



Outlook

Production: Global Round and Europe Focus

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LMCA Global LV Conference, Frankfurt
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Outline

- Global Round-up
- Risks
- Europe Focus
- Longer term

Synchronous surge has passed: how slow will it go?

- Concerns growing, as risks are mainly negative

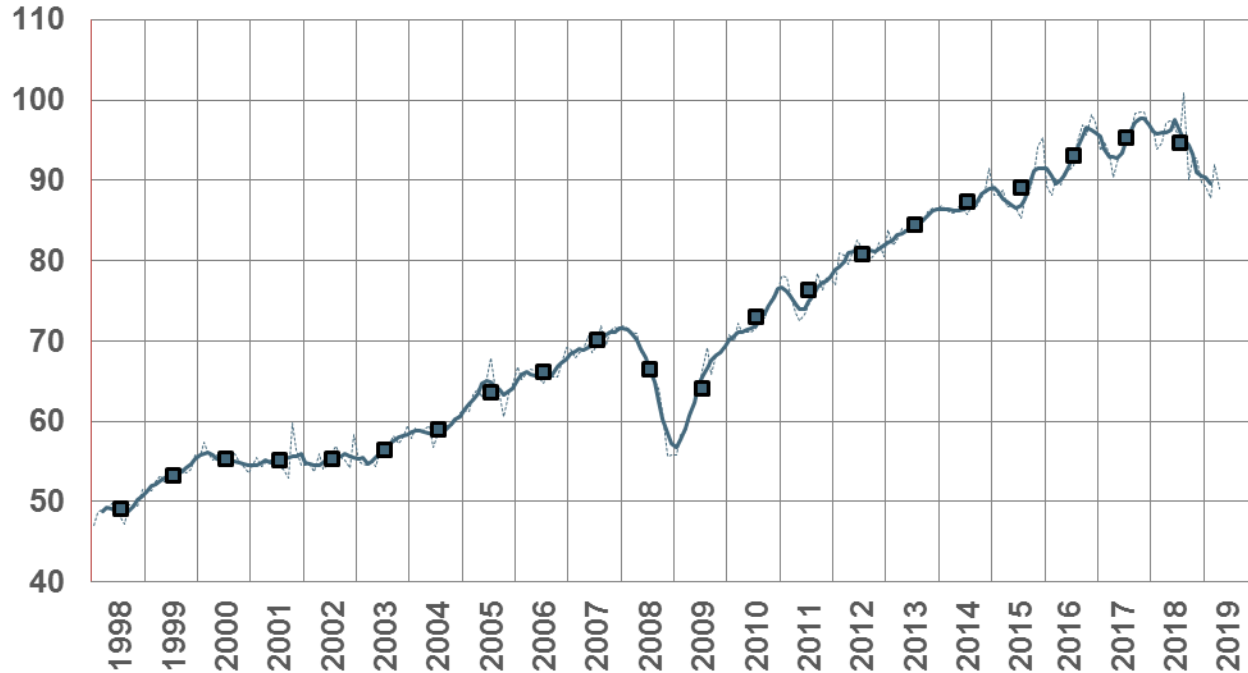
| Real GDP Growth | 2016 | 2017 | 2018 | 2019 |
|-----------------|-------|------|-------|-------|
| USA | 1.6% | 2.2% | 2.9% | 2.5% |
| Argentina | -1.8% | 2.9% | -2.6% | -1.6% |
| Brazil | -3.3% | 1.1% | 1.2% | 2.3% |
| Japan | 0.6% | 1.9% | 0.7% | 0.8% |
| ASEAN | 4.6% | 5.2% | 5.0% | 4.7% |
| China | 6.7% | 6.8% | 6.6% | 6.1% |
| India | 7.9% | 6.2% | 7.4% | 7.3% |
| Eurozone | 1.9% | 2.5% | 1.8% | 1.4% |
| Russia | -0.2% | 1.5% | 1.9% | 1.5% |
| UK | 1.8% | 1.8% | 1.4% | 1.4% |
| World | 2.4% | 3.0% | 3.0% | 2.6% |

Source: Oxford Economics

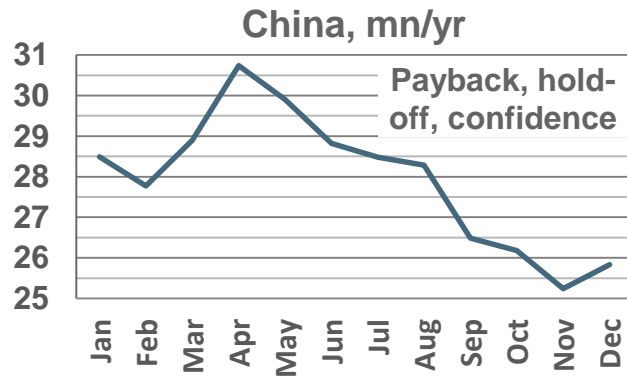
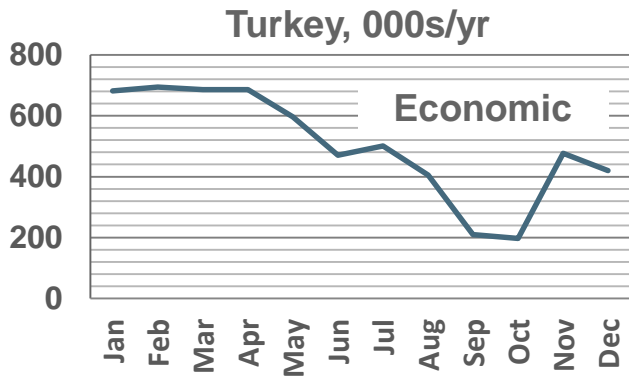
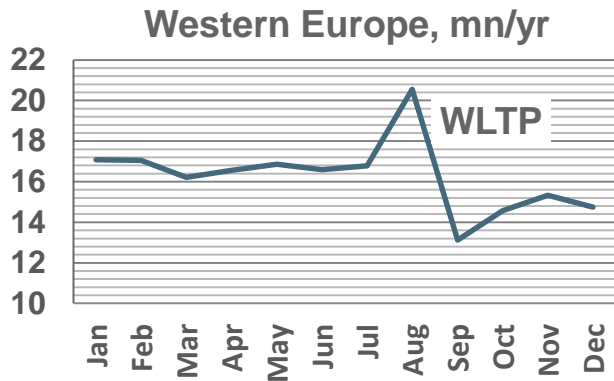
2019: Global Light Vehicle sales



Weak finish to 2018 has continued into early 2019

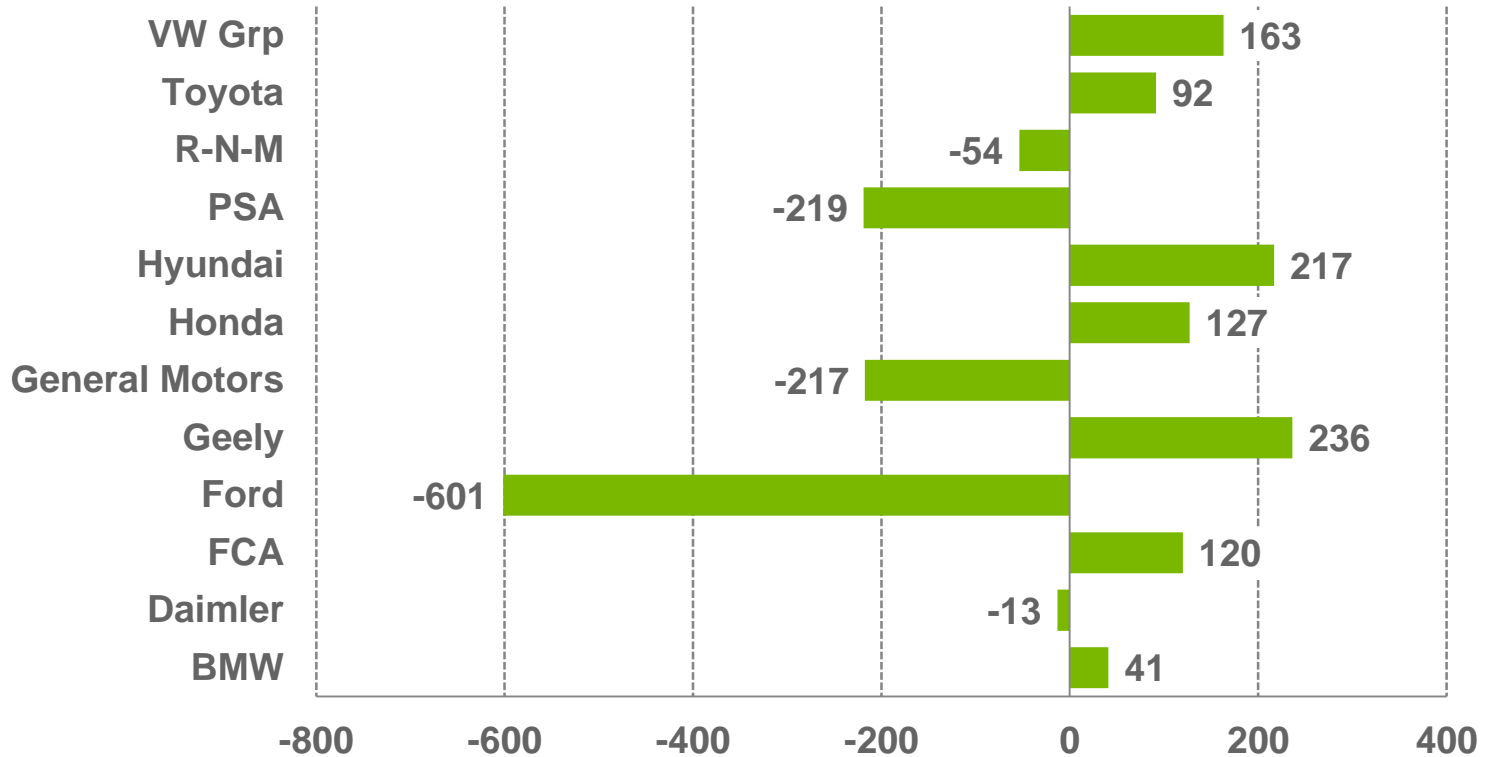


2018: Falling markets (monthly selling rates, LVs)

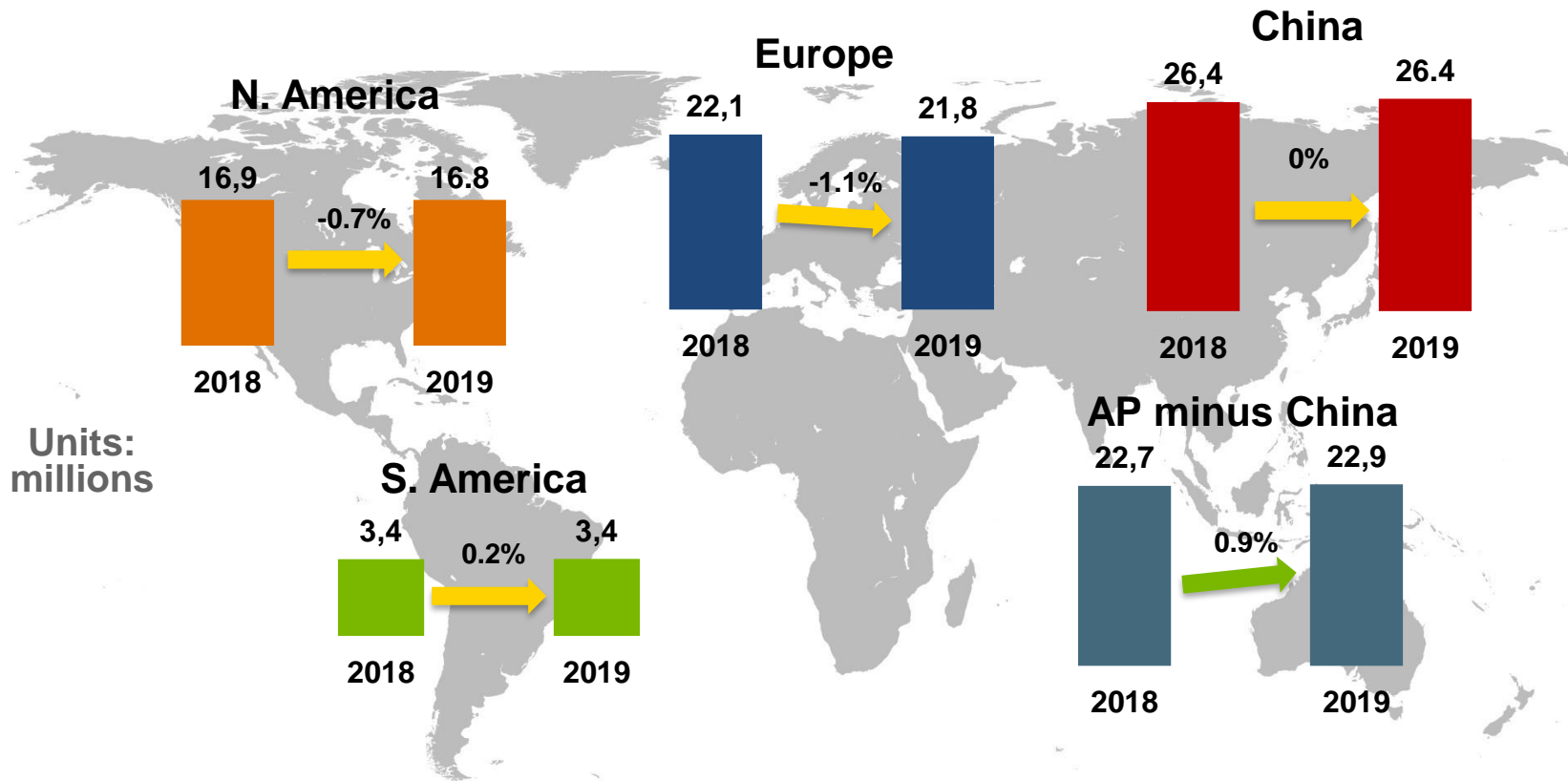


Global LV production, -790k in 2018 (-1% to 94.2 mn)

2018 versus 2017, change in 000s

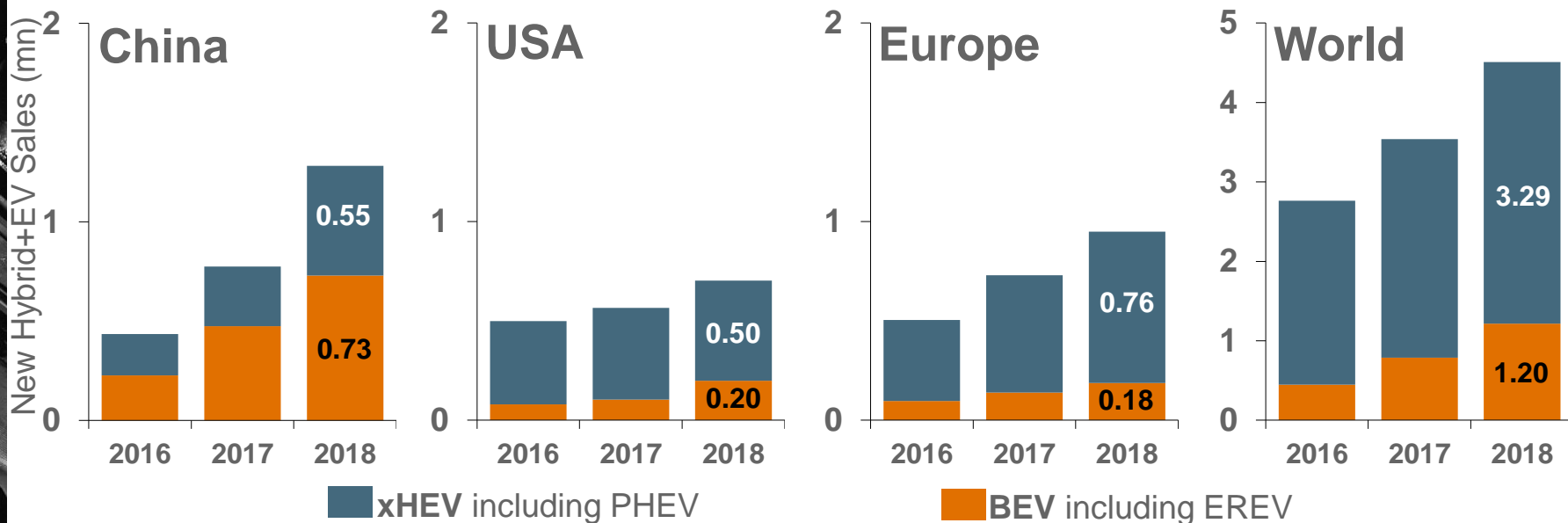


2019 global LV output stalls : 94.0mn (+0%)



World: BEV & Hybrid Markets to 2018

Global Passenger Car and US Light Truck Market

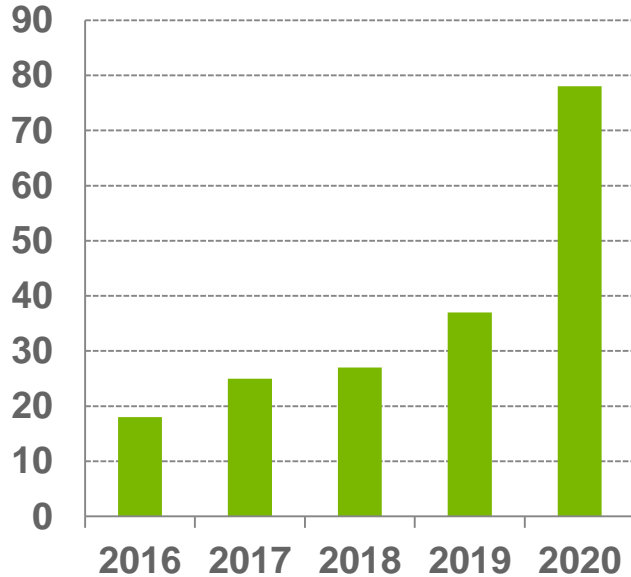


World hybrid & EV passenger car and US LT sales reached 4.5 million units in 2018
Almost 30% were BEVs (more than 50% sold in China) while PHEV sales were 700k

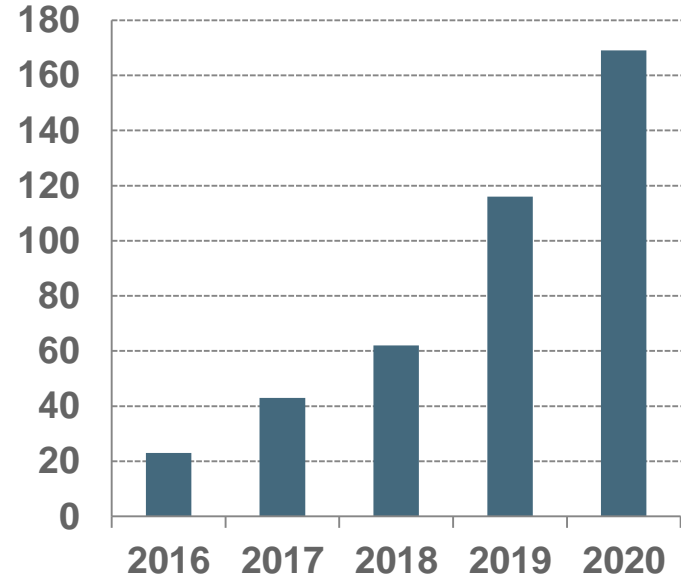
The number of pure BEVs is taking off ...





Number of BEV models
World, Non-China, volume > 1,000 units



Number of BEV models
China, volume > 1,000 units





Chinese car sales start poorly: another double-digit fall...

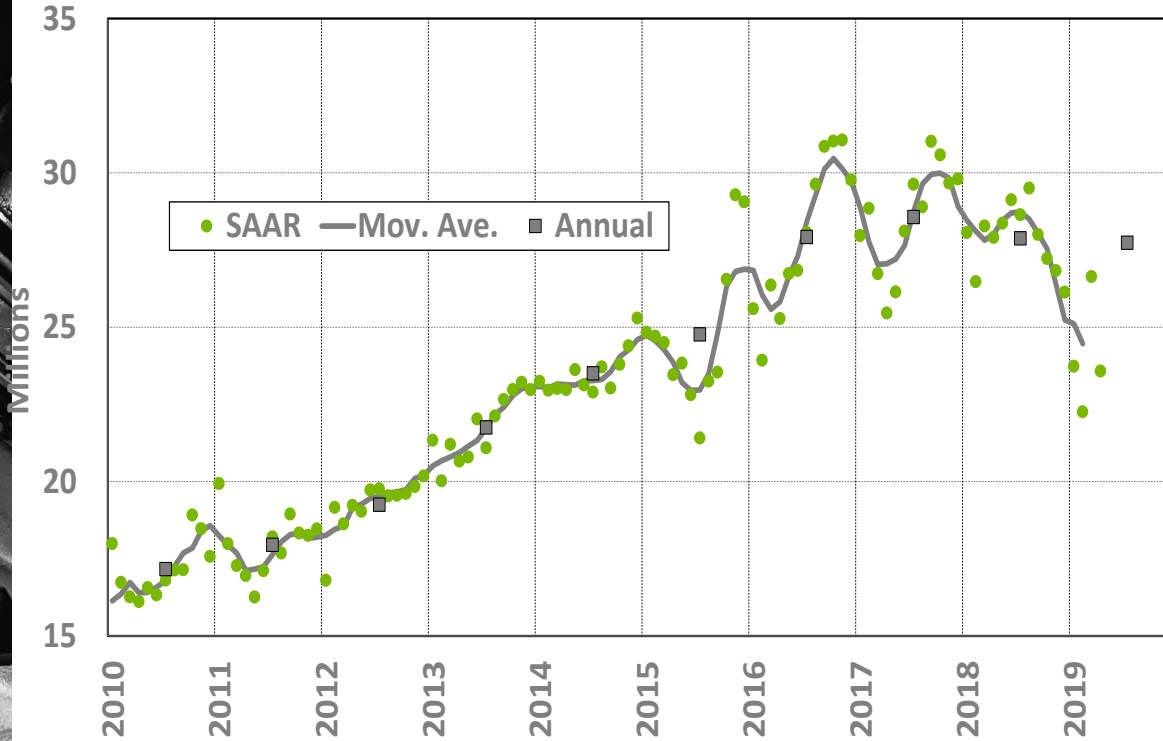
US threat to raise auto import tariffs to 25% still stands

EU-Japan Trade deal: Honda to quit the UK & Turkey

Brexit disruption?

OECD composite leading global growth indicator falls to lowest point since October 2012...

Risks: China market troubles



- Incentive distortions throughout 2015-2018 period.
- Late-2018 level depressed by payback/rumours/confidence.
- Policy direction still not settled, though support for demand looks inevitable.
- If a rural-first target approach does not work, more incentives may be added.
- Another spike to be built into the market by coming incentives (when they end).
- Regional Emissions de-stocking

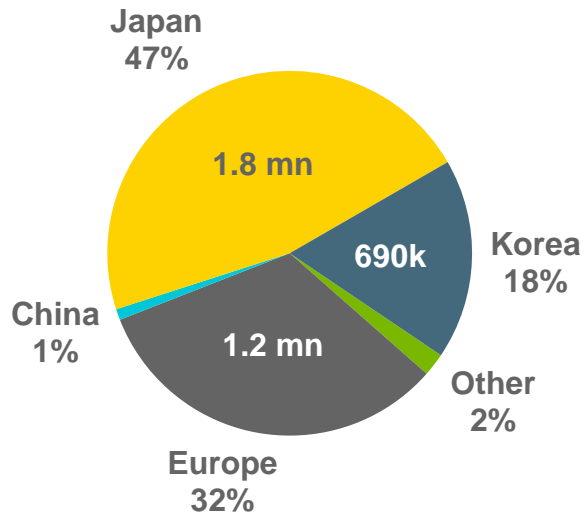
Global short-term external risk factors



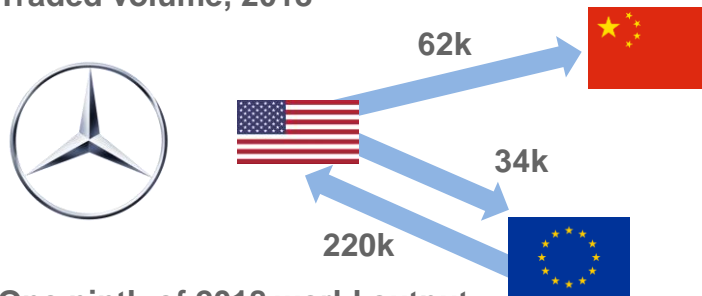
- After 2018 contraction, slower global momentum may start to negatively impact individual markets.
- China, US and WE levels may not be strong enough to support positive global volume growth and are ones to watch given risks.
- **Global LV sales momentum risk is high.**
- Tariffs and a trade war remain a significant concern for autos.
- USMCA not yet a done deal. US-China tensions re-emerge. US-EU unresolved.
- **EU premium groups remain at greatest risk if not settled. 25% tariff on EU imported vehicles, could lower US sales by 300-400k.**
- Brexit stalemate remains major concern – and 'hard to watch'.
- Could add £1.8bn to the cost of exports and £2.7bn to the cost imports, annually.
- **UK LV market could shrink by nearly 15% and threaten domestic and continental plants while undermining JIT business models.**
- CAFE talks have broken down. Regulators moving forward freeze after 2020.
- EU CO2 emissions increased in 2017, putting 2021 target in Jeopardy.
- China NEV credit starts in 2019 (modified version of ZEV).
- **Many moving parts but likely enables EV growth...if consumers buy.**

US Policy : external trade conflict would hit specific groups

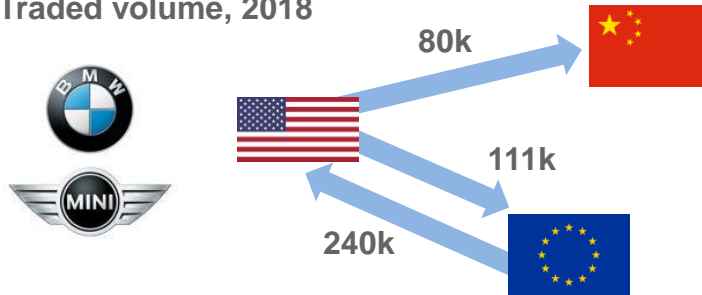
US LV imports by source
2018, Non-NAFTA
(3.9 mn units)



Traded volume, 2018



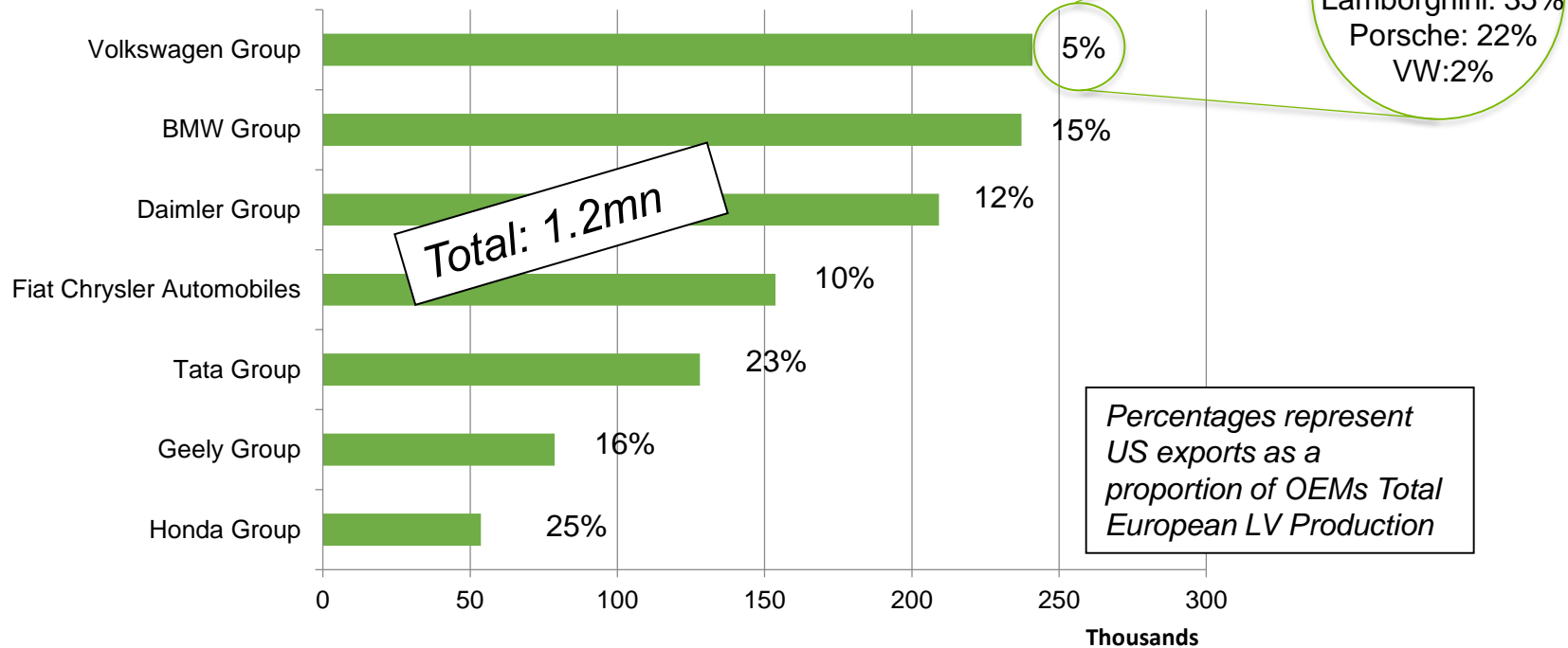
Traded volume, 2018



Risks: US policy – European Exposure

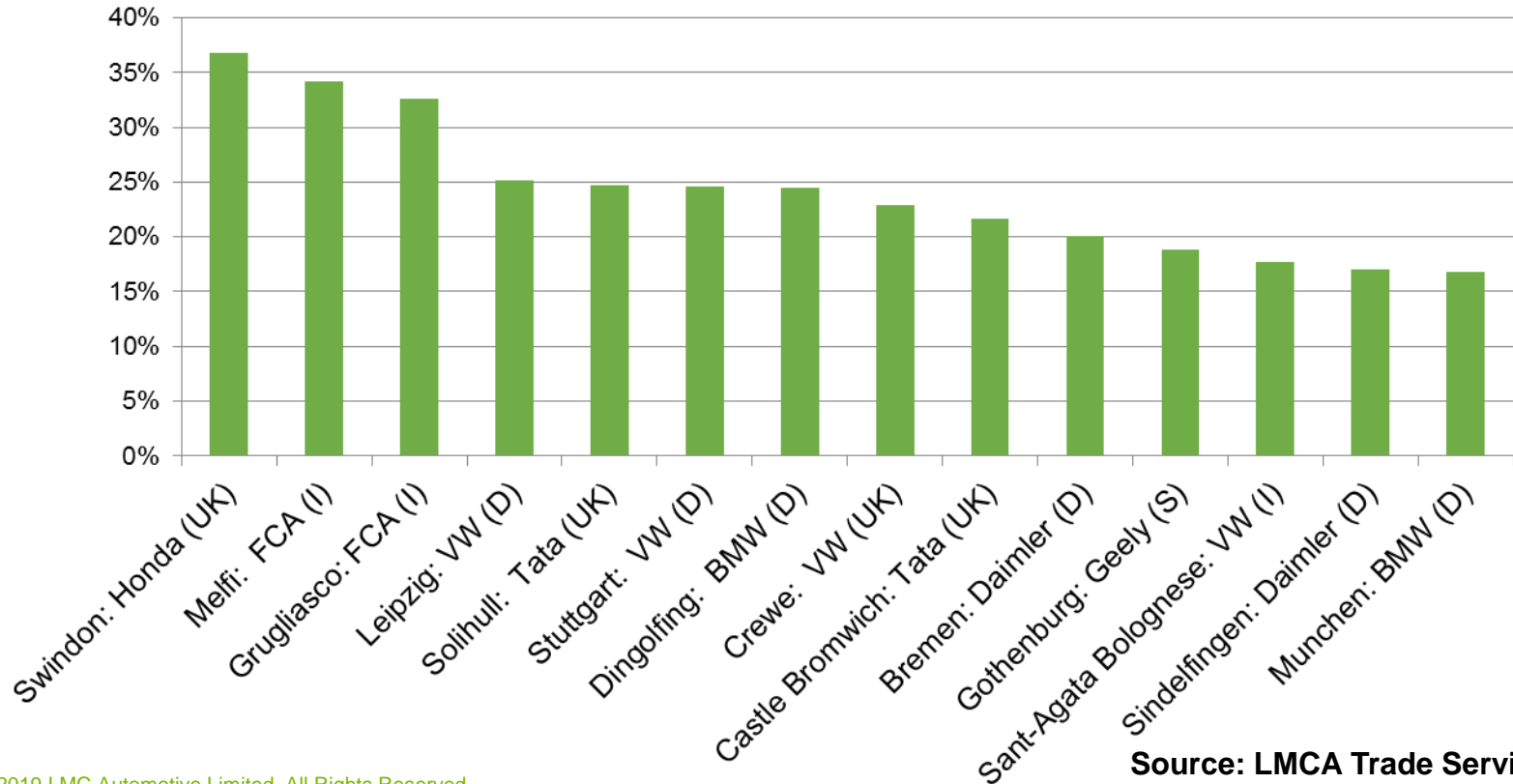


2018 Top European OEM Exporters to US by volume

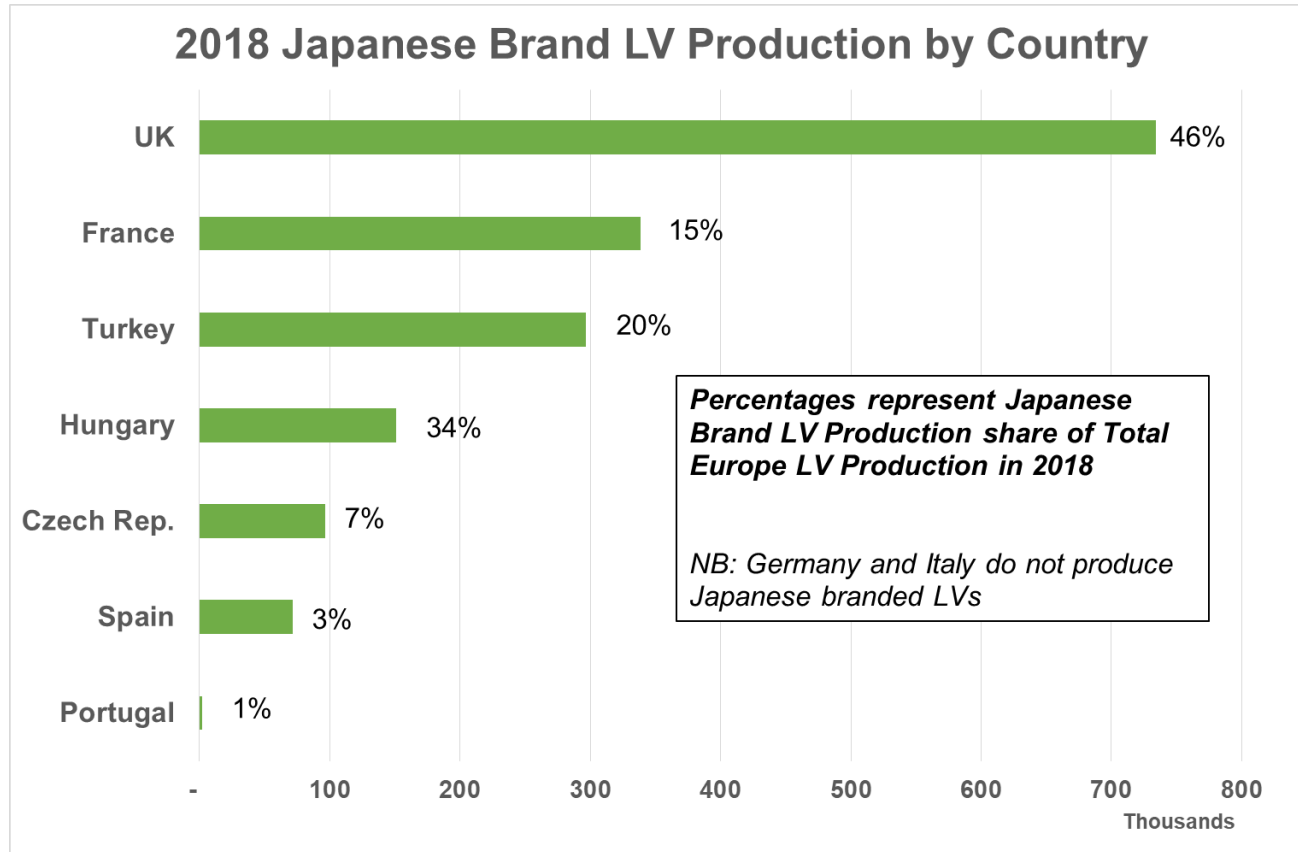


Risks: US Policy – European Exposure by Plant

US-bound European LV exports as a percentage of 2018 plant output

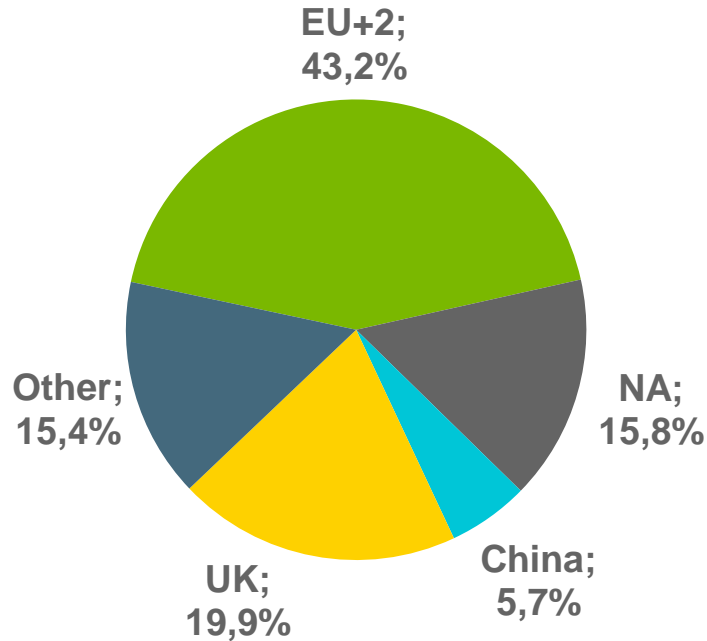


Risks: EU-Japan Trade agreement

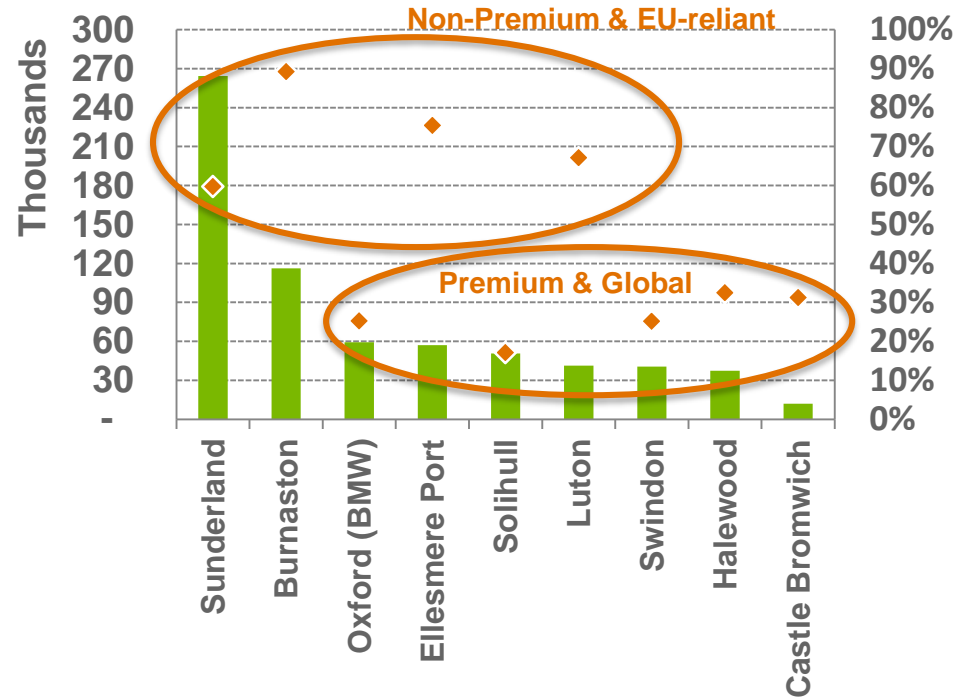


Sales of UK-built Light Vehicles, 2018

Market destinations



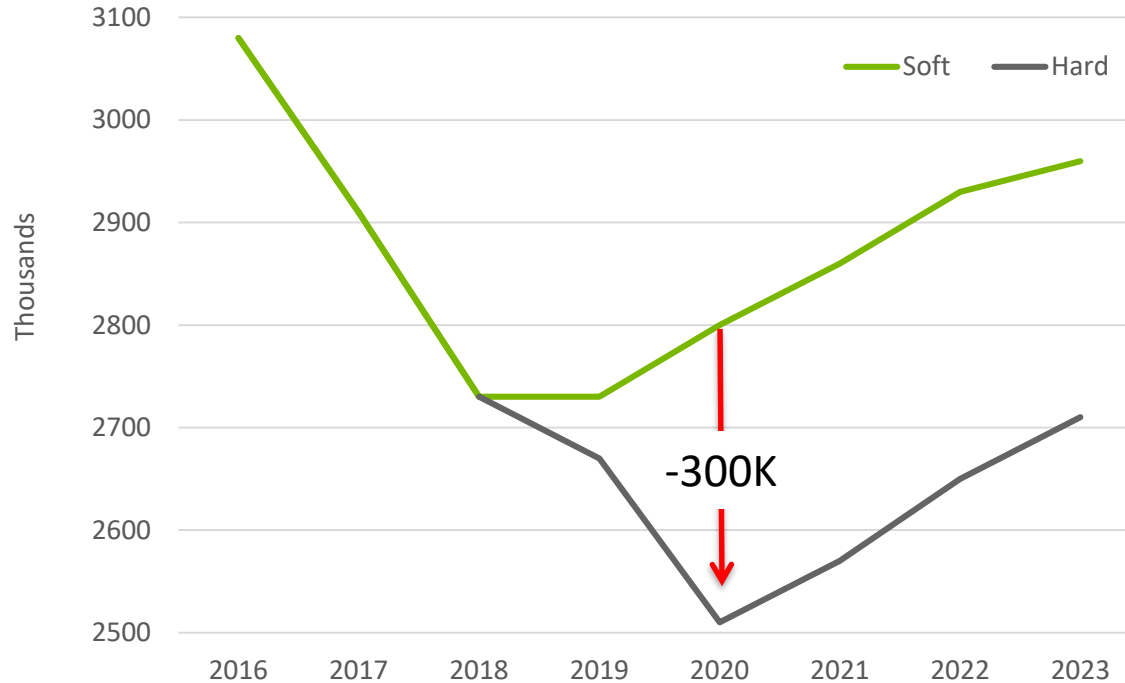
Reliance on EU+2 markets (not incl. UK) volume (■), share of 2018 output (◆)



Brexit scenarios: Deal or No Deal?



UK Light Vehicle Sales Scenarios

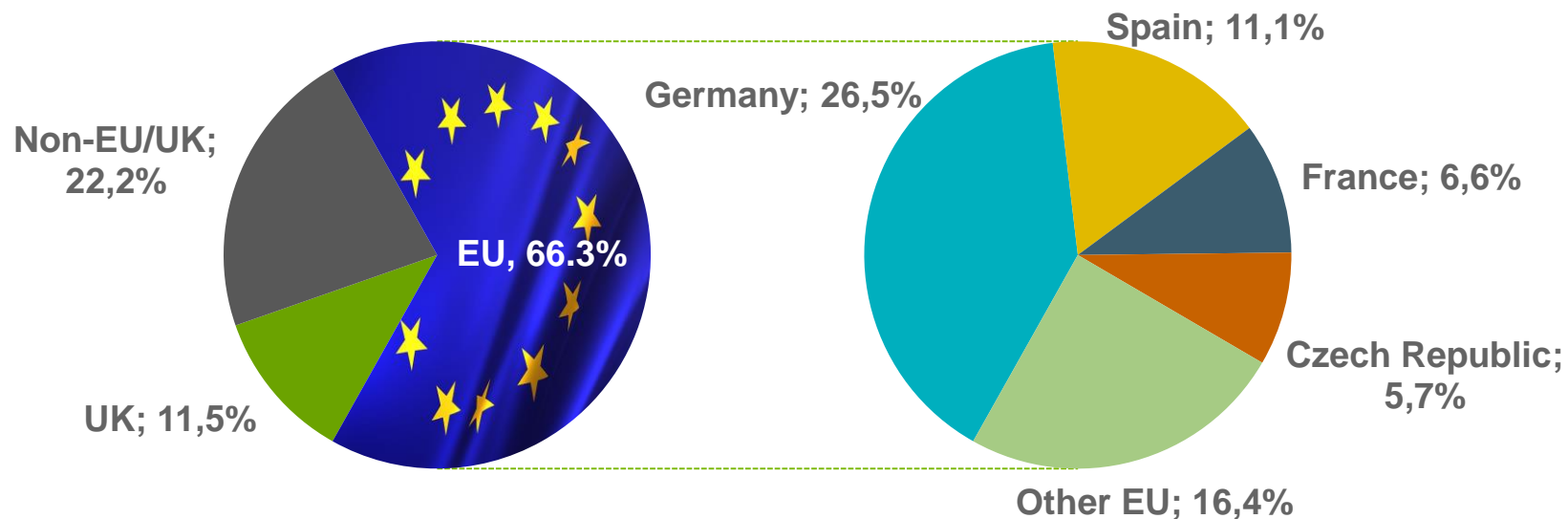


- 'Soft Brexit': results in a 2-3 year transitional arrangement, where UK-EU FTA remains in tact.
- 'Hard Brexit': No deal between the EU and UK. The two markets use WTO rules from after October 2019.

Risks: Brexit

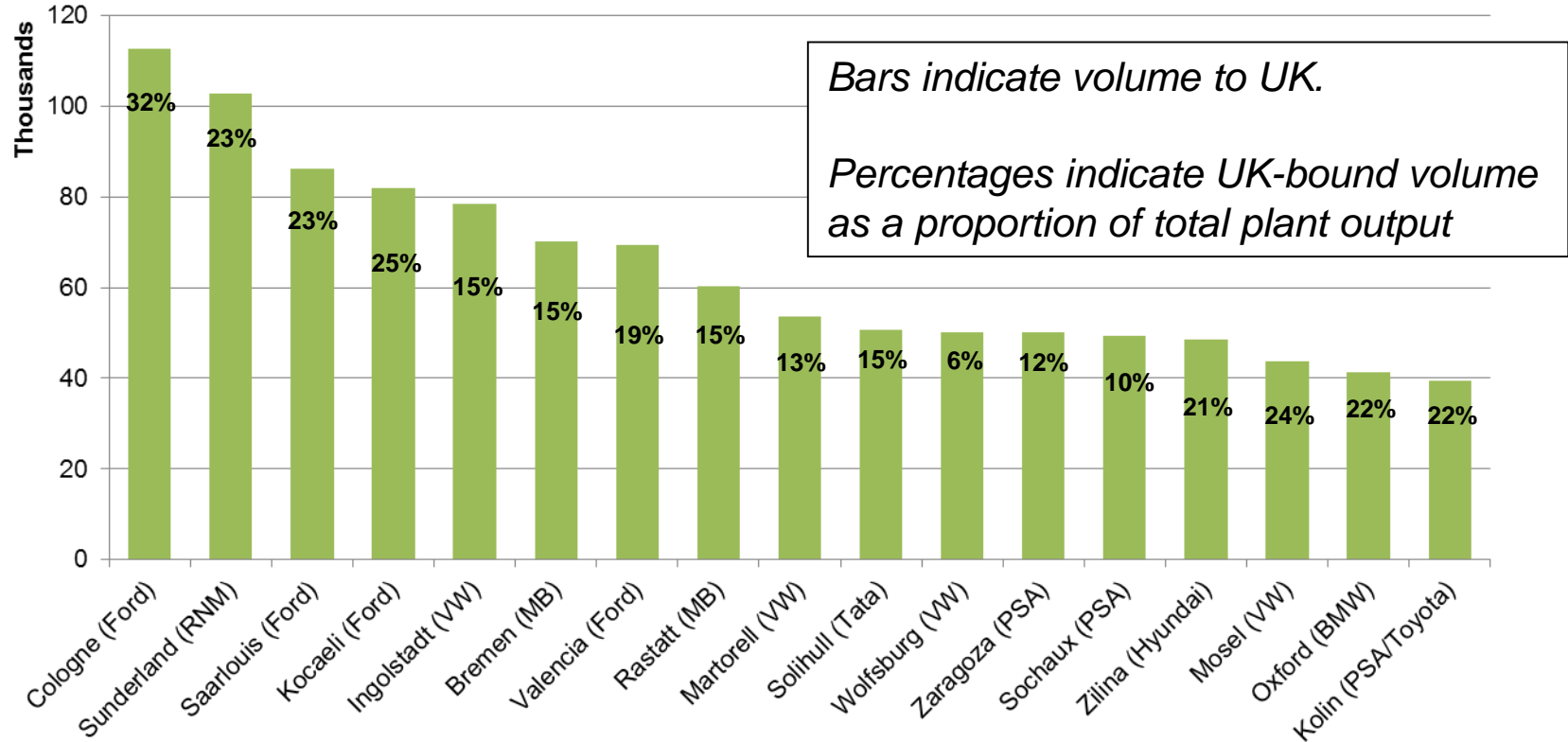
UK Light Vehicle sales share by source, 2018

2.75 mn units

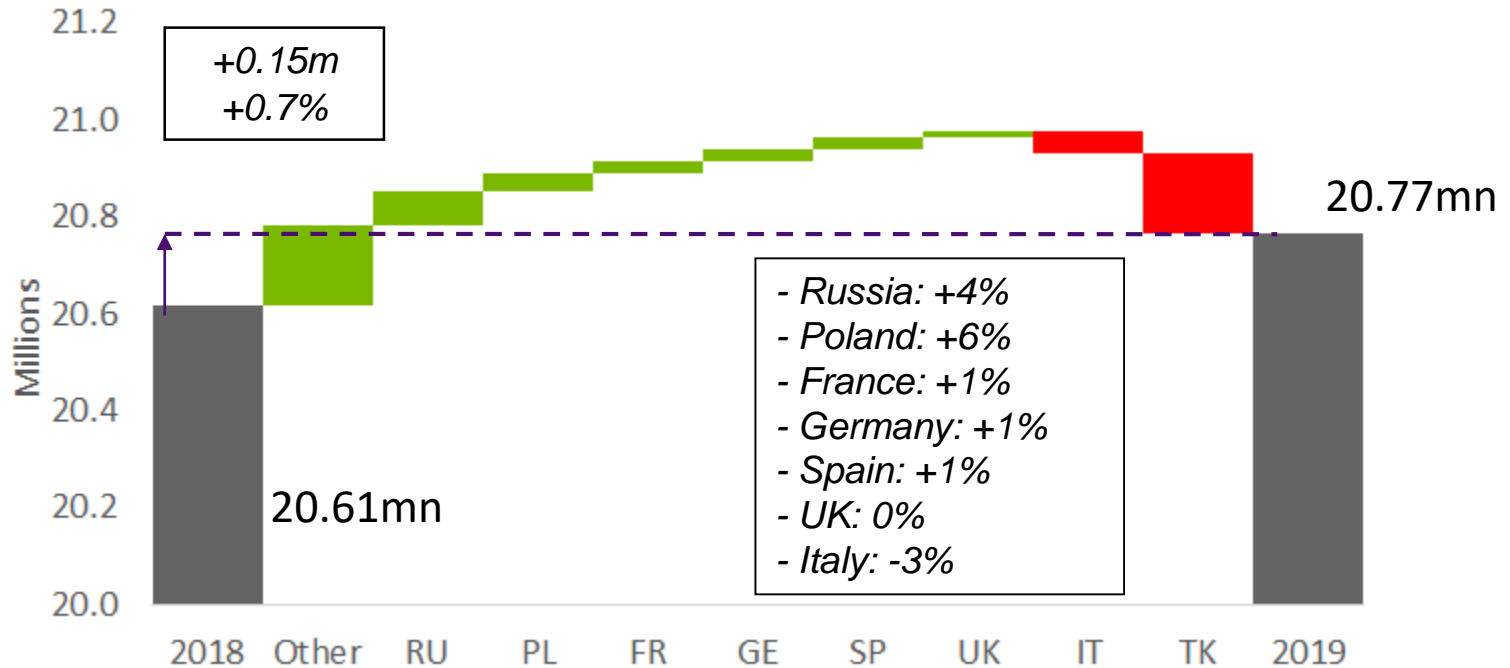


Risks: Brexit

2018: Rank UK-bound production volume by plant

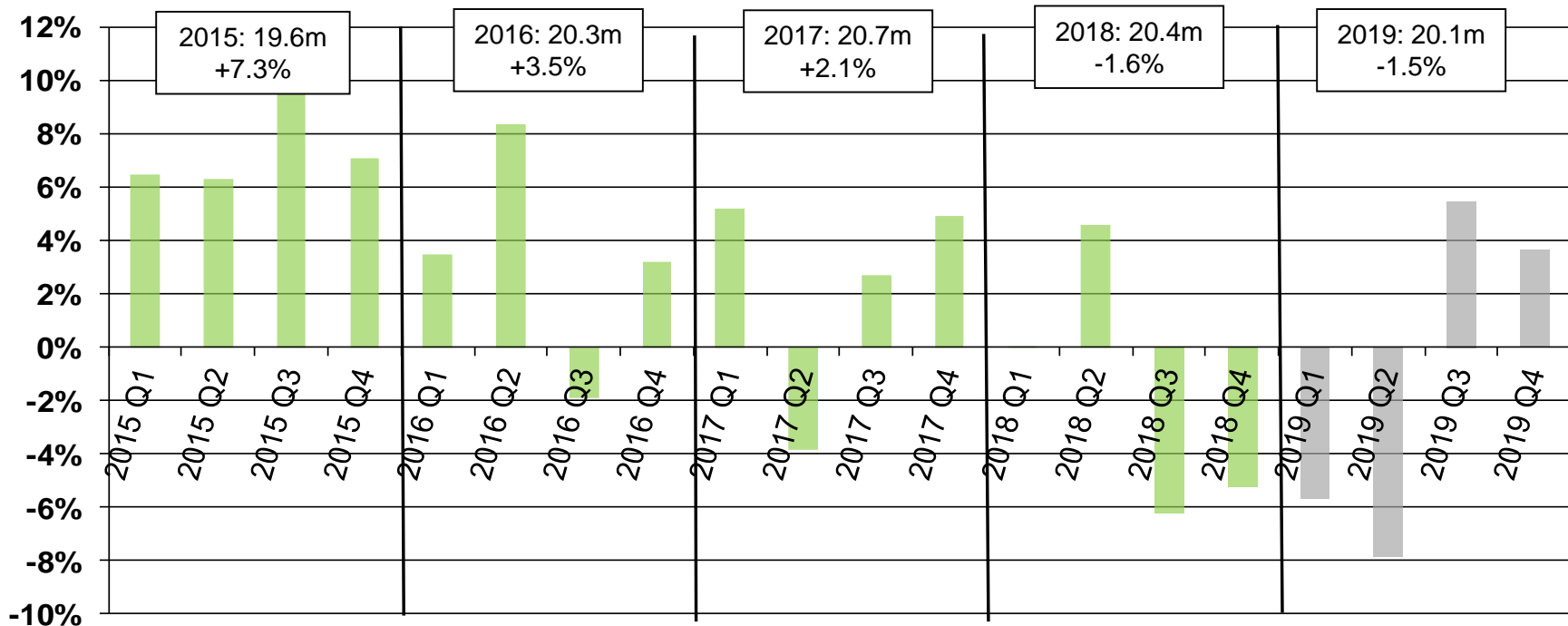


BASE forecast: Short-run European LV Sales

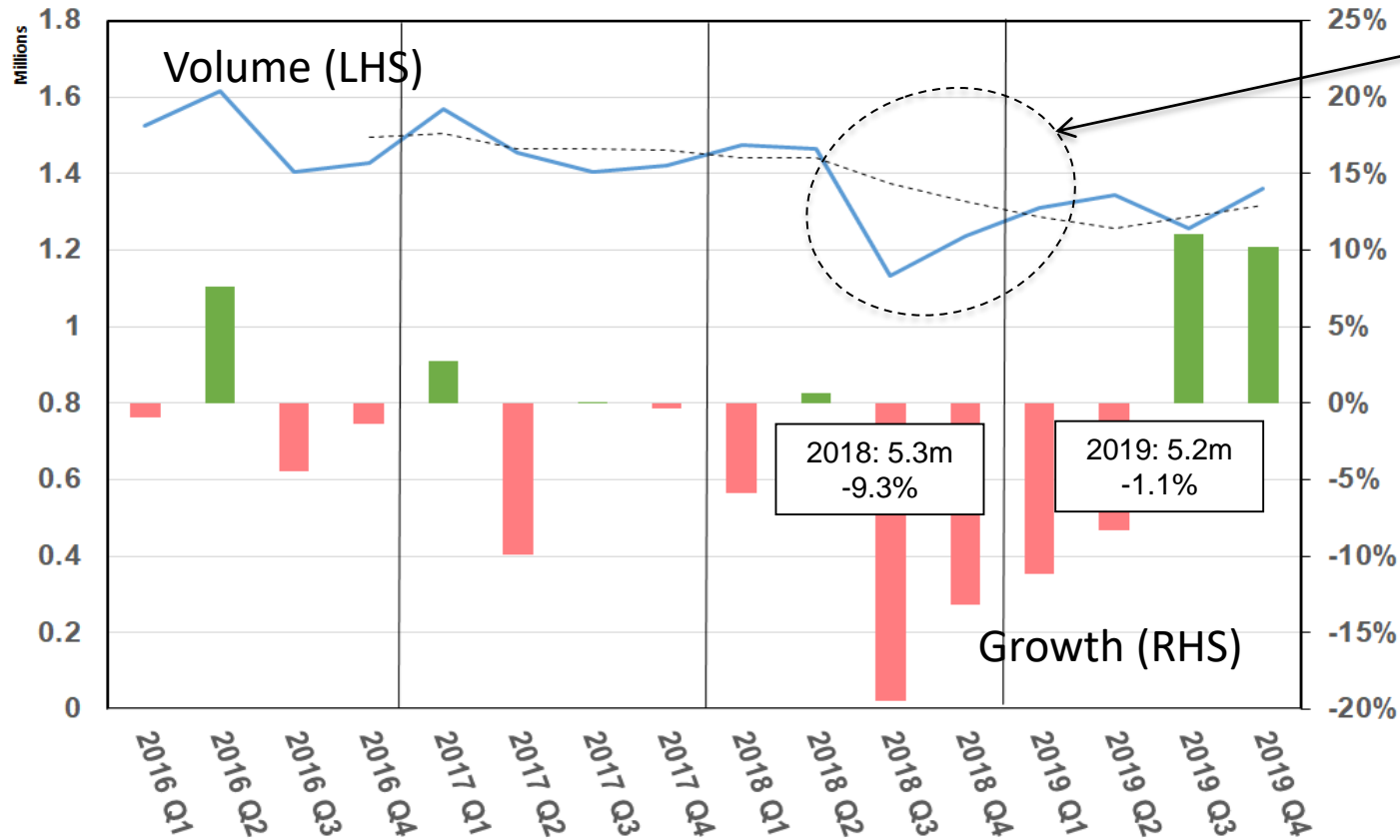


BASE forecast: Short-run LV Production Outlook:

European LV Production Growth (excluding Russia)



Europe: Short Run LV Production, Germany



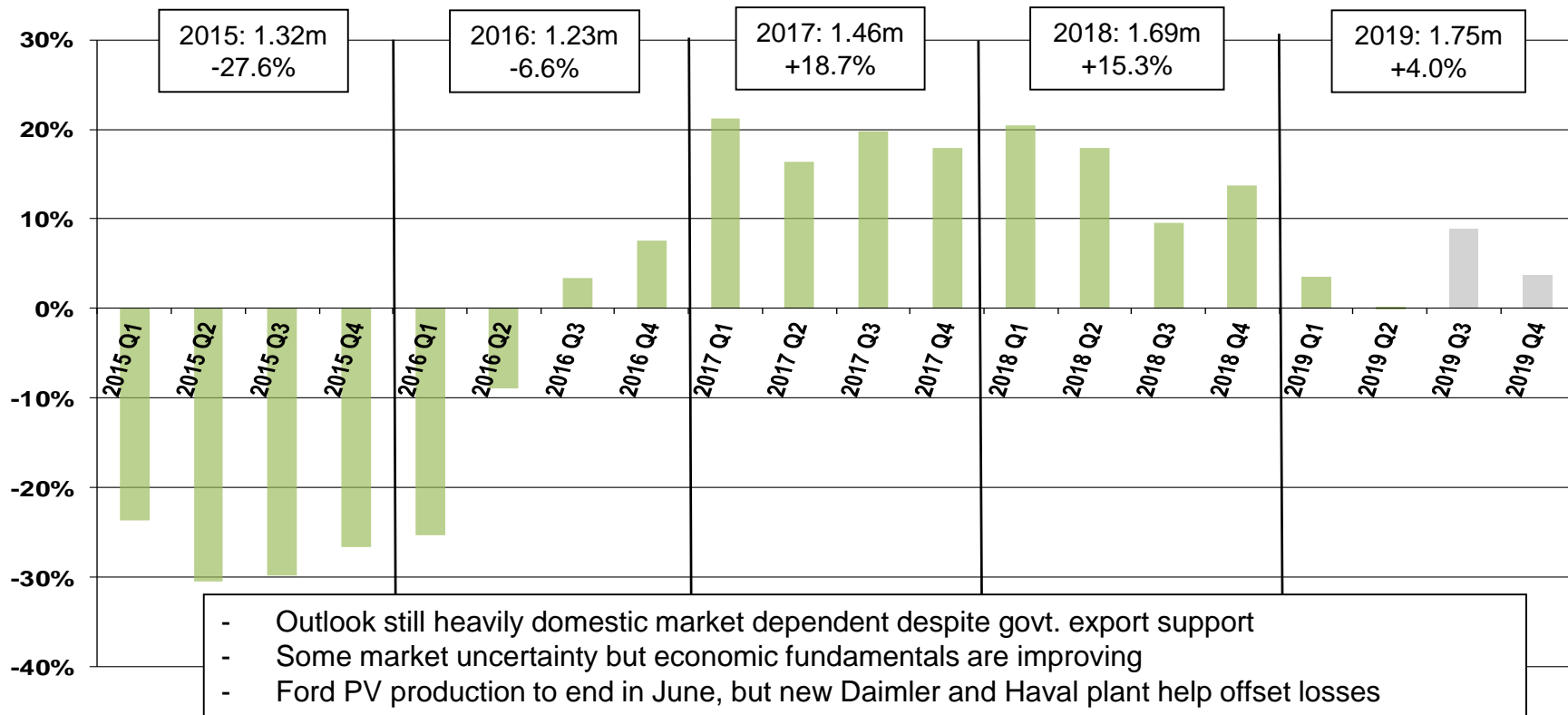
Worst quarterly run since 2009

Growth support in H2 2019 from base effects and some new model launch boosts ...

...Scale of 'Golf 8' delay?

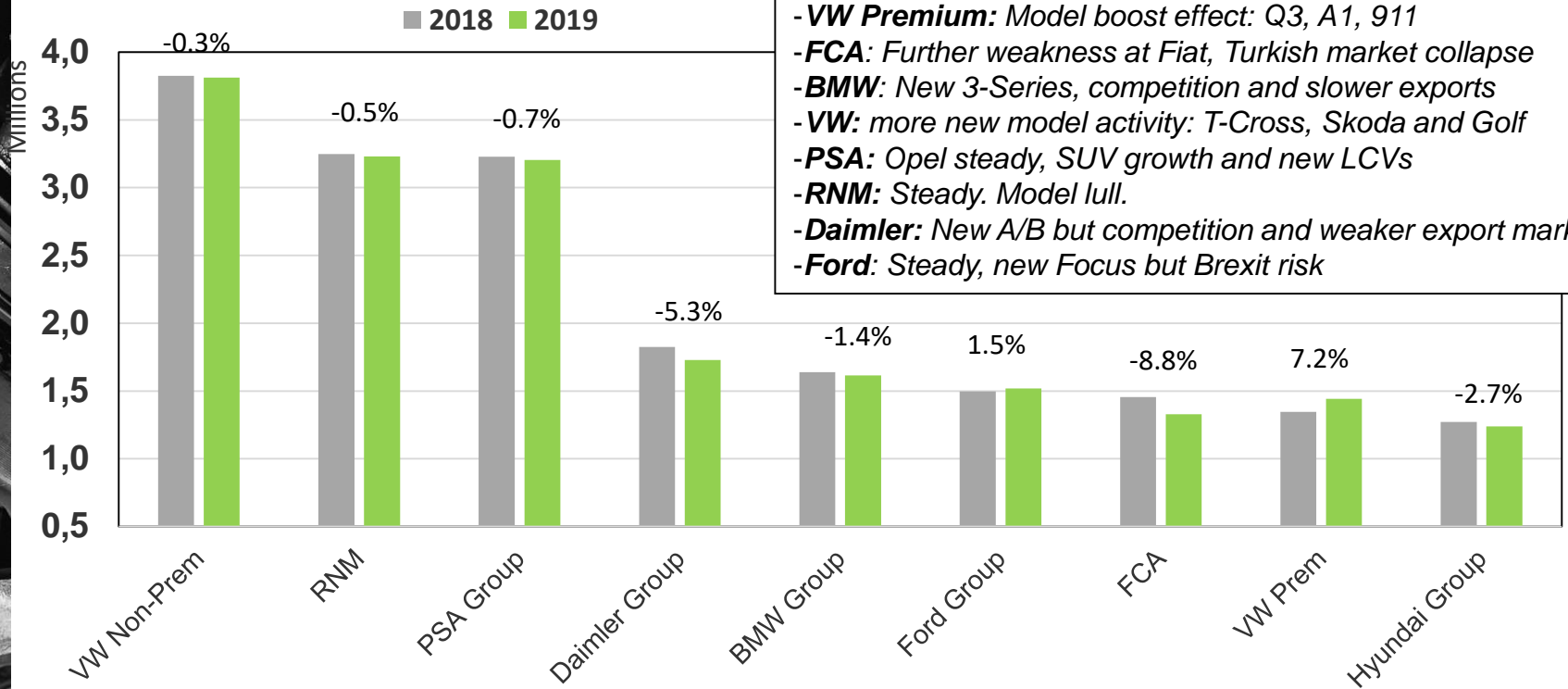
BASE Forecast: Short-run LV Production Outlook

Russian LV Production Growth



Base Forecast : Short Run OEM Production

Pan-European (inc. Russia) Production: key OEM Group 2019 v 2018



Selected OEMs with annual volume > 1mn units

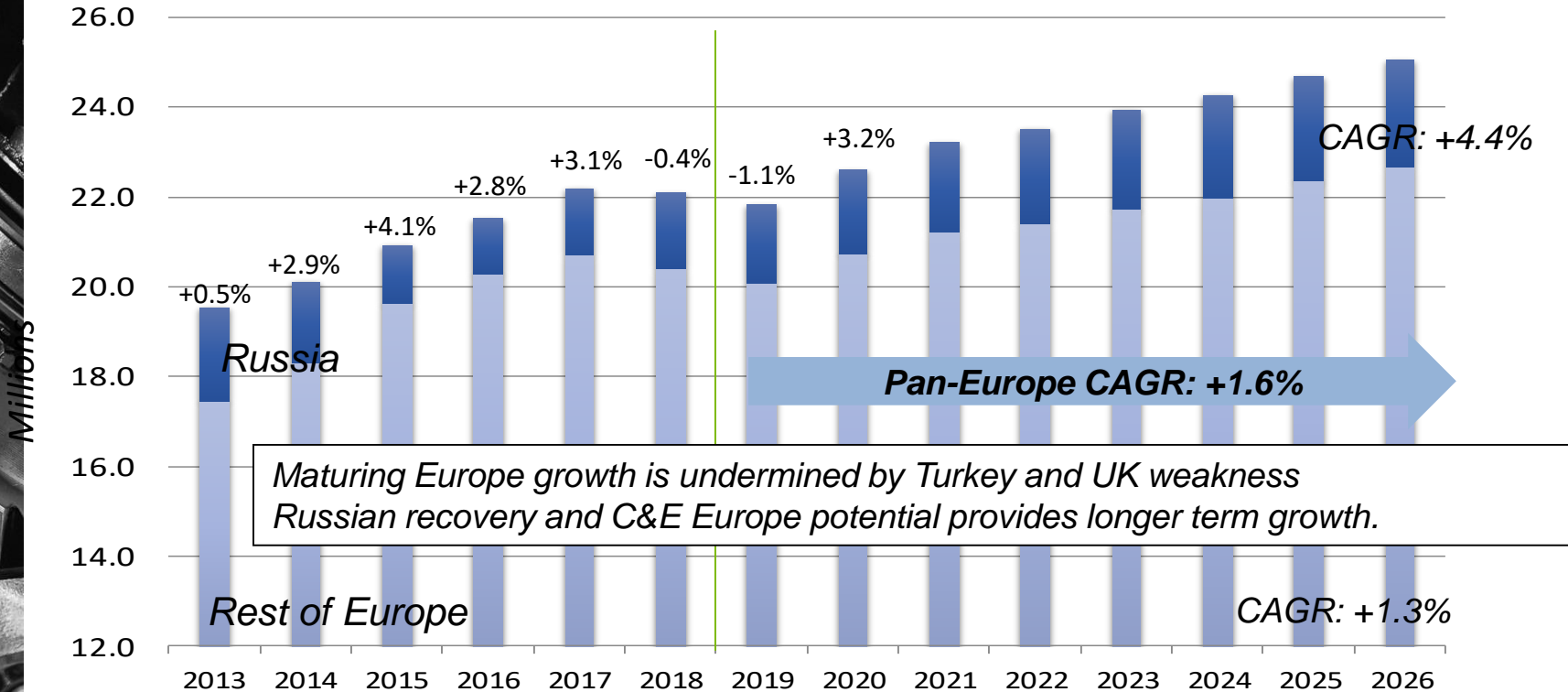


Looking a bit further out ...

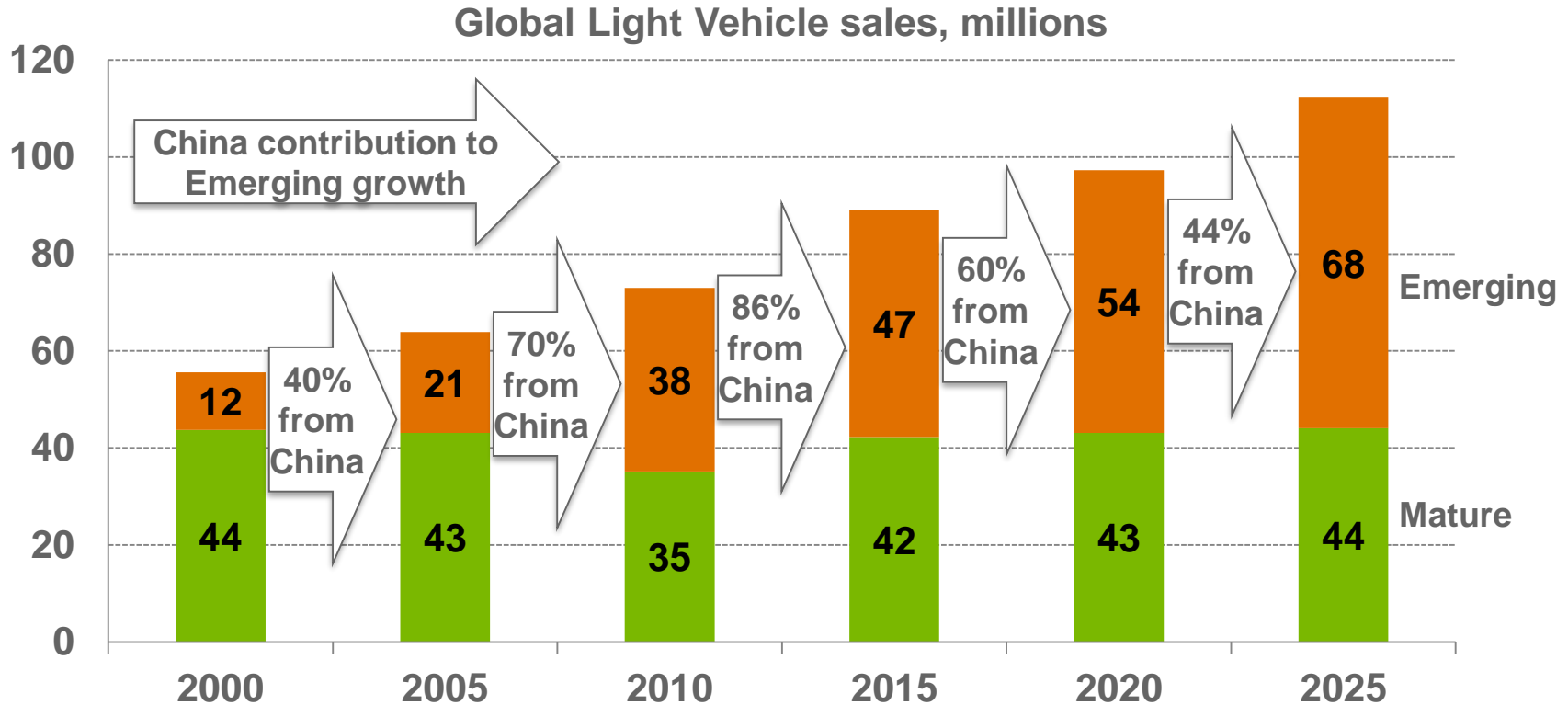


Medium Term Outlook: Base Scenario

Pan European Light Vehicle production



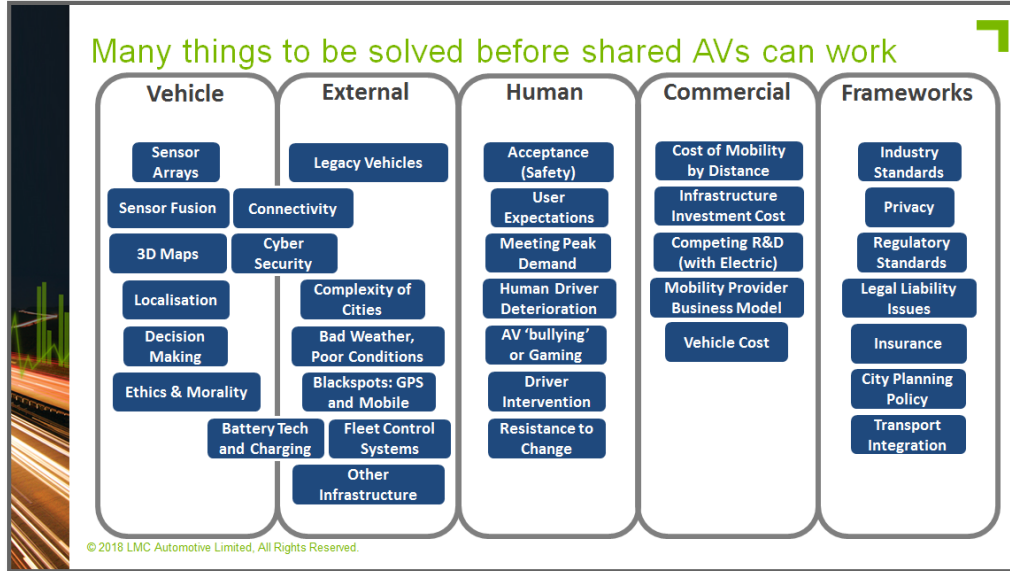
Global growth cannot come from mature markets



Autonomous Vehicle (AV) story getting even more complex

A year ago, it was already clear that there will be a mountain to climb to fulfil AV potential – though there has been no shortage of mountaineers.

Feb-18:



- Since then, it has not become much clearer how real-world deployment will actually happen.
- Testing will continue and develop in complexity.
- Policy and regulation will continue to increase focus.
- But there are major questions about returns on investment.
- Fragmentation and specialization appears likely.

World: China remains the biggest single BEV market

Global PV and US Light Truck market

2018 BEV Sales (000s)



In 2030:

18 mn total BEV sales
17% of global market
China: 39% of BEV total
48% vehicles have partial or complete electrification

2030 BEV Sales (millions)



In addition to model-level Hybrid & Electric vehicle forecasts to 2030, LMC now covers ...
Battery information: Type, Chemistry, Size (kWh), Cell count, Cell type, Pack voltage
eMotor: Type, Power, Torque



Concluding ...

- Global production is set to contract slightly in 2019, but risks to the outlook continue to grow on the downside.
- Changes to the trade environment, whether from US tariffs, Brexit or the EU-Japan accord have the potential to significantly undermine European LV production.
- European LV production growth in 2019 is expected to be characterised by a weak H1 and a stronger H2. Base effects from WLTP distortions underpin this.
- Shifts in powertrain demand away from diesel may generate continuing supply constraints altering competitiveness for those affected.
- Longer term, European LV output growth is driven by high-potential European markets, but transplant 'repatriation' plus off-shoring of low margin cars will provide a drag.
- High expectations for EVs are only beginning to be mirrored by model activity, but while OEMs need to offer the products, will consumers choose them?
- The impact of other advances in technology, especially in autonomy, has a substantial lead time. The sci-fi movie scenarios are years away.

A world map in shades of green and blue, overlaid with various data visualization elements. The word 'Production' is at the top, 'Forecasts' on the left, 'Markets' in the center, and 'Growth' at the bottom left. A bar chart with green and blue bars is positioned over the European continent. A circular icon with a gear and a leaf is also visible.

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Thank you