures, contractual price-downs.

## Investment Risks:

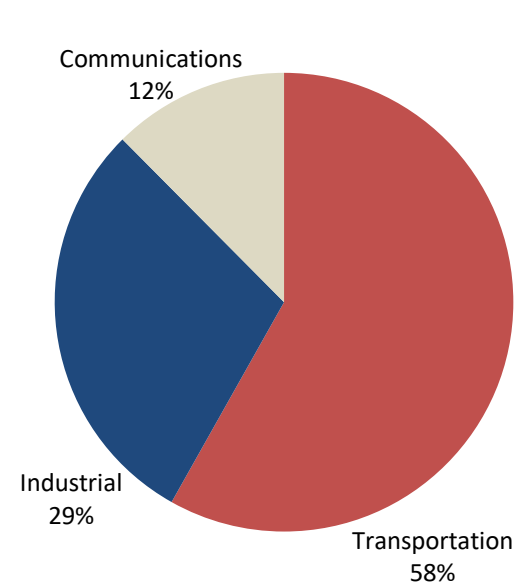
Competitive pressures, cyclical end markets (automotive, industrial, aerospace/defense/oil & gas, consumer products), acquisition integration risks/ability to deliver synergies, commodity/currency price changes, disruptions at suppliers and/or customers, risks in modeling financials given limited visibility in certain channels/end markets, and Swiss incorporation.

## Revenue Profile (FY2019):

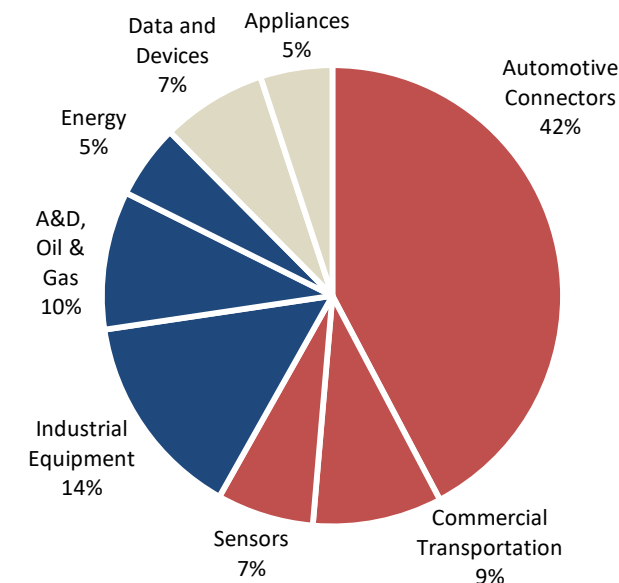
### Geography:



### Segments:



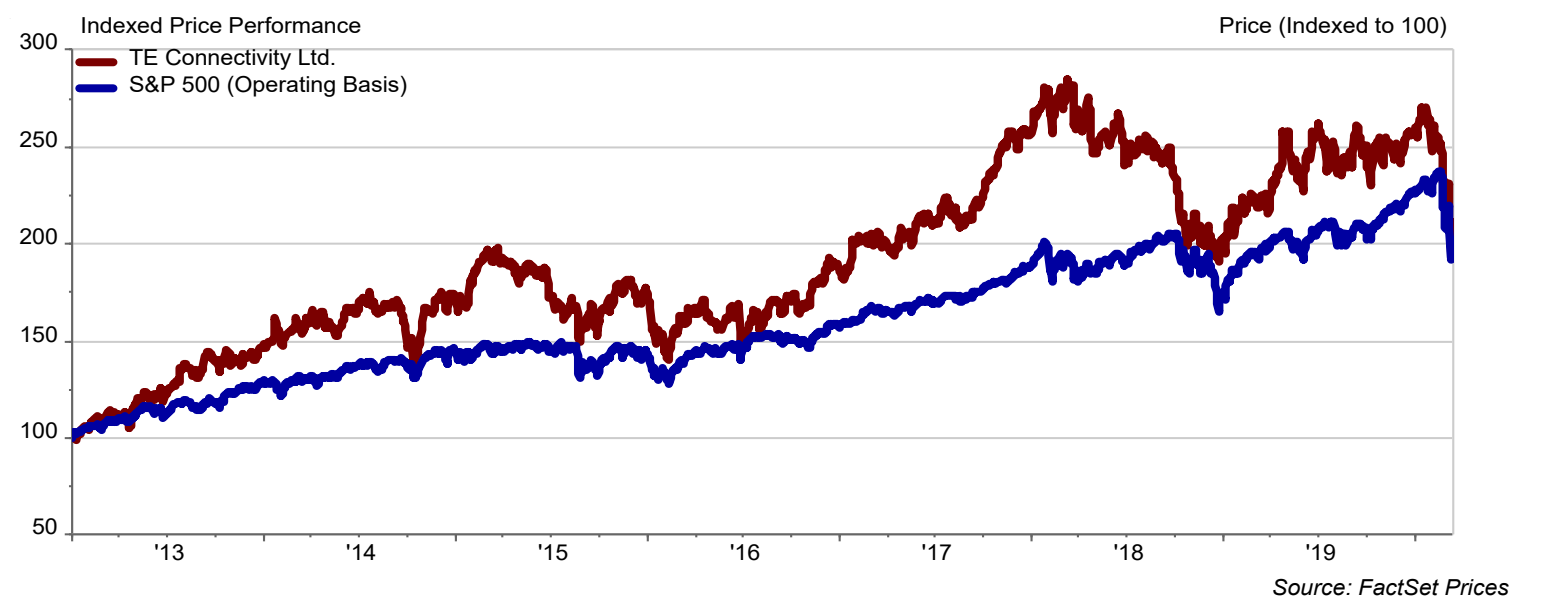
### End Markets:



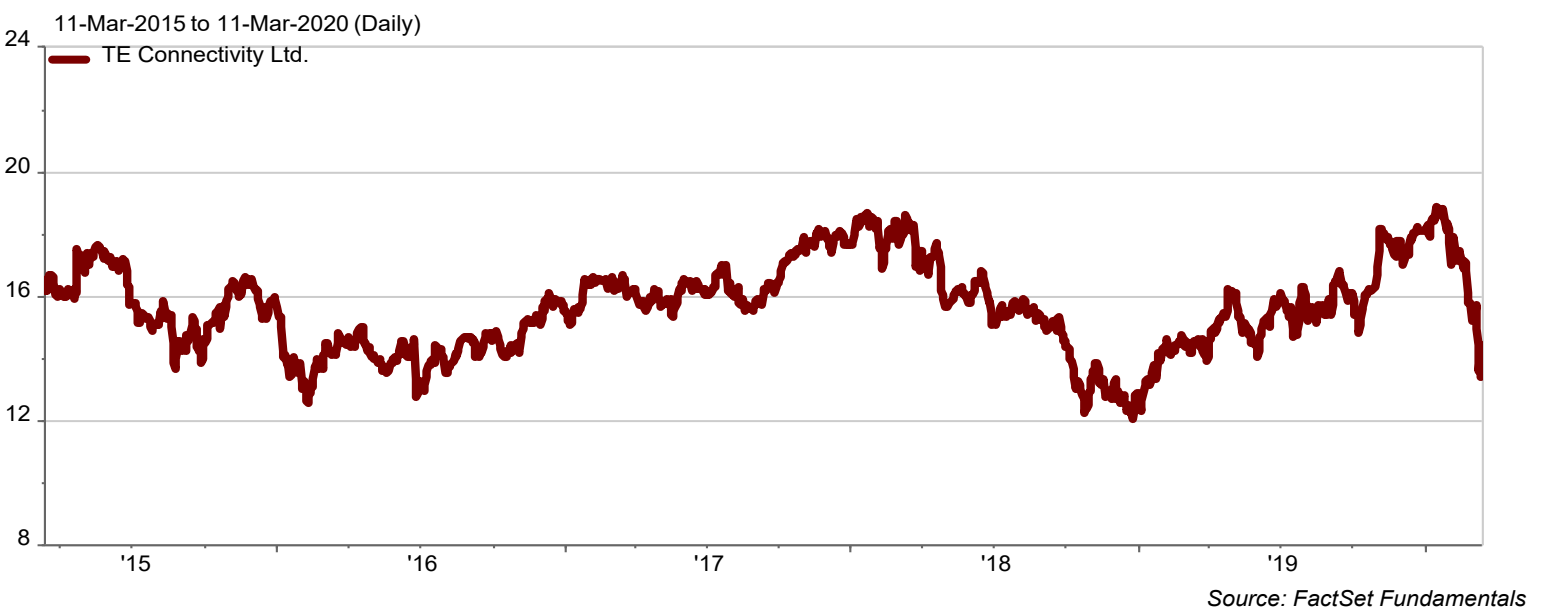
## Financial Summary (September):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
<b>Revenue</b>	12,185	13,988	13,448	13,014	13,591
% chg	0%	15%	-4%	-3%	4%
<b>Baird Revenue Est:</b>				13,080	13,854
<b>EBITDA</b>	2,645	3,146	2,969	2,826	3,056
% margin	21.7%	22.5%	22.1%	21.7%	22.5%
<b>EBIT</b>	2,034	2,479	2,280	2,137	2,362
% margin	16.7%	17.7%	17.0%	16.4%	17.4%
<b>EPS</b>	\$4.46	\$5.61	\$5.55	\$5.17	\$5.76
% chg	9%	26%	-1%	-7%	11%
<b>Baird EPS est:</b>	-	-	-	\$5.23	\$5.88
<b>P/E Multiple:</b>	-	-	-	13.39x	12.02x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



# Visteon Corporation (VC)

**Price (3/12/20):** \$49.85 (\$45 - \$96)

**Rating/Suit:** **Outperform / Higher Risk**

**Target Price:** \$100  
8.5x 2022E EBITDA, median of trading range during periods of prior expected growth inflection, discounted by 15%. We believe median of this timeframe is appropriate given 2020-22 growth inflection.

## Size (in millions)

Market Cap

\$1,397

Enterprise Value

\$1,762

Sales

\$2,945

Daily Trading Volume

\$18

## Fundamentals

Net Debt/EBITDA (LTM)

0.41x

FCF Yield (2020 Est.)

3.28%

Pre-Tax ROA

8.23%

Dividend Yield:

0.00%

**BAIRD**

## Competitors:

Alpine Electronics, Aptiv, Bosch, Continental, Denso, Harman, LG, Nippon Seiki, Panasonic, Pioneer

## Company Description:

Headquartered in Van Buren Township, Michigan, Visteon Corporation is a leading supplier of cockpit electronics for the global auto industry. Primary product lines include instrument clusters/displays, audio/infotainment systems, connectivity/telematics solutions, and electronic control modules.

## Business Model Strengths:

**Competitive position in "key" electronic categories.** Visteon is strongly aligned with the fastest-growing product opportunities in the cockpit electronics space. In 2017, the overall market surpassed \$30 billion in value, and we expect it to approach \$50 billion by 2022 (growth of 9% annually).

**Accelerating new business.** We estimate bookings support mid-single-digit new business growth in 2019, accelerating to double-digit new business growth in 2020-2022.

**Solid competitive position in China.** Unlike most Electronics' competitors that have shifted exposure/assets into China (from high-cost Western footprints), Visteon's beginnings in China are a natural point of strength (partnered with local OEMs through JVs, operating through low-cost footprint).

**Improving EBITDA margins.** While EBITDA margins are expected to be under pressure through 2019, we believe operating leverage (primary driver) and operating efficiencies (smaller benefit) can drive EBITDA margin back toward 12% over the next 2-3 years.

**Capital deployment.** Visteon maintains a net cash position and is committed to using cash for buybacks and/or M&A.

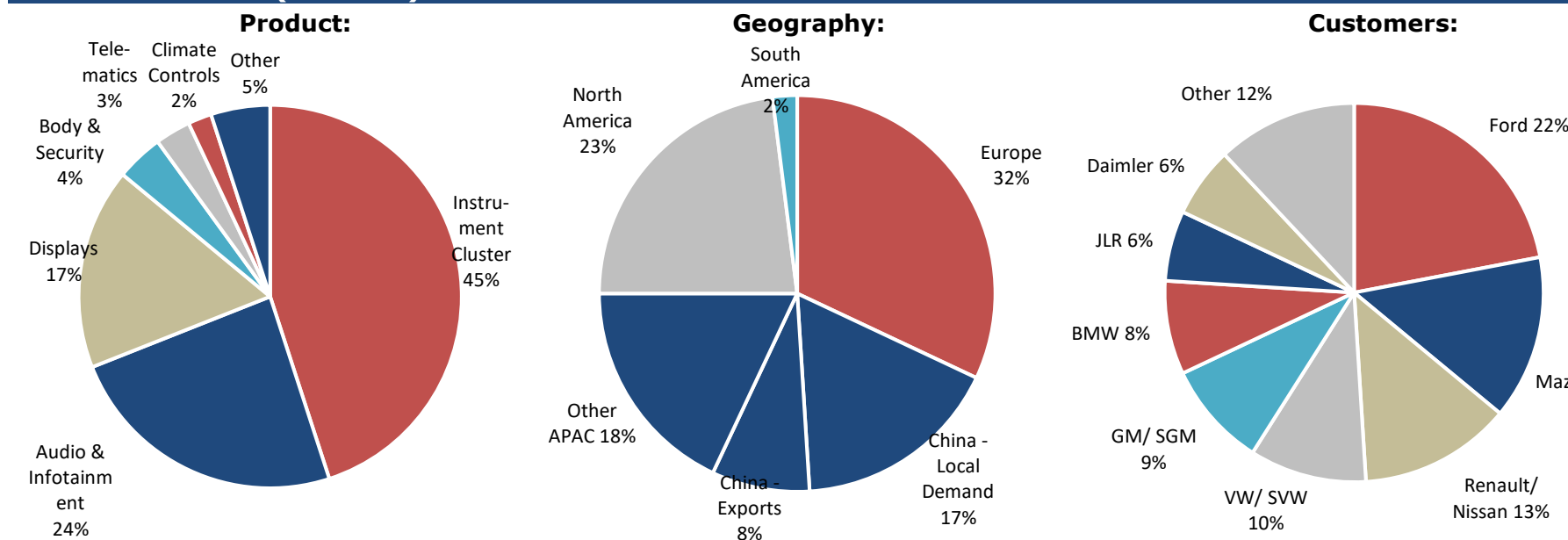
## Headwinds:

Pace of new business launches, vehicle production at key customers, and legacy business roll-offs.

## Investment Risks:

Automotive environment, competitive landscape, key customers, major programs, foreign currency exposure, raw material costs, deployment of excess capital, modeling risk, and pension obligations.

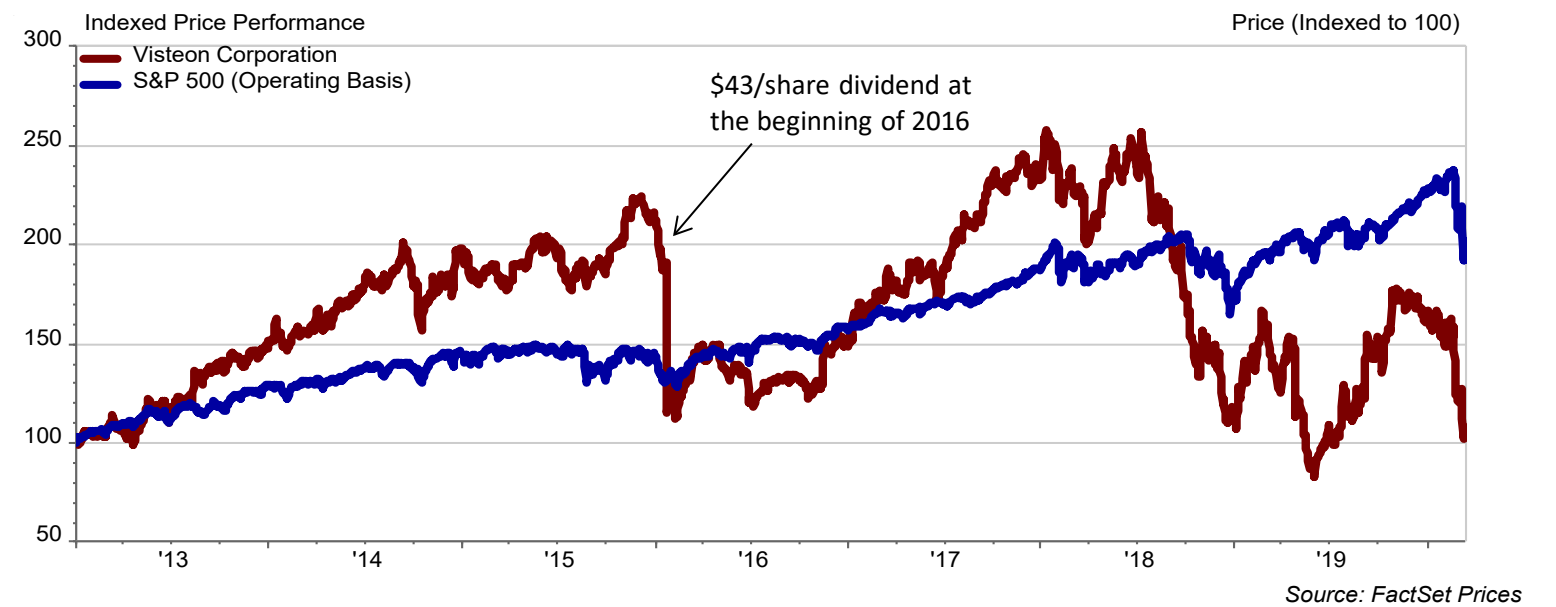
## Revenue Profile (FY2019):



## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates	
				2020E	2021E
<b>Revenue</b>	3,146	2,984	2,945	3,033	3,377
% chg	0%	-5%	-1%	3%	11%
<b>Baird Revenue Est:</b>				2,989	3,403
<b>EBITDA</b>	370	330	234	246	311
% margin	11.8%	11.1%	7.9%	8.1%	9.2%
<b>EBIT</b>	282	239	124	140	199
% margin	9.0%	8.0%	4.2%	4.6%	5.9%
<b>EPS</b>	\$6.15	\$6.13	\$2.77	\$3.12	\$4.94
% chg	16%	0%	-55%	13%	59%
<b>Baird EPS est:</b>	-	-	-	\$3.08	\$4.84
<b>P/E Multiple:</b>	-	-	-	16.16x	10.30x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



# Veoneer (VNE)

**Price (3/12/20):** \$7.53 (\$9 - \$29)

**Rating/Suit:** Neutral / Speculative Risk

**Target Price:** \$16 0.8x 2022 EV/Sales, the median valuation of the post-spin trading range, plus Zenuity equity income at 2.5x 2025E EV/Sales, discounted by 20%.

## Size (in millions)

Market Cap	\$3,500
Enterprise Value	\$2,538
Sales	\$2,334
Daily Trading Volume	NFM

## Fundamentals

Net Debt/EBITDA (LTM)	NFM
FCF Yield (2020 Est.)	NFM
Pre-Tax ROA	NFM
Dividend Yield:	0.00%

**BAIRD**

## Competitors:

Aptiv, Bosch, Conti, Denso, Magna, Valeo, ZF, Intel/Mobileye, NVIDIA, Uber, Waymo, ADVICS, Mando

## Company Description:

Headquartered in Stockholm, Sweden, Veoneer, Inc. is a leading global supplier in the automotive safety electronics market, with a presence in three key product categories: restraint control systems, active safety, and brake systems.

## Business Model Strengths:

**Automotive safety electronics pure-play.** Veoneer is a pure-play on the automotive safety electronics market, with exposure to restraint control systems, active safety, and brake systems.

**Resurgence in orders drives 2020 revenue inflection.** The company is booking new business at an elevated level which supports a meaningful acceleration in results in early 2020.

**Increasing technical qualification broadens TAM.** Investments in new technologies are driving a meaningful uptick in the number of customers and in awarded orders.

**Leading player in Active Safety.** Veoneer is a leading player in the fast-growing active safety market and we believe this business is likely a key reason investors own Veoneer's stock.

**Zenuity JV enhances competitive position in the ADAS/autonomous driving space.**

**Significant market share opportunity in Brake Systems.** Veoneer has announced a second win with a North American OEM for a major vehicle platform.

## Headwinds:

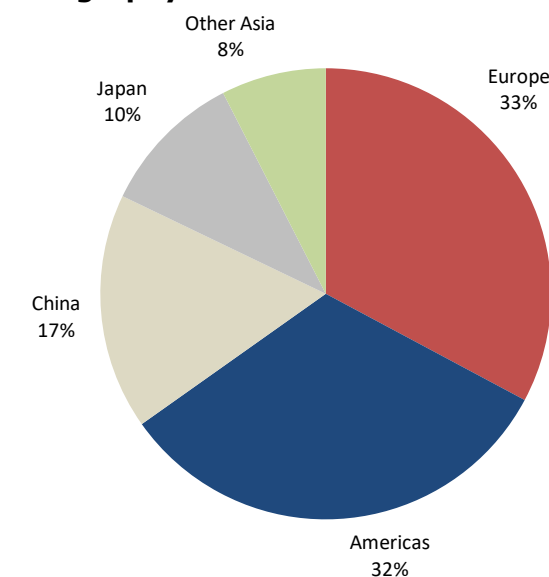
Investment spending, uncertain adoption of automated driving, restraint/brake control competition.

## Investment Risks:

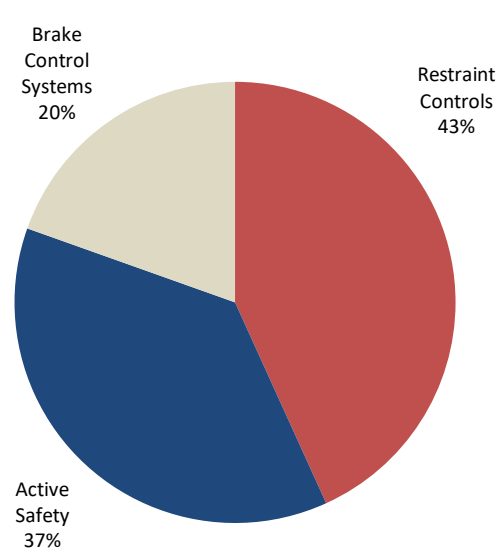
End-market demand, active safety take rates, customer concentration, high levels of investment, cash burn. Risk to Underperform rating: larger/faster pace of new business wins, faster ramp of Zenuity.

## Revenue Profile (FY2019):

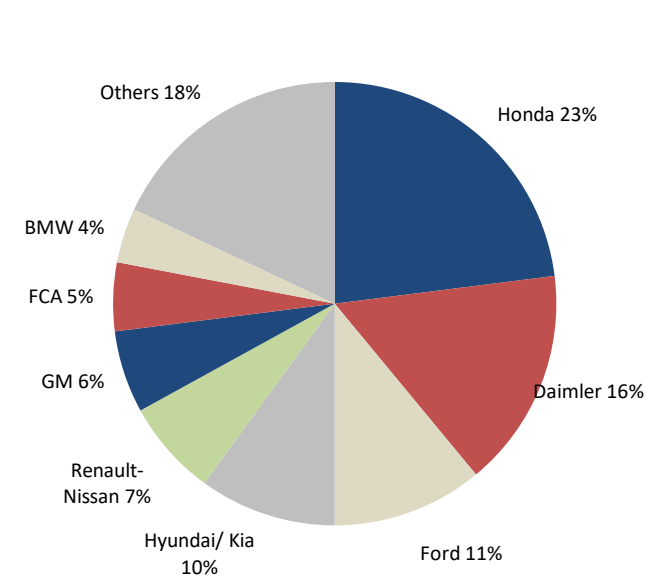
### Geography:



### End Markets:



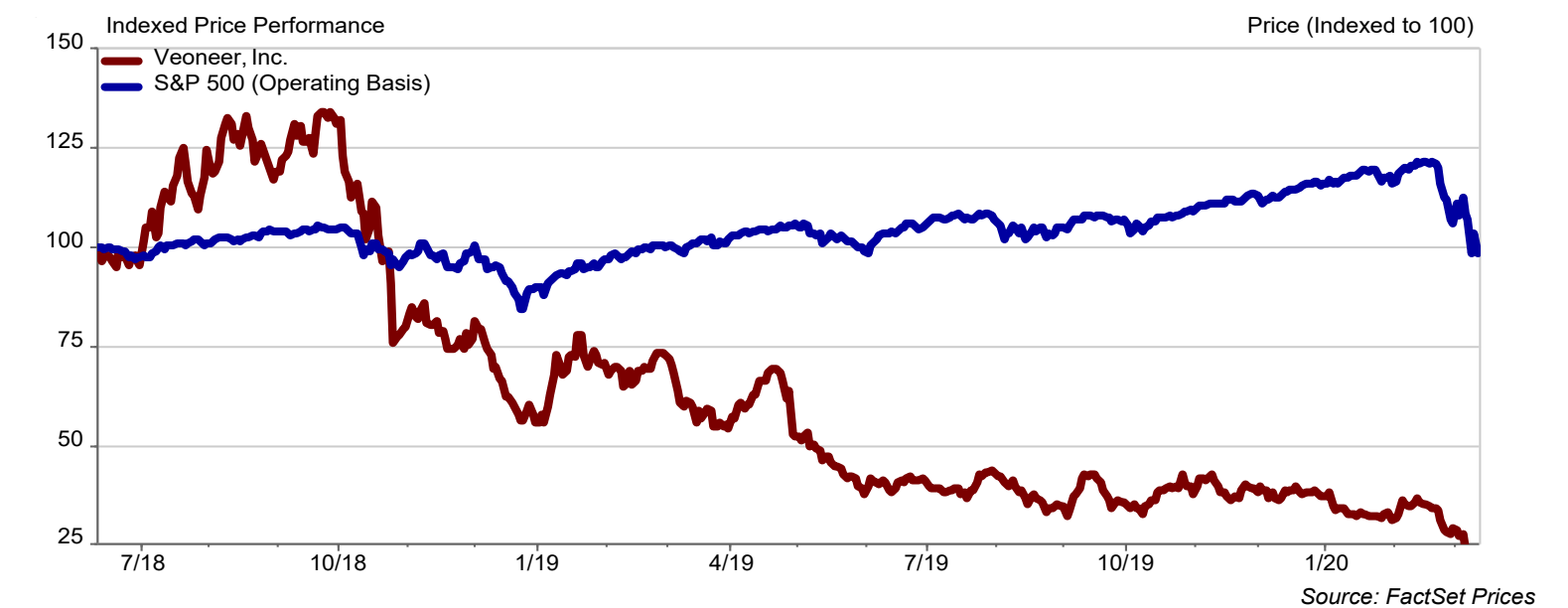
### Customers:



## Financial Summary (December):

\$ millions	2017	2018	2019	consensus estimates 2020E	2021E
<b>Revenue</b>	2,322	2,227	1,902	1,743	2,072
% chg	7%	-4%	-15%	-8%	19%
<b>Baird Revenue Est:</b>				1,706	2,085
<b>EBITDA</b>	82	-88	-343	-266	-140
% margin	3.5%	-3.9%	-18.0%	-15.3%	-6.8%
<b>EBIT</b>	-38	-197	-458	-373	-257
% margin	-1.6%	-8.8%	-24.1%	-21.4%	-12.4%
<b>EPS</b>	-\$1.18	-\$3.17	-\$4.92	-\$3.79	-\$2.65
% chg	-	169%	55%	-23%	-30%
<b>Baird EPS est:</b>	-	-	-	-\$3.90	-\$2.65
<b>P/E Multiple:</b>	-	-	-	NFM	NFM

## Stock Chart - from Jun 11, 2018





# AB Volvo (VOLV.B-SE)

**Price (3/12/20):** 118 kr (126 kr- 173 kr)  
**Rating/Suit:** **Outperform / Average Risk**  
**Target Price:** 190 kr 8.5x Cal-2022E EBITDA, equal to valuation observed at prior cyclical recoveries, discounted by 15%.

## Size (in millions)

Market Cap 239,134 kr  
Enterprise Value 362,506 kr  
Sales 390,834 kr  
Daily Trading Volume 600 kr

## Fundamentals

Net Debt/EBITDA (LTM) -0.18x  
FCF Yield (2020 Est.) 8.60%  
Pre-Tax ROA 6.93%  
Dividend Yield: 3.39%

BAIRD

## Competitors:

Daimler, Scania, MAN, Iveco, PACCAR, Navistar, Sinotruk, Caterpillar, Komatsu, CNH, Deere, Hitachi

## Company Description:

Headquartered in Gothenburg, Sweden, AB Volvo is a leading global manufacturer of commercial trucks, construction and road building equipment, commercial buses, and marine and industrial engines. The Group also offers various financial services solutions to customers via Volvo Financial Services.

## Business Model Strengths:

**Strong brands.** Volvo built its portfolio of strong brands through acquisitions in Truck (Mack, Renault, Nissan Diesel - now UD Trucks), Construction Equipment (Samsung, Lingong, Ingersoll Rand), and Bus (Prevost).

**Global, diversified products.** Volvo is one of the largest commercial truck and heavy-duty diesel engine manufacturers, along with the third-largest manufacturer of construction equipment.

**Industry-leading vertical integration.** Volvo has ~95% share of engines, ~85% of transmissions.

**Market share.** New products and sales distribution expansion has helped Volvo and Mack continue to gain market share in its end markets.

**Reducing structural costs.** In recent years, the company has focused on reducing structural costs (e.g., reducing facilities and employees), which leverages the business to returning volumes.

## Headwinds:

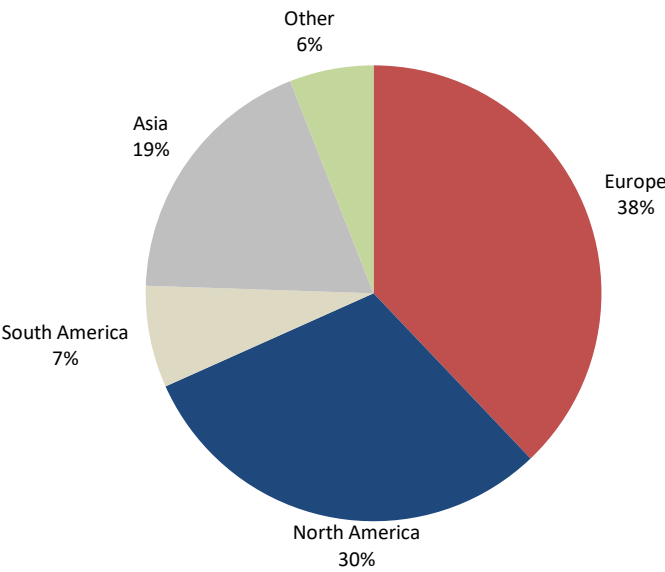
Supply chain bottlenecks, market share erosion, and higher commodity costs.

## Investment Risks:

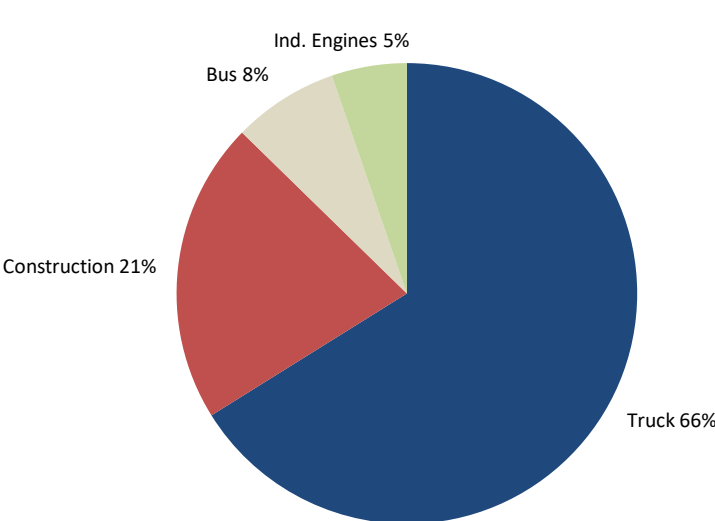
Cyclical end markets, capacity constraints from supply chain bottlenecks, foreign exchange, commodity risk, credit markets/availability, residual value risk, union labor agreements, government emissions/fuel efficiency regulations, dual-class share structure, modeling risk, and post retirement liabilities.

## Revenue Profile (FY2019):

### Geography:



### End Markets:



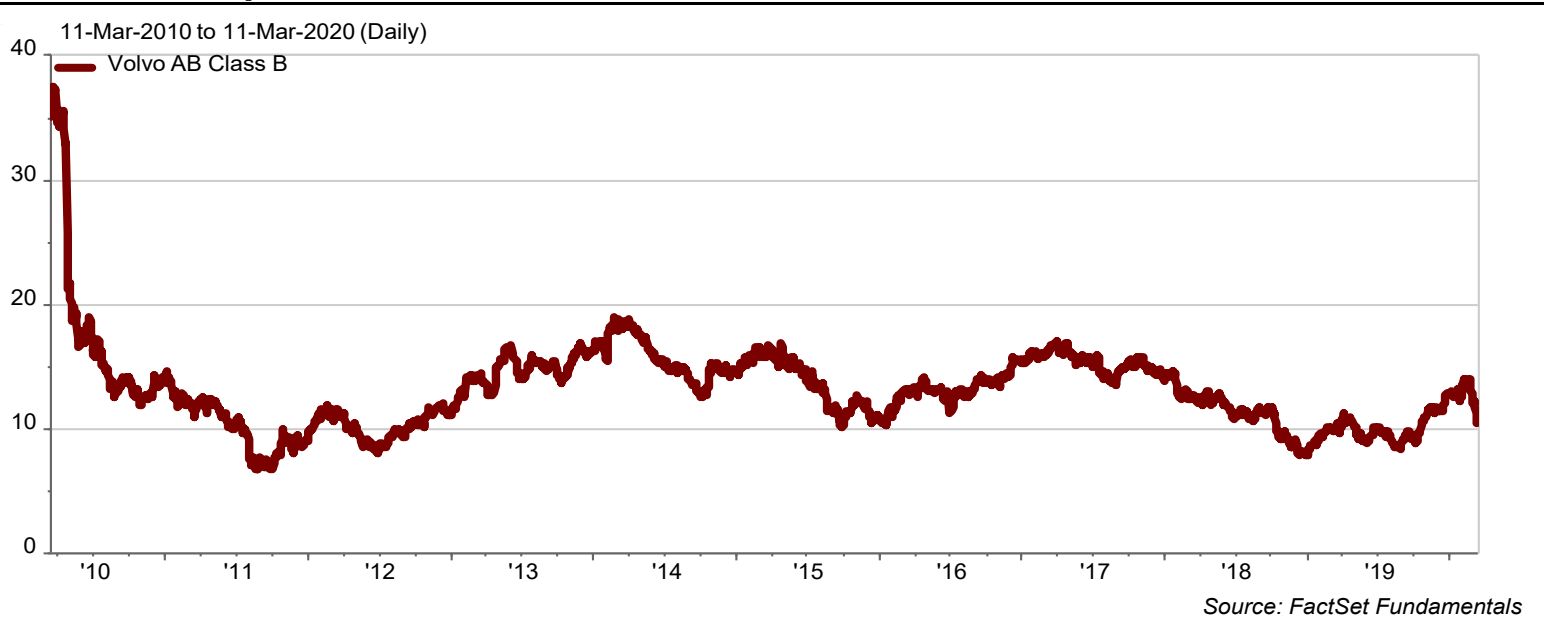
## Financial Summary (December):

<i>SEK millions</i>	2016	2017	2018	2019E	2020E
<b>Revenue</b>	291,459	323,809	390,834	432,234	405,778
% chg	-4%	11%	21%	11%	-6%
<i>Baird Revenue Est:</i>				418,360	375,312
<b>EBITDA</b>	31,641	40,334	55,385	64,078	51,210
% margin	10.9%	12.5%	14.2%	14.8%	12.6%
<b>EBIT</b>	19,008	27,736	39,306	47,267	34,614
% margin	6.5%	8.6%	10.1%	10.9%	8.5%
<b>EPS (Consensus)</b>	6.59 kr	10.32 kr	12.24 kr	17.64 kr	12.17 kr
% chg	-2%	57%	19%	44%	-31%
<i>Baird EPS est:</i>	-	-	-	17.64 kr	12.74 kr
<i>P/E Multiple:</i>	-	-	-	6.67x	9.66x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



Last-cycle median was 14.3x LTM EPS

# WABCO Holdings (WBC)

**Price (3/12/20):** \$130.55 (\$130 - \$146)

**Rating/Suit:** **Neutral / Higher Risk**

**Target Price:** \$137 11.0x 2019E EBITDA, equal to valuation valuation assigned in acquisition by ZF.

## Size (in millions)

Market Cap	\$6,693
Enterprise Value	\$6,911
Sales	\$3,831
Daily Trading Volume	\$92

## Fundamentals

Net Debt/EBITDA (LTM)	-0.09x
FCF Yield (2020 Est.)	3.77%
Pre-Tax ROA	12.13%
Dividend Yield:	0.00%

**BAIRD**

## Competitors:

Knorr-Bremse (U.S. subsidiary is Bendix), Haldex, Bosch, Continental

## Company Description:

Headquartered in Brussels, Belgium, WABCO Holdings is a leading provider of air management and electronic technologies, supplying advanced braking, stability, suspension, transmission controls, and air compressing systems for leading commercial truck, trailer, bus, and passenger car manufacturers.

## Business Model Strengths:

**Secular tailwind.** Often times WABCO's products pay for themselves through improving truck operating performance, reducing emissions, and enhancing safety.

**Above-market expansion.** Given the strong demand for its products and known/visible customer orders, WABCO anticipates it can continue to grow 6-10% above its truck & bus markets.

**History of innovation.** WABCO has introduced many new products to the industry, including air brakes, anti-lock braking system (ABS) for heavy trucks, electronically controlled air suspension, etc.

**Best-in-class cost structure.** WABCO has one of the best operating margins due to low-cost labor, low annual OEM price reductions (~1%) and material productivity initiatives (~4-5%).

**Increasing content per vehicle.** Customer pull and government regulation is expected to drive higher penetration of WABCO's products (ABS, AMT, OnGuard, air disc brakes).

**Free cash flow.** The company generates a high amount of free cash flow, which we expect it to use for share buybacks and potential acquisitions.

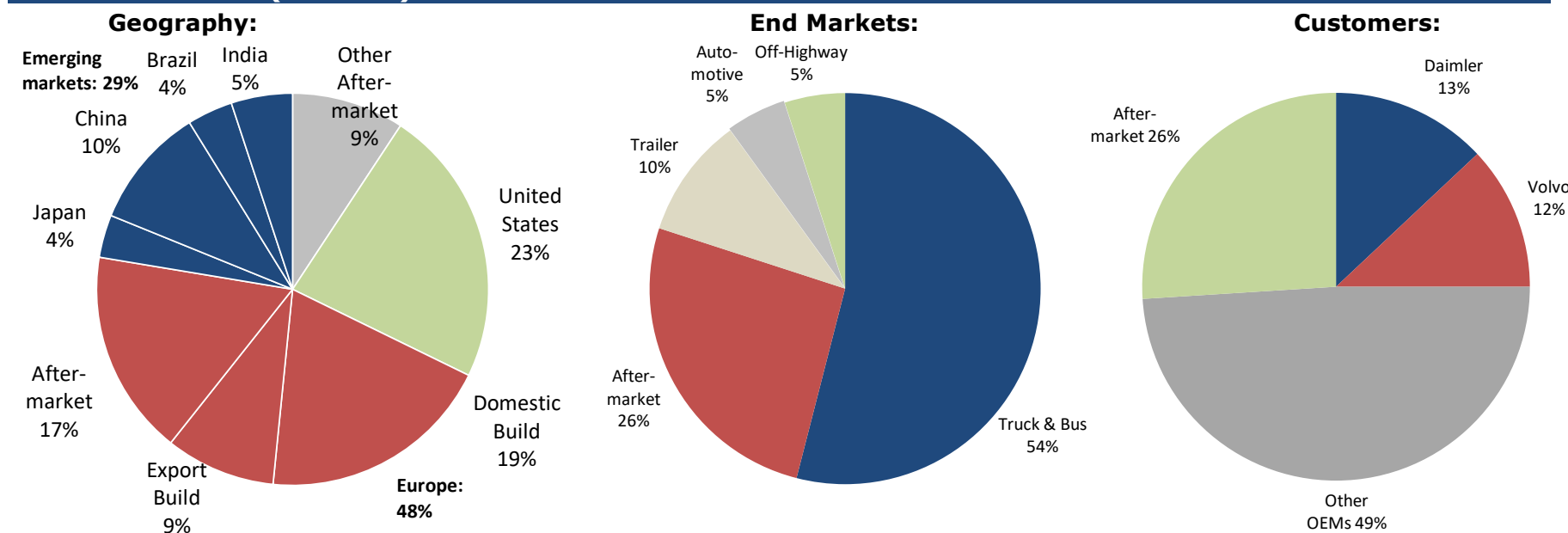
## Headwinds:

Weaker end-market demand in China, Turkey, and Russia; mix issues (China); currency translation.

## Investment Risks:

Cyclical end markets, commodity prices, FX, sustaining the recent high level of material/labor productivity, and ability to invest and win new business to sustain above-market growth.

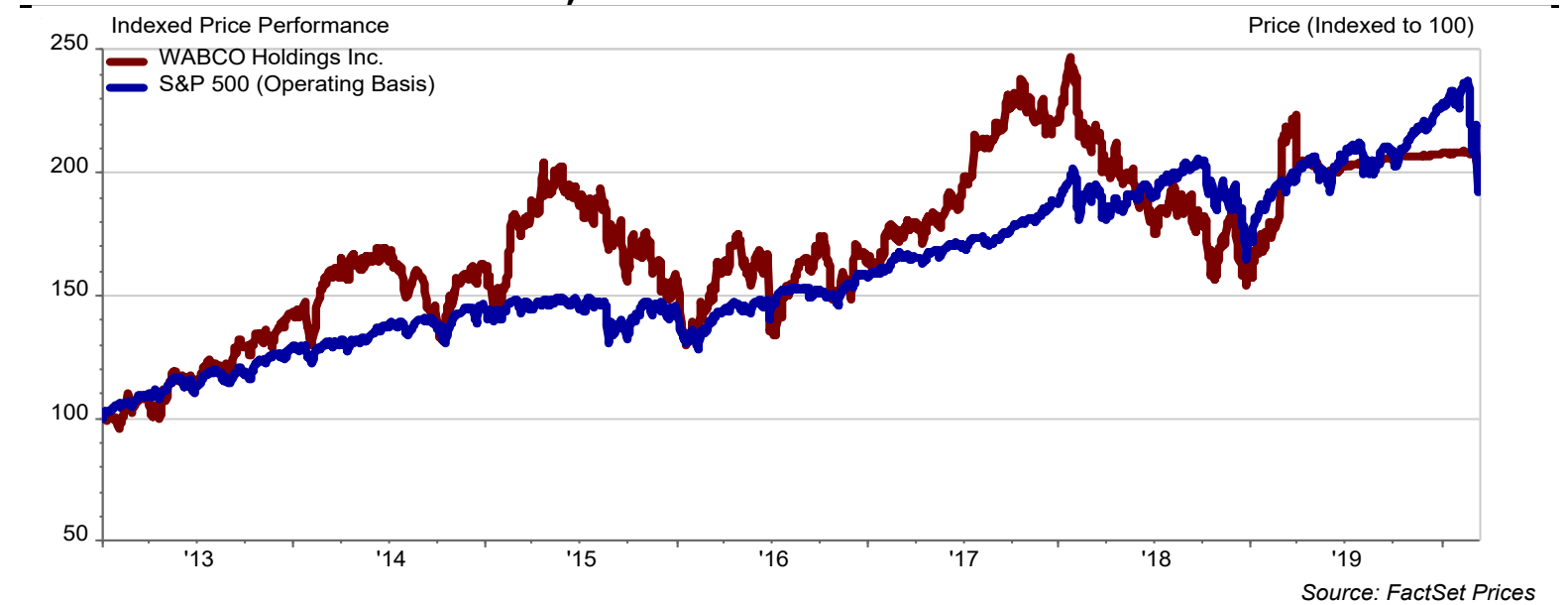
## Revenue Profile (FY2019):



## Financial Summary (December):

<b>\$ millions</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019E</b>	<b>2020E</b>
<b>Revenue</b>	2,810	3,304	3,831	3,452	3,329
% chg	7%	18%	16%	-10%	-4%
<b>Baird Revenue Est:</b>				3,887	4,085
<b>EBITDA</b>	491	554	654	541	518
% margin	17.5%	16.8%	17.1%	15.7%	15.5%
<b>EBIT</b>	389	486	546	426	407
% margin	13.9%	14.7%	14.2%	12.3%	12.2%
<b>EPS</b>	\$5.80	\$6.86	\$7.87	\$6.37	\$6.27
% chg	3%	18%	15%	-19%	-2%
<b>Baird EPS est:</b>	-	-	-	\$7.93	\$8.79
<b>P/E Multiple:</b>	-	-	-	20.50x	20.83x

## Stock Chart - from Dec 31, 2012



## Historical P/E - NTM



**Last-cycle median was 11.4x LTM EPS**

## Appendix – Important Disclosures and Analyst Certification

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**Risk Ratings:** **L - Lower Risk** – Higher-quality companies for investors seeking capital appreciation or income with an emphasis on safety. Company characteristics may include: stable earnings, conservative balance sheets, and an established history of revenue and earnings. **A - Average Risk** – Growth situations for investors seeking capital appreciation with an emphasis on safety. Company characteristics may include: moderate volatility, modest balance-sheet leverage, and stable patterns of revenue and earnings. **H - Higher Risk** – Higher-growth situations appropriate for investors seeking capital appreciation with the acceptance of risk. Company characteristics may include: higher balance-sheet leverage, dynamic business environments, and higher levels of earnings and price volatility. **S - Speculative Risk** – High growth situations appropriate only for investors willing to accept a high degree of volatility and risk. Company characteristics may include: unpredictable earnings, small capitalization, aggressive growth strategies, rapidly changing market dynamics, high leverage, extreme price volatility and unknown competitive challenges.

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www.rwbaird.com

800.RW.BAIRD

## Equity Capital Markets Office

### UNITED STATES

777 East Wisconsin Avenue  
Milwaukee, WI 53202  
+1-800-79-BAIRD  
rwbaird.com

### EUROPE

Finsbury Circus House  
15 Finsbury Circus  
London EC2M 7EB  
+44-207-488-1212  
bairdeurope.com

### ASIA

Rm 1201D, Building 2  
Century Metropolis  
No. 1239 Century Avenue  
Pudong, Shanghai 200122  
China  
+86-21-6182-0980  
bairdasia.com

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