Global Automotive Supplier Study 2020

COVID-19 crisis as a window of opportunity?

November 2020
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Executive Summary

> Automotive production volumes fell sharply in H1/2020 due to COVID-19, leading to unexpected revenue declines of up to >25 percent at suppliers in the first half of 2020 – China recovered relatively quickly from the COVID-19 shock but this could not compensate for the global volume losses

> Though the revenue decline caused an EBIT collapse throughout the industry, suppliers still generated positive EBIT margin of almost 2 percent on average during the first six months of 2020 – As a consequence, debt leverage levels rose to new highs, making access to debt and equity funding more difficult, especially for smaller suppliers

> The industry’s path towards a new mobility ecosystem is expected to remain intact, with governmental efforts further accelerating the shift towards electrification and connectivity – COVID-19 represents a window of opportunity for many suppliers to reposition themselves and emerge from the crisis as winners

> Analyzing the development of suppliers after the 2008/09 crisis, our 'Winners' framework shows that success is not primarily determined by product domain or region – A holistic strategy, comprising market leadership, financial strength and result-driven execution are the overarching success factors

> To be amongst the future winners, shaping a successful business model and safeguarding financial flexibility for the new decade, suppliers need to rethink, realign and potentially renew their business model

  - In traditional/shrinking areas, suppliers have to stringently deploy intelligent harvesting strategies and consider outphasing/exits more frequently than before
  - In future growth areas, suppliers have to find ways to fund investment requirements – Tight access to equity and debt capital requires alternative forms of funding, e.g. through partnership approaches, spin-offs or IPOs/SPACs
  - The traditional European supply base needs to close the gap on new technologies compared to North America and China while managing the required restructuring of their legacy businesses in parallel – know-how transformation of their workforce as a key lever
  - Japan-focused suppliers have to find a way out of their comfort zone within the Keiretsu structures and further open up for international OEMs
  - While technology-focused North American suppliers have to leverage their headstart in new technologies and digital business models, Chinese suppliers have to leverage their good positioning for electric mobility, and close gaps in other technologies

Source: Roland Berger/Lazard
A  The COVID-19 impact
COVID-19 hit the markets during an economic downturn and put suppliers under enormous pressure

B  The Winners framework
2008/09 shows that an economic crisis can be a strategic chance to set the course for successful, profitable growth

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The COVID-19 impact – Key takeaways

- Suppliers experienced a drastic and unexpected revenue decline of up to 25 percent or more in the first half of 2020 – Europe took the hardest hit; China recovered surprisingly fast.

- The revenue decline caused an EBIT collapse throughout the industry – immediate government emergency support programs helped to secure a slim, but still positive EBIT margin of almost 2 percent across the industry in the first six months.

- Process-focused suppliers were even more severely affected than their innovation-focused peers – scale economies-driven business models left little room to mitigate the impact of the market collapse.

- Adding to the financing requirements for the industry transformation, suppliers are facing a serious increase of debt levels from COVID-19 – Securing future funding from the equity as well as debt side will become more challenging, especially for smaller and mid-sized, weaker suppliers.

Source: Roland Berger/Lazard
Despite recent signs of recovery, many suppliers announce major restructuring programs to adapt to lower industry demand

Recent developments in the automotive industry H2/2020

**Automotive headlines**

- "Spanish car plants busy again as COVID-19 eases in Europe"  
  WardsAuto – 09/20

- "German truck maker to cut up to 9,500 jobs to become profitable"  
  Reuters – 09/20

- "U.S. auto sales pandemic recovery continues as Toyota decline slows"  
  ReutersNews – 08/20

- "Supplier says worst of crisis has passed, but outlook is uncertain"  
  Dow Jones Newswires – 11/20

- "Large supplier deepens cuts with 30,000 jobs at risk"  
  Automotive News Europe – 09/20

- "Germany's car industry struggles with transformation amid coronavirus crisis"  
  Deutsche Welle – 09/20

- "China car sales go from strength to strength as virus eases"  
  Auto Finance News – 11/20

- "New car sales rise in UK after coronavirus lockdown decline"  
  The Guardian – 08/20

- "Automakers, suppliers firm up relationships through crisis"  
  Plastic News – 09/20

- "French car sales continue to bounce back in August"  
  ReutersNews – 08/20

- "Rebound in China car sales accelerates with pandemic easing"  
  Bloomberg – 09/20

- "NEV firms to have more say in sector's future"  
  China Daily – 10/20

- "Supplier better than expected – Signs for recovery in the automotive industry"  
  Dow Jones Newswires – 08/20

- "Automotive production resurfaces after 15-month negative streak"  
  CE Noticias Financieras – 11/20

- "Car sales return to growth in July amid strong SUV demand"  
  Dow Jones Newswires – 08/20

- "Brazil's auto output up 73% in July from June"  
  ReutersNews – 08/20

- "UK sales fall 6% in August in setback to virus rebound"  
  Automotive News Europe – 08/20

- "ASEAN vehicle sales plunge 66% in Q2"  
  Just-Auto – 08/20

- "German car industry shows initial signs of recovery"  
  ReutersNews – 08/20

Source: Press releases, Roland Berger/Lazard
Volume growth within the automotive industry peaked in 2017/18 – such levels not expected to be surpassed before 2026.

Global light vehicle sales volume\(^1\) by region, 2014-2020 and outlook 2026 [m units]

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>19.5</td>
<td>20.7</td>
<td>21.1</td>
<td>20.8</td>
<td>20.7</td>
<td>20.3</td>
<td>16.0</td>
<td>19.8</td>
</tr>
<tr>
<td>Europe</td>
<td>14.7</td>
<td>16.1</td>
<td>17.2</td>
<td>17.8</td>
<td>17.9</td>
<td>18.1</td>
<td>13.8</td>
<td>16.8</td>
</tr>
<tr>
<td>China</td>
<td>23.6</td>
<td>24.9</td>
<td>28.0</td>
<td>28.4</td>
<td>27.5</td>
<td>25.3</td>
<td>22.3</td>
<td>29.4</td>
</tr>
<tr>
<td>South America</td>
<td>5.4</td>
<td>4.4</td>
<td>3.9</td>
<td>4.4</td>
<td>4.7</td>
<td>4.5</td>
<td>3.1</td>
<td>5.3</td>
</tr>
<tr>
<td>Japan/Korea</td>
<td>7.1</td>
<td>6.7</td>
<td>6.6</td>
<td>6.9</td>
<td>6.9</td>
<td>6.8</td>
<td>5.9</td>
<td>6.2</td>
</tr>
</tbody>
</table>

1) Incl. light commercial vehicles; 2) Excluding CIS and Turkey

\( xx\% = \text{CAGR} \)

Source: IHS LV Sales Report 09/2020, Roland Berger/Lazard
COVID-19 hit global automotive markets in 2020 with massive sales declines – China surprises with recovery compared to Q2/2019

Global light vehicle sales volume\(^1\) by region 2019/20 [m units]

- Despite a steep decrease in vehicle sales from Q4/2019 to Q1/2020, China quickly recovered from the COVID-19 shock – Volumes Q2/Q3 back at 2019 levels
- Vehicle sales in North America were continuously decreasing in H1/2020 – first recovery in Q3/2020
- Decline of sales volumes in Europe\(^2\) comparable to North America – Signs of (slow) recovery
- Japan and South America showed a weaker impact of the COVID-19 shock, but dealing anyway with a longer lasting downturn
- Potential further COVID-19 waves/lockdowns determine future market recovery

\(^1\) Incl. light commercial vehicles; \(^2\) Excluding CIS and Turkey

Source: IHS LV Sales Report 09/2020, Roland Berger/Lazard
Globally, suppliers are expected to face a sales slump between -15% to -20% in 2020 – Regional COVID-19 impact differs significantly

Key supplier performance indicators 2014-2020e (n=~600 suppliers)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>YoY [%]</td>
<td>8</td>
<td>8</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>-2</td>
<td>-15</td>
</tr>
</tbody>
</table>

ReRevenue development by region H1/18 – H1/20

Indexed [H1/18=100]

Europe's and North America's higher dependency on exports and global supply chains made the regions more vulnerable to COVID-19

China benefits from a stronger local market and an efficiently handled lockdown period

Source: Company information, Roland Berger/Lazard, Roland Berger/Lazard supplier database
COVID-19 brought supplier average margin performance to a new low

Key supplier performance indicators 2014-2020e (n=~600 suppliers)

EBITDA margin [%]

<table>
<thead>
<tr>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EBITDA</td>
<td>11.3</td>
<td>11.6</td>
<td>12.0</td>
<td>11.9</td>
<td>11.3</td>
<td>10.6</td>
<td>8.0</td>
<td>9.3</td>
</tr>
</tbody>
</table>

COVID-19

Note: 2020e based on assumed full-year revenue decline between -15% and -20%
1) H1/2020 EBIT partially manually adjusted and extrapolated for companies that don't communicate interim results

Source: Company information, Roland Berger/Lazard, Roland Berger/Lazard supplier database

EBIT margin [%]

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT</td>
<td>7.0</td>
<td>7.4</td>
<td>7.7</td>
<td>7.0</td>
<td>5.1</td>
<td>1.7</td>
<td>2.8</td>
<td>2.3</td>
</tr>
</tbody>
</table>

COVID-19
Financial performance of suppliers varied to a certain extent depending on region, size, product focus and business model.

Profitability trends in the global automotive supplier industry 2019 and H1/2020

<table>
<thead>
<tr>
<th>Region</th>
<th>Company size</th>
<th>Product focus</th>
<th>Business model</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 2019, China showed highest profitability, followed by North America amongst the major regions</td>
<td>In 2019, companies with revenues from EUR 0.5-1.0 bn were most profitable with an EBIT margin of 5.9%</td>
<td>In 2019, tires were by far most profitable with an EBIT margin of 8.8% followed by electronics/infotainment, chassis and exterior</td>
<td>In 2019, process specialists achieved a higher EBIT margin than product innovators for the first time</td>
</tr>
<tr>
<td>In H1/2020, China was still most profitable, supported by an efficiently handled lockdown period and a strong local market recovery</td>
<td>In H1/2020, slightly larger companies with revenues of EUR 1.0-2.5 bn came slightly better through the crisis</td>
<td>In H1/2020, Electrics and Infotainment companies were most resilient to the COVID-19 shock with an EBIT of 3.9%</td>
<td>In H1/2020, product innovators showed significantly higher resilience and higher margin stability than process specialists</td>
</tr>
<tr>
<td>In 2019, Europe and South Korea were least profitable</td>
<td>In 2019, companies with less than EUR 0.5 bn in revenues were least profitable with 3.7% EBIT margin</td>
<td>In 2019, interior was least profitable, indicating structural problems in the segment that were further accelerated by COVID-19</td>
<td>In 2019, process specialists' profitability suffered from higher R&amp;D expenses during the market slowdown</td>
</tr>
<tr>
<td>Despite a better performance in China, all regions were severely impacted by COVID-19 in H1/2020 with margins in Europe turning near zero</td>
<td>In H1/2020, large companies with revenues greater than EUR 10 bn were least profitable with only 1.2% EBIT margin, given higher restructuring costs and impairments</td>
<td>In H1/2020, interior suppliers were least profitable – Nevertheless, all domains were hit hard</td>
<td>In H1/2020, process specialist results collapsed down to an EBIT margin of just 1.2%</td>
</tr>
</tbody>
</table>

Source: Company information, Roland Berger/Lazard, Roland Berger/Lazard supplier database
With a relatively low COVID-19 impact on vehicle sales and a quick recovery, China-based suppliers suffered less.

Key supplier performance indicators by region 2019 and H1/2020 [%]

Revenue CAGR 2014-19
- China: ~13.2%
- North America: ~3.1%
- Europe: ~6.8%
- South Korea: ~3.0%
- Japan: ~1.0%

EBIT margin
- Industry average: 5.1%
- China: 6.9%
- North America: 6.6%
- Europe: 4.4%
- South Korea: 5.0%
- Japan: 4.3%

Note: H1/2020 EBIT values adjusted

> China-based suppliers defended their above-average margins; COVID-19 lockdown during the Chinese New Year and the comparably quick post-lockdown recovery led to significantly higher H1 results compared to other regions.

> North America-based suppliers suffered in H1/2020 due to their high dependency on global supply chains – A few relatively profitable suppliers kept the average result higher than in most other regions.

> Beside the general volume impact, Europe-based supplier margins are affected by a number of restructuring cases in addition to the COVID-19 crisis.

> Japanese and Korean suppliers remained profitable under COVID-19, as the market decline was lower compared to the other regions.

Source: Company information, Roland Berger/Lazard, Roland Berger/Lazard supplier database.
Suppliers are evenly hit by the COVID-19 shock with larger restructuring cases amongst medium and very large suppliers

Key supplier performance indicators by company size¹) 2019 and H1/2020 [%]

<table>
<thead>
<tr>
<th>Company size</th>
<th>EBIT margin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Industry average</td>
</tr>
<tr>
<td>Small suppliers (EUR 0.5 bn to 1.0 bn)</td>
<td>benefit from flexibility in their cost structures and lean overhead</td>
</tr>
<tr>
<td>Large multinational suppliers (above EUR 10 bn revenues)</td>
<td>are affected by a number of larger restructuring cases (partly due to structural issues independent of COVID-19), causing in combination with COVID-19 the largest decrease in EBIT compared to 2019</td>
</tr>
<tr>
<td>As an additional crisis impact, the profit of a large number of suppliers is affected by impairments (non-cash effective though) as a result of the collapse in demand, an effect which is visible especially with medium and large multinational suppliers</td>
<td></td>
</tr>
</tbody>
</table>

¹) Size based on EUR bn of sales

Source: Company information, Roland Berger/Lazard, Roland Berger/Lazard supplier database
Margins across all product categories deteriorated – Tire suppliers witnessed the largest drop due to aftermarket exposure

Key supplier performance indicators by product focus 2019 [%]

<table>
<thead>
<tr>
<th>Product Focus</th>
<th>Revenue CAGR 2014-19</th>
<th>EBIT margin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>~0.6%</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>~3.6%</td>
<td>5.3</td>
</tr>
<tr>
<td></td>
<td>~5.3%</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>~7.2%</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>~6.6%</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>~0.8%</td>
<td>4.1</td>
</tr>
</tbody>
</table>

- **Tire suppliers** suffered from *lower aftermarket demand* during the COVID-19 lockdowns
- **COVID-19** has *accelerated structural problems* of some *chassis* suppliers driven by the ongoing *product commoditization*
- **Interior suppliers** also show a strong negative impact from COVID-19, *mostly originating from Europe*, with margins turning negative

Note: H1/2020 EBIT values adjusted

Source: Company information, Roland Berger/Lazard, Roland Berger/Lazard supplier database
In 2019, for the first time process specialists could realize higher margins than product innovators – Picture changed again 2020

Key supplier performance indicators by business model 2019 [%]

<table>
<thead>
<tr>
<th>Revenue CAGR 2014-19</th>
<th>~5.9%</th>
<th>~3.7%</th>
</tr>
</thead>
</table>

- **EBIT margin**
  - **Industry average**: 5.1
  - **Product innovator**: 2.3
  - **Process specialist**: 1.2

- **Note**: Analysis excludes tire suppliers.

> While historically product innovator margins exceeded those of process specialists, in 2019 process specialists achieved higher margins for the first time.

> As the overall market slows down, high investments are affecting the bottom line of product innovators – Product innovators have on average invested roughly three times as much in R&D compared to process specialists in the past decade.

> However, H1/2020 has shown that the missing scale in a drastic market downturn affects process specialists more than product innovators, as the specialist model requires the leverage of high volumes to utilize capacities.

> In addition, the majority of large restructuring cases in H1/2020 affects process specialists.
Across the past five years, top performing companies could further increase their profitability lead.

Key performance indicators of top vs. low-performing suppliers¹)

> **Product innovators** historically outperformed process specialists in terms of average profitability – However, the gap was almost closed in the past years.

> **Top process specialist growth** was partly accelerated by M&A activities of several players in the past.

> Large difference in growth rates as well as profitability between top and low-performing process specialists indicate the relevance of economies of scale.

> **Process specialists** focused on the segments with higher competitive pressure, thus, facing low margins.

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Source: Company information, Roland Berger/Lazard, Roland Berger/Lazard supplier database
The automotive sector has lost ground versus other industries, making access to capital more challenging and costly.

Overview of market dynamics

Market Cap (index 100)

**Since Nov-17**

<table>
<thead>
<tr>
<th>MSCI World</th>
<th>Automotive Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.3%</td>
<td>(35.8%)</td>
</tr>
</tbody>
</table>

**Overview of market dynamics**

EV / EBITDA NTM

1) NTM = Next twelve months; 2) Selection: American Axle, Autoliv, BorgWarner, Brembo, Continental, Dana, Denso, Faurecia, Gentex, Hella, Leoni, Magna, Schaeffler, Tenneco, Valeo and Visteon

Source: Company information, Roland Berger/Lazard, FactSet, Bloomberg
COVID-19 has caused rating agencies to downgrade many suppliers, making access to debt capital more expensive

Impact on ratings of automotive suppliers¹)

<table>
<thead>
<tr>
<th>Investment grade</th>
<th>End of 2019</th>
<th>Today</th>
<th>Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AA</td>
<td>2</td>
<td>0</td>
<td>-2</td>
</tr>
<tr>
<td>A</td>
<td>5</td>
<td>7</td>
<td>+2</td>
</tr>
<tr>
<td>BBB</td>
<td>6</td>
<td>3</td>
<td>-3</td>
</tr>
<tr>
<td>BB</td>
<td>7</td>
<td>6</td>
<td>-1</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>4</td>
<td>+3</td>
</tr>
<tr>
<td>CCC-D</td>
<td>0</td>
<td>1</td>
<td>+1</td>
</tr>
</tbody>
</table>

# of total downgrades: 9 (out of 21)

> From a refinancing perspective, automotive suppliers suffer in comparison to other industries as equity stories become less attractive for external investors

> Ratings of automotive suppliers are starting to be impacted, reflecting below-average development of market capitalization, increasing debt leverages and declining margin levels

> This development is critical for automotive suppliers, as capital requirements in the future to finance MADE changes and deal with socioeconomic trends like deglobalizing supply chains remain high

¹) Ratings based on Standard & Poor’s for the following set of suppliers: AAM, Aisin, Autoliv, BorgWarner, Bosch, Bridgestone, Continental, Cummins, Dana, Denso, Faurecia, Garrett Motion, Gestamp, Goodyear, Grupo Antolin, Magna, Michelin, Schaeffler, Tenneco, Valeo, ZF

Source: Company information, Roland Berger/Lazard, S&P Market Intelligence
Net debt levels and leverage ratios have substantially increased, making future funding capabilities a priority for all suppliers.

Leverage\(^1\) of suppliers by company size (EUR bn sales) H1/2020 [%]

1) Net debt in relation to EBITDA; 2) Based on H1/2020 net debt excluding pensions and FY 2020 EBITDA forecast

> Increasing net debt ratios are driven by declining business volumes since 2018 and upfront investments required for the industry transformation.

> Also, substantial increase in 2020 was driven by collapsing EBITDA levels.

> The leverage in the whole supplier industry has reached an unhealthy level, even if stronger markets and some normalization of working capital levels may partially resolve the problem in the future.

> Many small suppliers with revenues below EUR 0.5 bn face high debt levels, however, COVID-19 induced increases are in line with the market when compared to the starting base.

Source: Company information, Roland Berger/Lazard, Roland Berger/Lazard supplier database, FactSet
Necessary consolidation of the industry has slowed down substantially for numerous reasons

Overview of supplier M&A activity

# of automotive supplier M&A transactions

<table>
<thead>
<tr>
<th>Year</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>252</td>
</tr>
<tr>
<td>2016</td>
<td>232</td>
</tr>
<tr>
<td>2017</td>
<td>183</td>
</tr>
<tr>
<td>2018</td>
<td>178</td>
</tr>
<tr>
<td>2019</td>
<td>136</td>
</tr>
</tbody>
</table>

The decline in M&A transactions could continue in 2020 as COVID-19 negatively impacts M&A appetite

2015–2019: ~ (46%)

Involved "stakeholders"

1. **Buyers**
   - A: Strategic
   - B: Financial

2. **Target companies**

3. **Shareholders**

4. **OEM**

5. **Trade unions**

6. **Politics**

1. **A**: Shying away from debt-financed takeovers, which would increase their own debt ratio. Industry transformation requires high investments in future technologies.

2. **B**: Steering clear of cyclicity, below average margins and cash-flow profiles, negative medium/long-term outlook, market power of customers and are concerned that no adequate “exit” after 3-5 years will be possible.

3. **Shareholders** have no incentive to sell due to presumably unattractive offers.

4. **OEMs** with high market power, impacting suppliers' margins and cash flow profiles, discouraging financial investors.

5. **Trade unions/works councils** not in favor of measures implying substantial cost synergies through the reduction of personnel.

6. **Antitrust** law prevents takeovers by strategic buyers if competition is restricted.

Note: Transactions considered: announced/completed, >75% stake, automotive suppliers, worldwide

Source: Roland Berger/Lazard
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The Winners framework – Key takeaways

While the last global crisis in 2008/2009 marked the starting point of a long period of profitable growth for the supplier industry overall, some companies capitalized on it far more than others.

Despite conventional wisdom, a certain product or regional focus neither a guarantee of success nor a shortcoming for suppliers.

Successful suppliers differentiate from their peers through four clear patterns – business leadership, strategic coherence, financial position and the ability to execute.

By succeeding at those patterns, the winners among the supplier universe grew 5x times faster and generated almost 3x times higher shareholder returns over the past decade than the average of the industry.

Source: Roland Berger/Lazard
2008/09 was a historic crisis for the automotive industry, but markets recovered quickly into one of the most successful periods of growth

Recap of the automotive crisis 2008/2009

"Motor City: From Motown to no-hope town" – Independent – 11/08

"Worst Crisis since World War II: German Auto Industry Facing the Abyss" – Spiegel Online – 11/08

"Auto industry in crisis" – Reuters – 05/09

"Financial Aid for Ailing Firms: List of German Companies Needing Help Grows Longer" – Spiegel Online – 04/09

Challenges in the last crisis

> **Strong volume decline** in all regions except China in short period of time – Strongest hit were **North America and Europe**

> **Banking crisis** led to liquidity shortage from banking institutions – **OEMs and suppliers** most hit by the declining markets experienced severe cash shortages

> **OEMs and suppliers** were required to act fast and **adjust their cost structures** – Restructuring was the focus of the years following the crash

Path to recovery

> **Full recovery** of the global light vehicle volumes achieved already one year later in 2010

> Average growth between 2009-2017 of 5.0% p.a. followed the crash – One of the most successful periods in automotive history, first of all driven by the Chinese market

> **Europe and North America itself had a longer recovery period** but Western suppliers often benefitted from the success of their key OEM clients in the Chinese market

Source: Press releases, IHS LV Sales Report, Roland Berger/Lazard
In contrast to 2008/09, the impact of the COVID-19 crisis on the markets and the speed of recovery is expected to be different

Stock indices\(^1\) and impact of the crisis

- Financial crisis as starting point, spillover on real economy
- Trust based crisis with widespread fear of bank insolvencies and money shortages
- Trust came back relatively fast through large-scale rescue packages and economic recovery
- Loss of reputation of banking institutions and finance industry employees but meltdown of financial system avoided
- Structural growth post crisis not questioned

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\(^1\) S&P500 as proxy for North America, Euro Stoxx 50 for Europe, Nikkei for Japan, CSI 300 for China; Weekly closing prices taken from Bloomberg as of Sept. 16, 2020, indexed at 100 on 07/2002

Source: CapIQ, Roland Berger/Lazard
We have analyzed automotive suppliers with respect to their past financial and shareholder value performance to find "best practices".

Winners methodology – Financial performance assessment

**Input parameters**

- Financial data from >300 suppliers across all major automotive regions from 2009-2019
- As analysis-KPIs, *Invested Capital* (1), *Return on invested capital* (ROIC (2)) and *Weighted cost of capital* (WACC (3)) for each supplier have been used
- The combination of the KPIs allows to tie strategic decisions (Invested Capital (1)) to the financial and shareholder value performance (ROIC (2)/WACC (3)) of the suppliers over the last 10 years
- To understand product related correlations, all suppliers have been labeled with their main product segment (Tires, Chassis, Powertrain, Exterior, Electronics/Infotainment, Interior)

**Analysis scheme**

<table>
<thead>
<tr>
<th>Suppliers</th>
<th>Growth</th>
<th>Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profitless growers</strong></td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Suppliers which invested consistently in the last years but couldn't translate that into above average margins</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Winners</strong></td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Suppliers which translate above average investments consistently into above average margins and return for their shareholders</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Underperformers</strong></td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Suppliers with consistent financial performance problems and thus also limited investment capabilities to transform their businesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cash generators</strong></td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Suppliers which maximize the profits out of their current business models with very selective investments in the last years</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Growth of invested capital [%]**

**ROIC – WACC as economic profit [%]**

1) Invested capital = total debt + total equity  
2) ROIC = Net operating profit after tax / invested capital  
3) Weighted average cost of equity and after-tax cost of debt  
4) Growth = CAGR of Invested Capital; Profit = ROIC – WACC (economic profit)

Source: CapIQ, Roland Berger/Lazard
There are winners from all product domains and regions represented – Only Japanese suppliers show a weaker performance in general

Financial performance matrix [2009–2019]

Clustered by region

Clustered by product segment

Economic profit (ROIC – WACC) [%]

Invested Capital (CAGR) [%]

Profitless growers

Winners

Cash generators

Underperformers

Note: TIR = Tires   E/I = Electronics/Infotainment   PWT = Powertrain   INT = Interior   CHA = Chassis   EXT = Exterior   Ø = Sample average (X-axis/Y-axis)

Source: CapIQ, Roland Berger/Lazard
Chinese and North American suppliers outperformed their peers but winners or cash-generators can come from all regions and domains.

Financial performance per region and segment [2009–2019]

<table>
<thead>
<tr>
<th>Region</th>
<th>Winners</th>
<th>Cash generators</th>
<th>Profitless growers</th>
<th>Underperformers</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>45%</td>
<td>26%</td>
<td>23%</td>
<td>6%</td>
</tr>
<tr>
<td>CN</td>
<td>42%</td>
<td>48%</td>
<td>48%</td>
<td>3%</td>
</tr>
<tr>
<td>EU</td>
<td>36%</td>
<td>31%</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>JP/KR</td>
<td>18%</td>
<td>15%</td>
<td>53%</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Segment</th>
<th>Winners</th>
<th>Cash generators</th>
<th>Profitless growers</th>
<th>Underperformers</th>
</tr>
</thead>
<tbody>
<tr>
<td>E/I</td>
<td>41%</td>
<td>30%</td>
<td>11%</td>
<td>19%</td>
</tr>
<tr>
<td>TIR</td>
<td>35%</td>
<td>35%</td>
<td>13%</td>
<td>17%</td>
</tr>
<tr>
<td>PWT</td>
<td>34%</td>
<td>21%</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>EXT</td>
<td>32%</td>
<td>18%</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>CHA</td>
<td>24%</td>
<td>20%</td>
<td>33%</td>
<td>24%</td>
</tr>
<tr>
<td>INT</td>
<td>21%</td>
<td>24%</td>
<td>45%</td>
<td>36%</td>
</tr>
</tbody>
</table>

Note: TIR = Tires   E/I = Electronics/Infotainment   PWT = Powertrain   INT = Interior   CHA = Chassis   EXT = Exterior

Source: CapIQ, Roland Berger/Lazard
Overall, we have identified four general strategic characteristics that Winners have in common

### Shared characteristics of Winners

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Leadership</strong></td>
<td><strong>Strategic Coherence</strong></td>
<td><strong>Size and financial position</strong></td>
<td><strong>Proven ability to execute</strong></td>
</tr>
<tr>
<td>Can your businesses set the agenda in their areas of market participation?</td>
<td>Do you have a consistent strategic rationale across your portfolio?</td>
<td>Are you relevant in the marketplace in terms of size, financial success or technology with the ability to efficiently attract capital?</td>
<td>Can you deliver results on a sustainable basis?</td>
</tr>
<tr>
<td>Technology leadership Know-how leadership</td>
<td>Similar requirements Similar value proposition</td>
<td>Trusted capital market partner Convincing equity story</td>
<td>Short reaction times Performance-driven culture</td>
</tr>
</tbody>
</table>

Source: CapIQ, Roland Berger/Lazard
A leading market position per product leads to higher total shareholder return and capital growth, indicating business leadership.

Performance based on revenue per product group [exemplary suppliers]

<table>
<thead>
<tr>
<th>Winners</th>
<th>Underperformers</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1%</td>
<td>15.7%</td>
</tr>
<tr>
<td>10.6%</td>
<td>4.8%</td>
</tr>
<tr>
<td>91%</td>
<td>49%</td>
</tr>
<tr>
<td>83%</td>
<td>51%</td>
</tr>
<tr>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Chinese, globally diversified supplier</td>
<td>Realized mean ROIC</td>
</tr>
<tr>
<td>US-based, globally category focused</td>
<td>100%</td>
</tr>
<tr>
<td>EU-based, globally category focused</td>
<td>83%</td>
</tr>
<tr>
<td>US-based, globally diversified supplier</td>
<td>4.8%</td>
</tr>
<tr>
<td>Japanese supplier, category focused</td>
<td>49%</td>
</tr>
<tr>
<td>EU-based, globally diversified supplier</td>
<td>60%</td>
</tr>
</tbody>
</table>

- The Winners framework shows a correlation between the market position of business divisions/companies and their financial and shareholder value performance – **Winners have consistently leading market positions**.
- When in a **leading position** or when having a high **revenue consolidation** on certain products, suppliers were able to achieve a **higher total shareholder return** over the past years and achieved **higher capital growth**.
- **Suppliers from Japan** are struggling to translate their technical capabilities into a **leading market positioning** due to the local Keiretsu structures, lack of truly global organizations and customer access.

Source: CapIQ, Roland Berger/Lazard
 Winners show a higher strategic coherence, which correlates closely with management tenure

Strategic coherence

**Portfolio synergies**
Ability of a company to leverage synergies among products in its portfolio

**Active portfolio management**
Number of M&A transactions (investments and divestments) related to the market capitalization

**R&D intensity**
Average R&D expenses in relation to total sales over the past five years

**Management tenure**
Average tenure of the current CEO and CFO of a company in the selected sample

**Client and market concentration**
Exposure to single markets or customers – Share of the largest customers

> We evaluated strategic coherence along five specific criteria reflecting the mid- to long-term of a company’s agenda

> A higher M&A activity indicates a more actively engaged portfolio management

> Winners invest consistently more in R&D, indicating the ambition to retain a leading technological position

> Our analysis shows that a stable management team correlates with a high strategic coherence

> The only criteria without a major difference between Winners and Underperformers is client and market concentration, with high dependency on product portfolio and business model

> Considering the combined impact of the analyzed criteria, Winners display a higher strategic coherence than Underperformers

Source: Roland Berger/Lazard
With increasing size, suppliers demonstrate an ability to leverage their balance sheet and scale to achieve higher shareholder returns.

**Distribution of suppliers by market capitalization**

**Winners and Cash generators**

- **Micro-cap**: 41%
- **Small-cap**: 49%
- **Mid-/Large-cap**: 73%

**Profitless growers and Underperformers**

- **Micro-cap**: 59%
- **Small-cap**: 51%
- **Mid-/Large-cap**: 27%

> Historically (1.5x – 2.4x), as well as during the COVID-19 crisis (3.2x – 3.5x), the net debt leverage of large- and Mid-cap suppliers is lower than in smaller companies, especially than in Micro-Caps where the leverage is currently 4.6x as per H1/2020.

> Also, Large- and Mid-cap suppliers very often have a lower WACC and thus a lower financing risk for investors.

> Both aspects are leading to better access to capital and better financing conditions for these companies.

> In consequence, suppliers with large market capitalization can translate their system relevance into higher investor returns and realize more opportunities for future growth.

1) Based on 2010 total capitalization: Public firms = (Market value of equity) + (Market value of debt); Private firms = (Book value of equity) + (Debt).

Source: CapIQ, Roland Berger/Lazard.
Winners demonstrate their 'ability to execute' by consistently overperforming on investor expectations

Performance analysis 2009-2019

**Median average difference between actual earnings and consensus estimate**

- **Winners**: +1.2%
- **Cash generators**: +1.3%
- **Profitless growers**: -1.3%
- **Under-performers**: -12.9%

> Winners and Cash-generators consistently beating investors expectations in terms of profitability
> Companies are seeing this manifested in the ability to better focus their available capital into growth opportunities or performance improvement measures
> If necessary, winners and cash-generators have the courage to course-correct and participate in the new technologies
> Investment decisions, e.g. M&A measures, follow a clear strategic intent to take the company into a predefined direction
> By doing that, they secure business leadership and keep their strategic coherence, making them successful on a sustainable basis

1) Defined as percentage difference between actual earnings per share and consensus broker estimate prior to earnings announcement

Source: CapIQ, Roland Berger/Lazard
Despite different company settings, certain patterns emerge of what Winners do differently than the average automotive supplier.

Strategic options for automotive suppliers – Summary

1. **Business leadership**
   - Positioning as a critical system supplier with opportunity to differentiate
   - Business model with know-how/service driven elements
   - Striving for leading market positions per product
   - Thought leadership for new products

2. **Strategic coherence**
   - Focus on consistent growth
   - Strong focus on R&D and product innovations
   - Limiting dependency on few clients or market segments
   - Recognizable synergies across the portfolio
   - Stable and experienced management team
   - Active portfolio management with comparably high number of M&A transactions
   - Divestments as a common instrument to adjust the portfolio

3. **Size and financial position**
   - Sound capital structure
   - Above average financial performance
   - Global presence, to participate in local growth opportunities

4. **Proven ability to execute**
   - Clear communication and execution of strategic intent
   - Focus on efficient deployment of resources
   - Disciplined capital allocation

Source: Roland Berger/Lazard
A  The COVID-19 impact
COVID-19 hit the markets during an economic downturn and put suppliers under enormous pressure

B  The Winners framework
2008/09 shows that an economic crisis can be a strategic chance to set the course for successful, profitable growth

C  The next economic cycle
Lower vehicle sales in parallel with technological disruption will be the challenge for suppliers in the coming years

D  The way forward
Opportunities for suppliers to course-correct strategies and ensure a sustainable future business model

E  The contacts
Roland Berger and Lazard Automotive teams
The next economic cycle – Key takeaways

- The speed of the auto industry's volume recovery remains highly uncertain – but it might take until 2025 to reach pre-crisis volumes again.

- China provides the most attractive market environment for suppliers going forward – driven by both growth prospects and favorable conditions along all MADE dimensions.

- On top of MADE, socio-economic megatrends around sustainability, social justice and deglobalization will impose an additional layer of complexity onto supplier's business.

- The industry's target picture of a mobility ecosystem remains largely intact even in light of COVID-19 – but it will likely take longer and yield more technological and commercial challenges than ever before.

Source: Roland Berger/Lazard
COVID-19 comes on top of radical changes in managing financing and business model transformation

Global light vehicle sales, 2015-2025 [m vehicles]

Looking back

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>88.3</td>
<td>92.2</td>
<td>94.3</td>
<td>93.7</td>
<td>89.7</td>
</tr>
</tbody>
</table>

Chinese market represents primary driver for growth
Upcoming MADE trends required significant upfront investments, and enabled first new business models (e.g. ride-hailing)
Stagnation of global growth and deteriorating supplier margins
Increasing regulations for emission reduction
US trade wars with China and the European Union

Looking forward

2020
2021

COVID-19

2022
2023
2024
2025

Purpose-built, automated, modular, connected vehicles become part of a "System of Systems" - exact timing unclear
MADE trends with significant impact on all aspects of the market
Socio-economic trends of post fossil civilization, social justice, further de-globalization and volatility
China remains the number one driver for growth

Source: IHS, OECD, Roland Berger/Lazard
Looking back, the MADE\textsuperscript{1)} trends dominated supplier agendas and impacted almost all aspects of the automotive industry.

Automotive supplier CEO radar screen, 2019 perspective

Source: Roland Berger/Lazard

\textsuperscript{1)} Mobility.\textsuperscript{a} Autonomous.\textsuperscript{d} Digitalization.\textsuperscript{e} Electrification. \textsuperscript{\small \textcircled{COVID-19}} Affected by COVID-19.
Suppliers have to deal with different local environments and market dynamics in order to set the base for a successful future business.

Differentiating factors and prerequisites across regions

<table>
<thead>
<tr>
<th>Prerequisites influencing suppliers</th>
<th>China</th>
<th>N. America</th>
<th>Europe</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery speed</td>
<td>--</td>
<td>0</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>How fast are regions expected to recover from COVID-19 on short-term basis and general government crisis support?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales volumes</td>
<td>--</td>
<td>0</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>How are mid- to long-term light vehicles sales volumes expected to develop? Which growth for business offers the region?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government agenda</td>
<td>--</td>
<td>0</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>How do governmental agendas and legal frameworks differ for local suppliers and thereby influence their businesses?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current supplier state</td>
<td>--</td>
<td>0</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>How is the current financial health state of local supplier base and how are companies positioned for future competition?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to capital</td>
<td>--</td>
<td>0</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>How easy is the access to capital across regions to finance growth for the local suppliers?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MADE implications</td>
<td>--</td>
<td>0</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>How do the MADE trends influence the local markets and how favorable is that for local suppliers?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Impact on supplier business: (strongly) negative, no impact, (strongly) positive

Source: Roland Berger/Lazard
Government reaction to the crisis differs significantly across regions – China with fastest recovery overall

Government support and recovery speed

Types of crisis support

Specific measures [non-exhaustive]

> Considering subsidies to encourage hydrogen roadmap
> xEV subsidies and tax exemption extended by 2 years to 2022
> Gasoline-electric hybrids reclassified as more efficient than gasoline and diesel to help OEMs meet quotas
> Radical lockdowns of cities/areas to keep local COVID-19 outbreaks under control

China

N. America

Europe

Japan

LV sales recovery [# m]

Overall impact on supplier business

Financial aid for businesses
Financial aid for individuals
Short-time work
Tax cuts
Purchase incentives
Pre-COVID sales forecast

Source: IHS, Roland Berger/Lazard
The next growth period is expected to be driven by China while North American and EU sales growth is expected to stagnate.

Global light vehicle sales volume\(^1\) by region

> China’s sales growth are expected to continue beyond the recovery of the COVID-19 shock
> North American and EU light vehicle sales growth is expected to stagnate after the recovery from the COVID-19 shock
> Light vehicle sales in Japan are expected to slightly decrease until 2026
> Comparing to the period after the financial crisis 2008/09, sales growth in Europe, North America and Japan is expected to be significantly lower

Overall impact on supplier business

1) Incl. light commercial vehicles  2) Greater China  3) Excluding CIS and Turkey
The Western market regulatory framework makes business easier for suppliers – But US tariffs are a 'Sword of Damocles'

Government policies

**Assessment criteria**

**Grants and subsidies**
General financial support for companies

**Free trade agreements**
Range of international agreements to ease trade

**Business taxation**
Regional company tax rates

**Tariffs**
Duties for import business

**Market regulation overall**
Regional legal frameworks, e.g. for money transfer or business relationships

**Labor laws**
Labor friendliness of regulations, e.g. for downsizing

**Framework for restructuring**
Regional regulations for processing of insolvencies and deleveraging

**Benefit for local supply base**

<table>
<thead>
<tr>
<th>Country</th>
<th>Favorable</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>++</td>
<td>--</td>
</tr>
<tr>
<td>US</td>
<td>+</td>
<td>--</td>
</tr>
<tr>
<td>Europe</td>
<td>++</td>
<td>--</td>
</tr>
<tr>
<td>Japan</td>
<td>+</td>
<td>--</td>
</tr>
</tbody>
</table>

**Overall impact on local supplier business**

<table>
<thead>
<tr>
<th>Country</th>
<th>Favorable</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>++</td>
<td>--</td>
</tr>
<tr>
<td>US</td>
<td>+</td>
<td>--</td>
</tr>
<tr>
<td>Europe</td>
<td>++</td>
<td>--</td>
</tr>
<tr>
<td>Japan</td>
<td>+</td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Roland Berger/Lazard
Chinese suppliers are best positioned to profit from future tech while Japanese lag in both strategic position and commercial viability.

**Commercial viability and strategic positioning of suppliers**

- **Smaller, traditional Japanese** suppliers with low commercial viability due to high average WACC and low ROIC – Except today’s Japanese global players, companies are reliant on their local client base due to Keiretsu system.

- **Chinese** suppliers are generally stronger in electrification technology (political push) and in combination with above average margins well positioned for the future challenges.

- **North America** benefits from strong market participants in ADAS, AI and software (established companies as well as start-ups) as well as a technology friendly legislation in selected states – Traditional players on the weaker side but effect compensated by the headstart of technology players.

- **European** suppliers, except the large multinational players, are often traditional suppliers with fewer strengths in new growth segments – In addition, difficulties to find a standardized technology framework across Europe.

---

**Overall impact on local supplier business**

- **Chinese**:
  - **Weak**: -- -- 0
  - **Excellent**: ++

- **North America**:
  - **Weak**: -- -- 0
  - **Excellent**: ++

- **European**:
  - **Weak**: -- -- 0
  - **Excellent**: ++

- **Japanese**:
  - **Weak**: -- -- 0
  - **Excellent**: ++

Source: Roland Berger/Lazard
North America has highest capital availability – Historically highest share of invest in EU suppliers, but trend is towards China and US

Investments into the automotive industry

M&A capital\(^1\)...

... originating from

<table>
<thead>
<tr>
<th>Region</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAFTA</td>
<td>37%</td>
</tr>
<tr>
<td>EU</td>
<td>26%</td>
</tr>
<tr>
<td>Japan</td>
<td>14%</td>
</tr>
<tr>
<td>China</td>
<td>19%</td>
</tr>
<tr>
<td>RoW</td>
<td>4%</td>
</tr>
</tbody>
</table>

... invested in region

<table>
<thead>
<tr>
<th>Region</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAFTA</td>
<td>38%</td>
</tr>
<tr>
<td>EU</td>
<td>39%</td>
</tr>
<tr>
<td>Japan</td>
<td>16%</td>
</tr>
<tr>
<td>China</td>
<td>7%</td>
</tr>
</tbody>
</table>

Venture capital funding\(^2\)...

... originating from

<table>
<thead>
<tr>
<th>Region</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAFTA</td>
<td>37%</td>
</tr>
<tr>
<td>EU</td>
<td>30%</td>
</tr>
<tr>
<td>Japan</td>
<td>18%</td>
</tr>
<tr>
<td>China</td>
<td>13%</td>
</tr>
<tr>
<td>RoW</td>
<td>1%</td>
</tr>
</tbody>
</table>

... invested in region

<table>
<thead>
<tr>
<th>Region</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAFTA</td>
<td>34%</td>
</tr>
<tr>
<td>EU</td>
<td>39%</td>
</tr>
<tr>
<td>Japan</td>
<td>14%</td>
</tr>
<tr>
<td>China</td>
<td>45%</td>
</tr>
</tbody>
</table>

> Almost 40\% of capital invested in disclosed M&A deals between 2017 and 2020 came from North American region

> Weaknesses of the Japanese supply base become obvious as Japanese investors seek primarily assets outside Japan

> Overall access to capital has become more challenging

> Foreign control hurdles impacting Chinese investments

> Perceived attractiveness of sector diminished

Overall impact on supplier business

1) Based on disclosed deal value Private Placement or Merger/Acquisition in the automotive supplier industry from 2017-2020

2) Estimated numbers based on disclosed Venture Capital investments from 2017-2020

Source: CapIQ, TRACXN, Roland Berger/Lazard
From a MADE perspective, prerequisites for suppliers to monetize product offerings in the mid-term are the best in the Chinese market.

Regional impact\(^1\) of future technologies

<table>
<thead>
<tr>
<th>MADE categories</th>
<th>Regional technology interest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mobility</strong></td>
<td>Unfavorable</td>
</tr>
<tr>
<td><strong>Autonomous</strong></td>
<td>Unfavorable</td>
</tr>
<tr>
<td><strong>Digitalization</strong></td>
<td>Unfavorable</td>
</tr>
<tr>
<td><strong>Electrification</strong></td>
<td>Unfavorable</td>
</tr>
</tbody>
</table>

\(^1\) Qualitative assessment

> **Ride-hailing** firms scale up, however, currently **negative effect of COVID-19** on consumer acceptance of shared mobility.

> **Autonomous mobility gains importance** and COVID-19 further accelerates relevance of autonomy for mobility concepts.

> **Digitalization** and connectivity become more common, with digital business models gaining importance as vehicle sales slump.

> **OEMs and suppliers are heavily investing** in electric mobility as a future market, supported by some COVID-19 government subsidies explicitly for EV's.

Overall impact on local supplier business

Source: IHS, Roland Berger/Lazard, ADR #7
Apart from the coronavirus pandemic, four socio-economic mega-trends have evolved that strongly impact the automotive industry.

### Socio-economic megatrends shaping this decade

#### Post fossil civilization
- **Aug ‘18** – Greta Thunberg starts ‘Fridays for Future’ movement – Growing into the largest environmental protest across 185 countries in Sep ‘19
- **Dec ‘19** – ‘European Green Deal’ presented with an est. EUR 260 bn of investments needed until 2030
- **Jan ‘20** – BlackRock announces it will focus investments on sustainability as the world’s largest asset manager with USD 6.5 tn assets under management
- **Sep ‘20** – China vows to hit peak emissions before 2030 and reach carbon neutrality before 2060

#### Social justice
- **May ‘19** – The US House of Representatives passed the Equality Act to protect LGBT rights, but it remains un-addressed by the Senate over 1 year later
- **May ‘20** – The UN, France and Mexico launch the Generation Equality Forum
- **May ‘20** – The Black Lives Matter movement gains public attention with over 450 major protests across the US, questioning the fairness of treatment by US police departments

#### De-globalization
- **Dec ‘18** – Donald Trump implements ‘America first’ policy and withdraws from large multilateral agreements, e.g. CPTPP
  1) CPTPP: Comprehensive and Progressive Trans-Pacific Partnership, which was created as a replacement for TPP after the US withdrawal
- **2019** – Tensions between the US and China escalate with reciprocal tariff rises
- **Dec ‘19** – WTO trade restrictions reach a historic high, covering 7.5% of global imports
- **Jan ‘20** – The United Kingdom leaves the European Union (Brexit)
- **Jan ‘20** – Global dissatisfaction with democracy hits an all-time high at ~60% of the population

#### Volatility
- **Dec ‘19** – Global Economic Policy Uncertainty Index averages 270 in 2019 – 3.2 times higher than its pre-financial crisis average
- **Dec ‘19** – The economic & stock market developments are drifting apart: US GPD +42% vs. S&P 500 +179% between 2010 and ‘19
- **2020** – COVID-19 sends the world economy into an unprecedented recession with -5% to -10% GDP vs. 2020 forecast globally
- **May ‘20** – China returns to y-o-y growth in LV sales

Source: European Union, BlackRock, WTO, BEA, Yahoo, Oxford Economics, press research, Roland Berger/Lazard
Changes in the socio-economic megatrends are expected to noticeably change the future business of automotive suppliers

Exemplary implications on traditional automotive suppliers

<table>
<thead>
<tr>
<th>Post fossil civilization</th>
<th>Social justice</th>
<th>De-globalization</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing share of electric mobility leads to a shift of value add towards the suppliers</td>
<td>Negative image of luxury or premium cars in established markets leads to volume declines for high-end variants</td>
<td>Increasing tendency for local-for-local supply-chains, driven mostly by the COVID-19 crisis</td>
<td>Increasing difficulties to ensure stable plant utilizations across the value chain</td>
</tr>
<tr>
<td>Especially for ICE powertrain focused suppliers very negative impact due above average volume decline in the next years</td>
<td>Increasing importance of supply chain sustainability including proof or origin requirements for ethical sourcing, e.g. raw material</td>
<td>De-globalization of supply-chains will drive competition for international suppliers in local markets</td>
<td>Increasing planning complexity in almost all business processes, e.g. supplier management, production or capacity planning</td>
</tr>
<tr>
<td>Declining volumes overall due to stronger use of alternative mobility concepts</td>
<td>Increasing importance of social engagement as part of a good brand image to attract talent</td>
<td>Significantly increasing need for internal collaboration and global know-how transfer but also required efforts to protect intellectual property</td>
<td>Higher capital requirements on the one hand to finance capacity requirements and more difficulties to draw convincing equity stories for investors in the light of higher uncertainties</td>
</tr>
<tr>
<td>New players for new technologies, e.g. battery suppliers or software players, enter the automotive supplier landscape and increase competitive pressures</td>
<td>Diversity topics to be expected on the agendas of many suppliers and thus pull significant management attention</td>
<td>Further increase in factor costs and more difficulties to manage plant utilization from a global perspective</td>
<td>Logistic as well as relocation costs expected to increase in the future</td>
</tr>
</tbody>
</table>

Overall impact

Positive impact  Negative impact

Source: Roland Berger/Lazard
Looking forward

The current pandemic doesn't change the future automotive and mobility ecosystem – R&D remains key to ensure long-term success

Industry transformation 2030 and beyond

- High share of electric vehicles (30-50% w/o ICE)
- Al-based optimization of "super-systems" (e.g. traffic flow plus grid load)
- Low share of individual car ownership
- MaaS using purpose-built mobility vehicles (PMV’s):
  - Modular
  - Electric (BEV and/or FC)
  - Connected
  - Autonomous (L4/L5)

In the future mobility ecosystem, purpose-built, automated, modular, connected vehicles become part of a "System of Systems"
Looking ahead, most Winners' differentiators will gain additional importance

Strategic options for automotive suppliers

1. Business leadership
   - Focus on consistent growth
   - Positioning as a critical system supplier with opportunity to differentiate
   - Business model with know-how/service driven elements
   - Striving for leading market positions per product
   - Thought leadership for new products

2. Strategic coherence
   - Strong focus on R&D and product innovations
   - Limiting dependency on few clients or market segments
   - Recognizable synergies across the portfolio
   - Stable and experienced management team
   - Active portfolio management with comparably high number of M&A transactions
   - Divestments as a common instrument to adjust the portfolio

3. Size and financial position
   - Sound capital structure
   - Above average financial performance
   - Global presence, to participate in local growth opportunities
   - Disciplined capital allocation

4. Proven ability to execute
   - Clear communication and execution of strategic intent
   - Focus on efficient deployment of resources

Source: Roland Berger/Lazard
The way forward

Opportunities for suppliers to course-correct strategies and ensure a sustainable future business model

The next economic cycle

Lower vehicle sales in parallel with technological disruption will be the challenge for suppliers in the coming years

The Winners framework

2008/09 shows that an economic crisis can be a strategic chance to set the course for successful, profitable growth

The COVID-19 impact

COVID-19 hit the markets during an economic downturn and put suppliers under enormous pressure

The contacts

Roland Berger and Lazard Automotive teams
The way forward – Key takeaways

- Suppliers need to think and act along three dimensions to navigate through the challenges of COVID-19 and the industry transformation.

- Defined MADE strategies will likely require a course-correction, leading to a revised positioning of a supplier’s product, customer and regional portfolio – Chinese/Japanese suppliers will have to further internationalize, while many of their European peers will have to catch up on new technologies.

- Performance improvement will remain an inevitable part of any supplier’s activity in the near future to master the ongoing cost pressure across virtually all vehicle domains – Next to efficiency gains, restructuring of legacy businesses will be a core element for many triad suppliers.

- Suppliers will have to pay more attention to defining answers for the socio-economic megatrends than before – Substantial progress is needed to drive sustainability and cope with de-globalization in order to prevent negative business impact in the mid- and long-term.

Source: Roland Berger/Lazard
The industry transformation puts the same challenges on each supplier CEO's agenda but with individual solutions for the way out.

### Strategic roadmap – Exemplary for Tier 1 system supplier

<table>
<thead>
<tr>
<th>Own position</th>
<th>Strategic direction</th>
<th>Challenge</th>
<th>Potential solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong</strong></td>
<td>Keep profitable business units</td>
<td>Price pressure from customers</td>
<td>✔️ Continuously reduce cost base of traditional business</td>
</tr>
<tr>
<td></td>
<td>Cement long-term leadership through acquisitions</td>
<td>Protection of current market position against emerging disruptors</td>
<td>✔️ Manage free cash flow, reducing Capex/R&amp;D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ongoing restructuring need</td>
<td>✔️ Acquire competitiveness at low/discount level</td>
</tr>
<tr>
<td><strong>Weak</strong></td>
<td>Radical restructuring of legacy business</td>
<td>Lack of potential buyers</td>
<td>✔️ Mergers or Joint Ventures</td>
</tr>
<tr>
<td></td>
<td>Divest cash burning units without future growth potential</td>
<td>Low valuation levels</td>
<td>✔️ Spin-off or subsidiary IPO to form consolidation platforms (in case of sizeable businesses)</td>
</tr>
<tr>
<td><strong>Future growth areas</strong></td>
<td>Invest in areas with future growth potential</td>
<td>Capex intensive in the short- to mid-term</td>
<td>✔️ Partnership in R&amp;D</td>
</tr>
<tr>
<td><strong>Strong</strong></td>
<td></td>
<td></td>
<td>✔️ Consider minority IPOs or capital increase to generate required funds</td>
</tr>
<tr>
<td><strong>Weak</strong></td>
<td>Divest high growth units where own position is too weak or where financial power is not sufficient to develop the business</td>
<td>High investments required, while access to capital is difficult</td>
<td>✔️ Exit at valuation peaks and use proceeds for deleveraging or re-investing in core business</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>✔️ Use SPACs as alternative to IPOs</td>
</tr>
</tbody>
</table>

Source: Roland Berger/Lazard
To navigate through these challenging times of COVID-19 and the industry transformation, we propose thinking along three dimensions: Re—Why can you re-align your strategy? How can you meet customers', employees', and society's expectations? What can you do to improve performance in the current market environment? How can you develop into a good corporate citizen?

The Triple Transformation Framework helps to address today’s challenges, enabling managers to re-align and ensure profitability in the next decade.

Source: Roland Berger/Lazard
Suppliers from all regions have to re-align in specific aspects of the business – Japanese suppliers have the highest need to act

**Triple Transformation – Position**

<table>
<thead>
<tr>
<th>Strategic tasks</th>
<th>Specific actions and recommendations</th>
<th>Regional relevance</th>
</tr>
</thead>
</table>
| Reassessment of market development      | > Cross-check of developments per product/business division in the last years including expectations for the upcoming years  
> Assessment also on regional level to ensure participation in local opportunities | low    
|                                        | > Assessment to which extent current portfolios reflect the technical changes which are triggered by the industry transformation  
> Evaluation of suitable opportunities for portfolio changes, e.g. M&A, organic growth, extensions to foster USP's | high |
| Adjustment of product portfolio         | > Assessment of opportunities with clients from other regions or with another brand image, e.g. mass-market OEMs  
> Phasing out of business with clients where projects regularly do not translate into sufficient margin levels | low    
| Adjustment of target clients            | > Alignment of footprint and regional client portfolio  
> Broadening of local presence as a consequence of COVID-19  
> Extension of low cost country activities to set the base for further growth outside the triad | high |
| Adjustment regional presence            |                                                                                                         | low    

Source: Roland Berger/Lazard
Financial and operational performance remains a core criterion for suppliers to successfully manage the transition

### Triple Transformation – Perform

#### Strategic tasks

<table>
<thead>
<tr>
<th>Performance improvement</th>
<th>Specific actions and recommendations</th>
<th>Regional relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt; Operational performance improvement to increase manufacturing efficiency and reduce CAPEX throughout plants</td>
<td>low China, high Japan</td>
</tr>
<tr>
<td></td>
<td>&gt; Especially for Japanese suppliers, a reorientation from the known Kaizen concept towards innovation and the necessity of performance improvement is highly required</td>
<td>low China, high Japan</td>
</tr>
<tr>
<td></td>
<td>&gt; Stringent direct and indirect material cost reduction programs</td>
<td>low China, high Japan</td>
</tr>
<tr>
<td></td>
<td>&gt; Consistent streamlining of overhead structures</td>
<td>low China, high Japan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Restructuring of legacy business</th>
<th>Specific actions and recommendations</th>
<th>Regional relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt; Divestment of consistently underperforming products or business units through M&amp;A or termination/out-phasing</td>
<td>low China, high Japan</td>
</tr>
<tr>
<td></td>
<td>&gt; Collaboration models with other suppliers to be assessed as option to resolve limited scale effects in underperforming areas</td>
<td>low China, high Japan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjustment of core-competencies</th>
<th>Specific actions and recommendations</th>
<th>Regional relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt; Active Make-or-Buy assessment for current product portfolio and current level of vertical integration</td>
<td>low China, high Japan</td>
</tr>
<tr>
<td></td>
<td>&gt; Identification of future core-competencies from an operational perspective and as basis for active CAPEX management</td>
<td>low China, high Japan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjustment of employee skill-sets</th>
<th>Specific actions and recommendations</th>
<th>Regional relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt; Match of employee skills with future R&amp;D and future manufacturing requirements</td>
<td>low China, high Japan</td>
</tr>
<tr>
<td></td>
<td>&gt; Preparation for the 'war for talent' with well-known multi-national companies</td>
<td>low China, high Japan</td>
</tr>
</tbody>
</table>

Source: Roland Berger/Lazard
Partnerships and decentralized structures will be key success factors in the upcoming years for automotive suppliers

### Strategic tasks

<table>
<thead>
<tr>
<th>Strategic tasks</th>
<th>Specific actions and recommendations</th>
<th>Regional relevance</th>
</tr>
</thead>
</table>
| Adjustment of business model                         | - Re-thinking of current offerings and incorporation of especially service and engineering related elements to generate differentiation potential  
- Realization of potential outside of the traditional fields  
- Collaboration with players outside of the automotive industry                                                                                     | low                |
| Adjustment of target operating model (robust organization) | - Assurance that the overall organization and the governance reflect today's requirements in terms of agility and flexibility  
- Decentralization of decisions into the regions to ensure sufficient local independence within the new normal                                                                 | high               |
| Partnership/Collaboration with clients and suppliers | - Consideration of new collaboration models, e.g. within R&D topics with the sole aim of sharing financial burdens  
- Consideration of minority IPO's as alternative to full divestments  
- Consideration of subsidiary IPO's to form consolidation platforms                                                                                      | low                |
| Sustainability strategy                              | - Implement supply chain traceability standards and ensure sustainable raw material sources  
- Re-thinking of brand positioning including social engagement to master the upcoming socio-economic challenges  
- Attracting of talent by state-of-the-art diversity standards and a multi-cultural working environment                                                               | high               |

Source: Roland Berger/Lazard
Suppliers have to prepare for the next economic cycle

Key takeaways for automotive suppliers

- COVID-19 and the acceleration of the technological changes coming alongside with the industry transformation are the starting point for a new economic cycle – This is a serious milestone for suppliers

- Neither the product domain nor the regional positioning is a limiting factor – A thought-through strategy which is consistently executed is the key for the success of a company

- Suppliers have to consider course-correcting their overall strategy to ensure a suitable positioning for future success – Classical cost-cutting programs will not be sufficient to prepare

- Radical restructuring or even disposal of legacy businesses with a weak competitive position is required to dispose of a burden that might put the company’s existence at risk in the new normal

- Given tighter access to equity as well as traditional/credit financing, suppliers should consider alternative ways to fund growth opportunities, e.g. minority IPOs or spin-offs of sought-after/high-growth business areas

- Smart partnership solutions become more important than ever – Automotive suppliers have to think beyond classical Joint Ventures and find ways to collaborate in R&D, product offerings and funding for their endeavors

- Automotive suppliers have to transform and ensure the agility in their organizations to deal with an increasingly volatile market environment

Source: Roland Berger/Lazard
A
The COVID-19 impact
COVID-19 hit the markets during an economic downturn and put suppliers under enormous pressure

B
The Winners framework
2008/09 shows that an economic crisis can be a strategic chance to set the course for successful, profitable growth

C
The next economic cycle
Lower vehicle sales in parallel with technological disruption will be the challenge for suppliers in the coming years

D
The way forward
Opportunities for suppliers to course-correct strategies and ensure a sustainable future business model

E
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