

Coronavirus and Beyond

European Vehicle & Supply Chain Outlook 2020-2030



Running order

- **Global crisis supply chain roundup**
- **European vehicle market monthly forecast 2020**
- **European vehicle demand forecast 2020-2030**
- **Major market snapshots: Germany, UK, France, Italy, Spain**
- **Covid-19 crisis impacts on vehicle logistics**
- **Q&A**



Global snapshot – Asian resilience



- Factories moving back towards normal levels
- Sales: February -80%, March -50%, April +4%
- Move to online sales & delivery process
- Global supplier risks and logistics disruption...
- China supply chain resilience has strengthened



- State of emergency – factory restart mid-May
- Supply risks out of south-east Asia – bigger risk is demand for exports
- Container & PCTC shipping lines bleeding red ink
- OEM acquisition of suppliers may accelerate



- Never went into lockdown
- Has faced disruption for parts and components but most production adjustments demand based
- Hyundai-Kia resilient – strong product push despite crisis



Global snapshot – American carnage



- Restart picking up pace during May after key state restrictions cleared in Michigan
- Significant logistics disruption – however capacity is available
- Pent-up demand could lead to vehicle shortages
- Significant risk of opening too soon



- Auto gets 'essential status' – restarts can begin
- Mexico a risk to US, some Europe supply
- Rail embargoes, cross-border uncertainty
- Possible delay of USMCA implementation



- FCA first OEM to begin re-opening
- Many other OEMs to remain shut until mid-June
- Brazil case and deaths rising significantly





European re-emergence. But to what?

- Restart of production partly synchronized and mostly smooth
- PPE and safety guidelines widely shared
- Some supply issues – could increase with supplier insolvencies
- Logistics network disruptions – but improving
- Online sales trend
- Dealers reopening, but slow demand and inventory still high
- Major questions over future plant capacity

A white SUV is shown on a multi-level car carrier truck. The truck is white with blue and yellow accents. The SUV is on the top level of the carrier. The background is a bright, sunny outdoor setting.

Covid-19 crisis vehicle supply chain challenges

- **High inventory levels and temporary storage challenges**
- **Logistics network disruptions: cross-border, shipping, service levels**
- **Low capacity and transport asset utilization**
- **Liquidity crunch especially for outbound logistics providers**
- **Implementing social distancing, PPE and prevention processes**
- **Forecasting and demand planning – disjoint between plans, EDI, reality**

European Automotive Forecast 2020-2030

The Impact of the Coronavirus Pandemic

Definitions

Market Scope

- 25 European countries as defined by ACEA (UK+EU minus Malta and Cyprus).
We individually forecast the top 5.

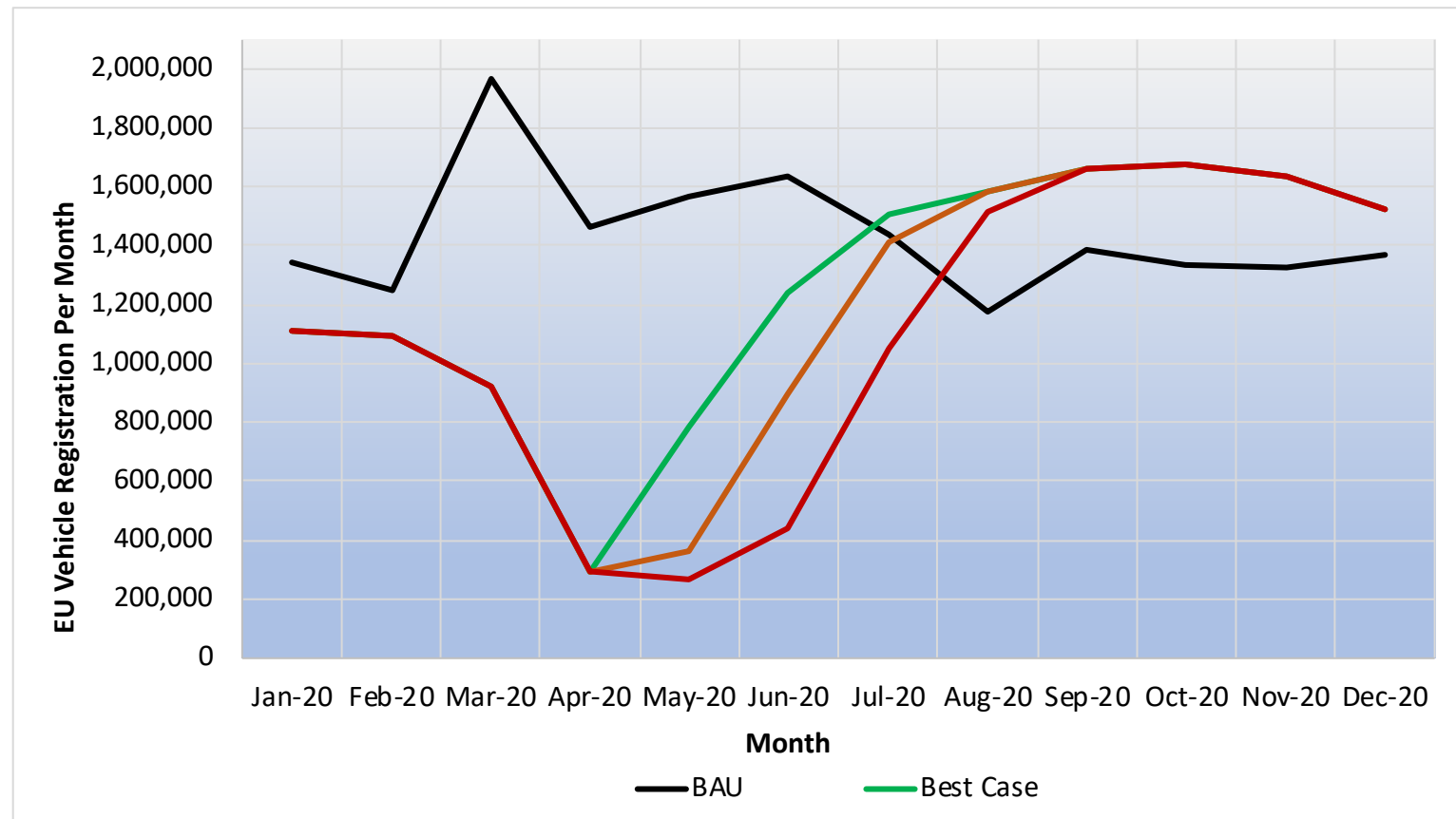
Vehicle types included

- Volumes = Passenger cars (PC) + commercial vehicles (CV)

Terminology of scenarios

- **BAU** = Business As Usual (our forecast had the Coronavirus pandemic not occurred)
- **Best case** = the most optimistic outlook
- **Base case** = the most likely outcome
- **Worst case** = the most pessimistic outlook

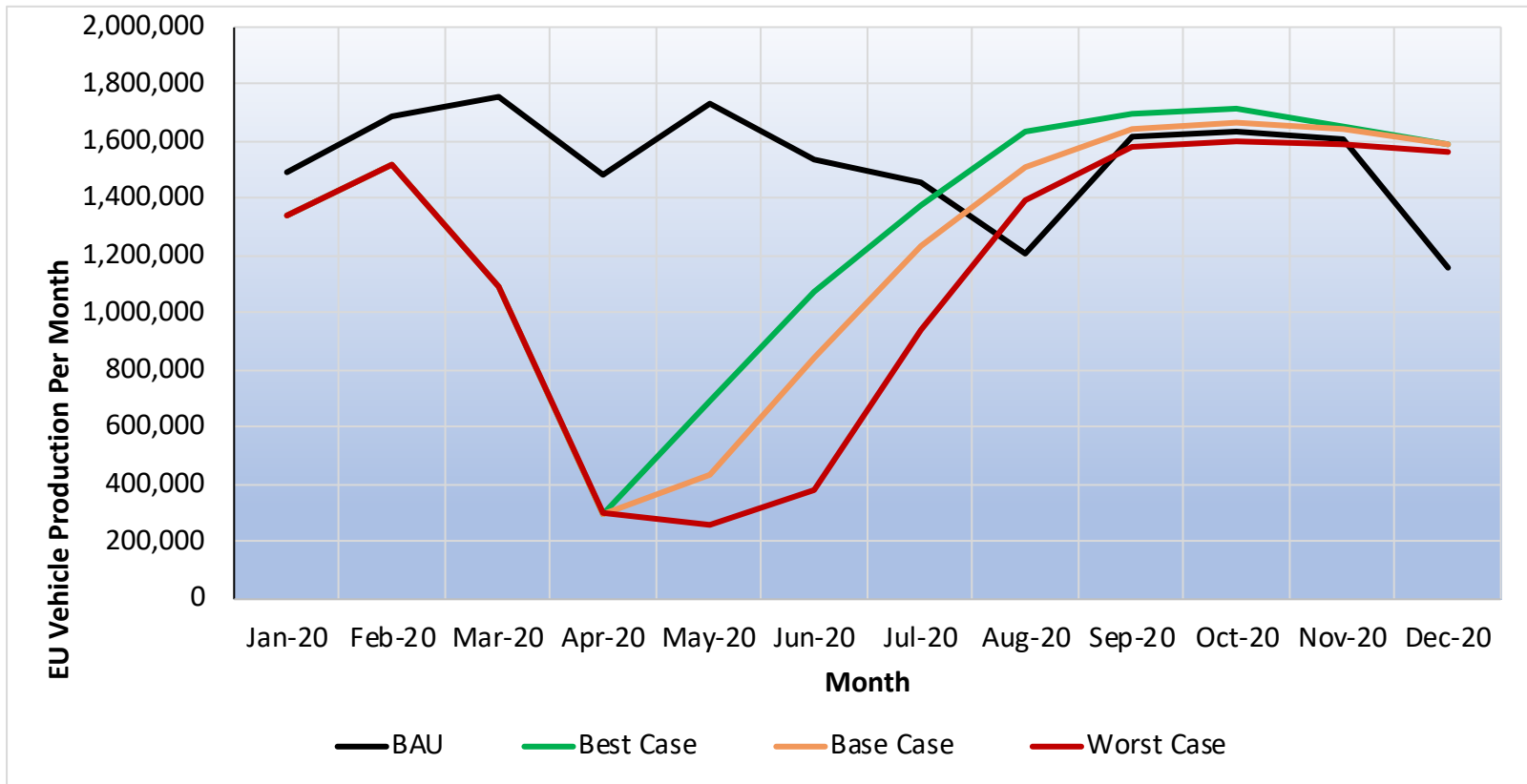
European Vehicle Demand Monthly Forecast 2020



- In March, demand fell by -52.9% YoY.
- In April, demand fell by -80% YoY.
- In all three scenarios demand will fall dramatically.
- Only by July / August do we expect to see volumes returning to normal.
- The rebound will be due to pent-up demand and possible government stimulus schemes later in the year.
- But after the rebound, volumes will fall back to lower levels in 2021.

- BAU 2020 volumes = 17.24 million units
- Best Case 2020 = 15.04 million units, a fall of -2.20 million units, -12.8% from BAU (-14.7% from 2019)
- Base Case 2020 = 14.17 million units, a fall of -3.07 million units, -17.8% from BAU (-19.6% from 2019)
- Worst Case 2020 = 13.19 million units, a fall of -4.05 million units, -23.5% from BAU (-25.2% from 2019)

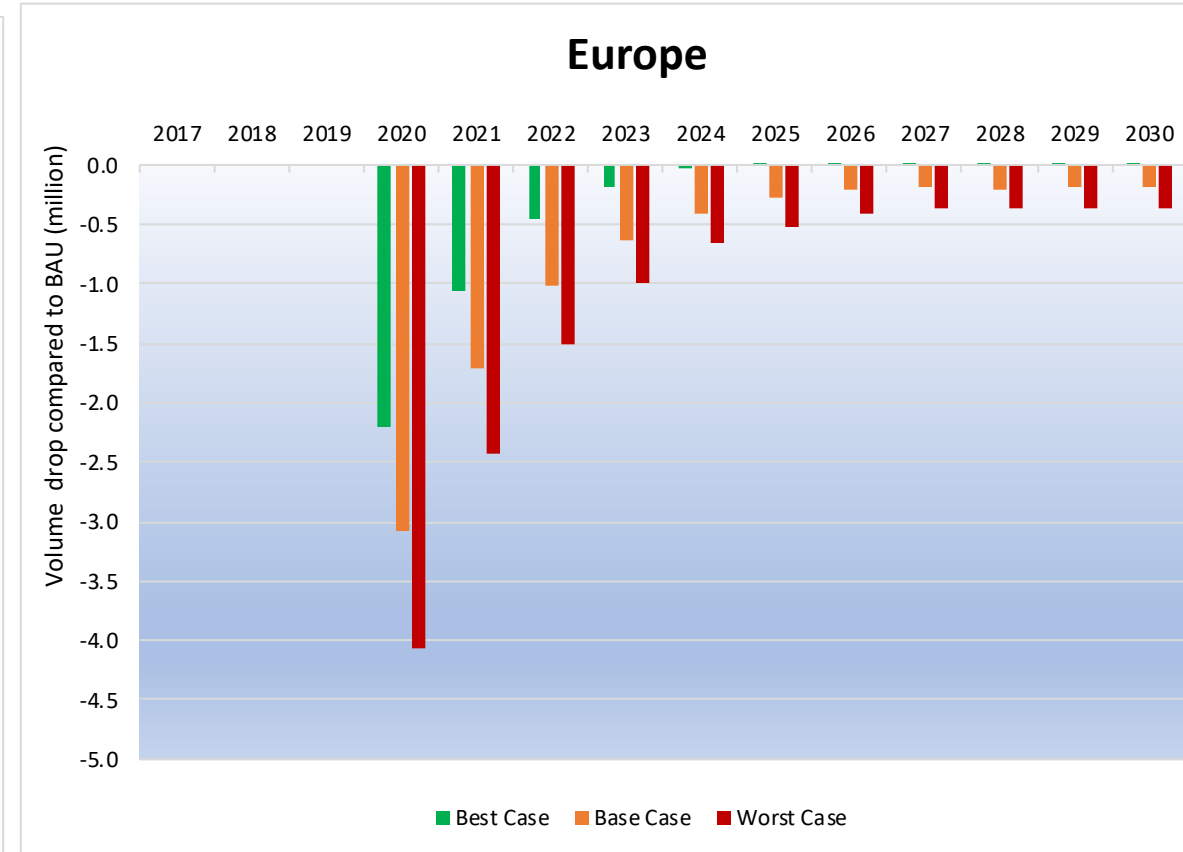
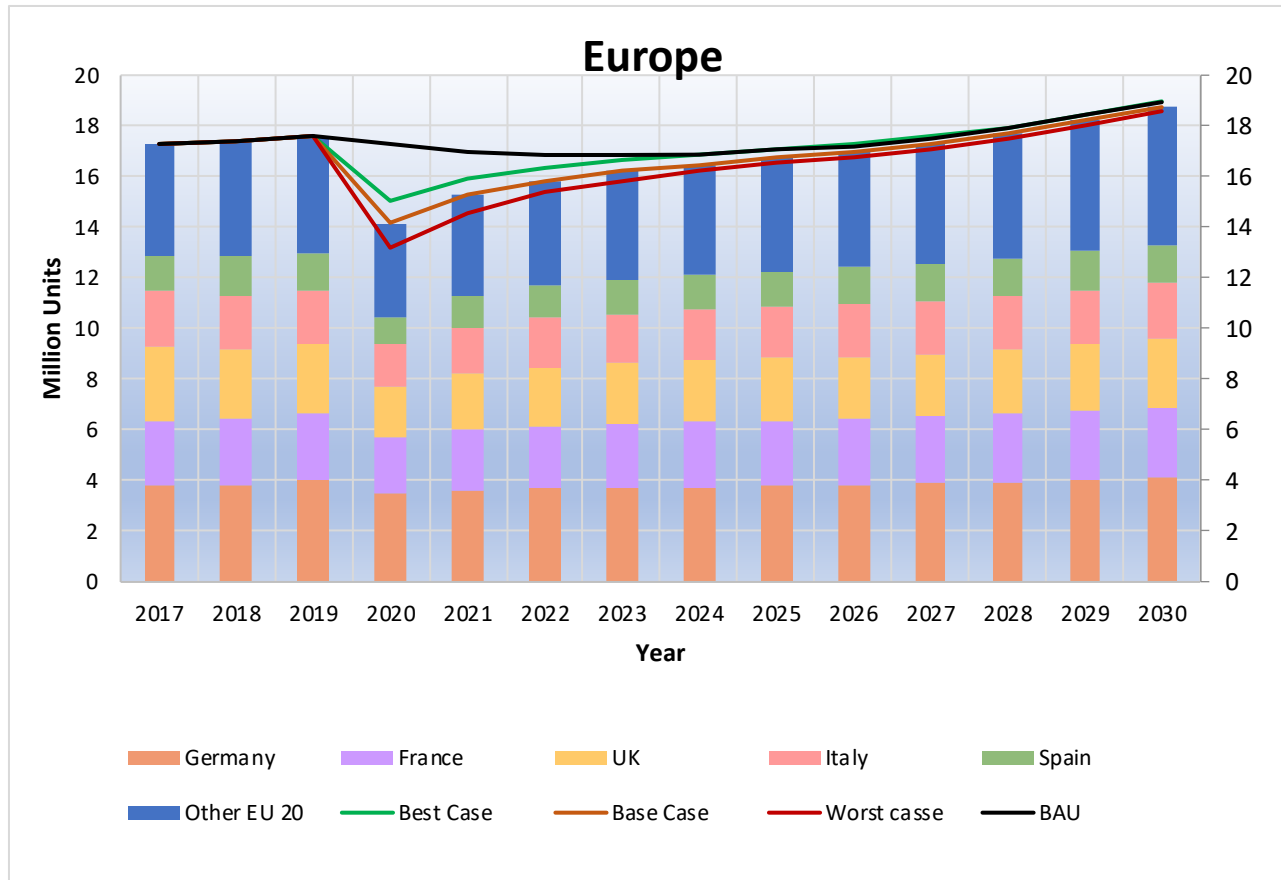
EU Vehicle Production Monthly Forecast 2020



- March EU production down -37.6%.
- April EU production down -80%.
- Production ~2% lower than corresponding demand scenario in 2020 due to:
 - Very high inventory levels at plants, compounds, ports, etc.
 - Social distancing , PPE, unwell staff self-isolating all reducing production.
- Some OEMs stating that they will only “build to order”.

- BAU 2020 = 18.36 million units
- Best Case 2020 = 15.35 million units, a fall of -2.68 million units, -14.6% from BAU (-16.3% from 2019)
- Base Case 2020 = 14.81 million units a fall of -3.55 million units, -19.3% from BAU (-21.0% from 2019)
- Worst Case 2020 = 13.56 million units, a fall of -4.79 Million units, -26.1% from BAU (-27.6% from 2019)

EU Vehicle Demand Forecast 2020-2030



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
BAU	17.25	17.35	17.63	17.24	17.02	16.85	16.85	16.89	17.05	17.21	17.49	17.90	18.41	18.93
Best case	17.25	17.35	17.63	15.04	15.96	16.39	16.66	16.86	17.05	17.27	17.56	17.93	18.44	18.97
Volume + / -	0.0	0.0	0.0	-2.2	-1.1	-0.5	-0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Base Case	17.25	17.35	17.63	14.17	15.30	15.85	16.21	16.49	16.77	17.01	17.30	17.70	18.21	18.74
Volume + / -	0.0	0.0	0.0	-3.1	-1.7	-1.0	-0.6	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
Worst case	17.25	17.35	17.63	13.19	14.60	15.35	15.86	16.23	16.52	16.80	17.13	17.53	18.06	18.58
Volume + / -	0.0	0.0	0.0	-4.1	-2.4	-1.5	-1.0	-0.7	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4

Europe Analysis

Global Context

- Due to the impact of the Coronavirus pandemic ECG forecasts that automotive sales will fall by -15% in 2020.
- To put that in context, that is nearly twice the magnitude of the -8% fall after the financial crash of 2008/2009.

Europe Demand Outlook

- The -19.6% drop in European vehicle sales volumes shows the contraction is more severe than the global average.
- BAU 2020 volumes = 17.24 million units
- Best Case 2020 = 15.04 million units, a fall of -2.20 million units, -12.8% from BAU (-14.7% from 2019)
- Base Case 2020 = 14.17 million units, a fall of -3.07 million units, -17.8% from BAU (-19.6% from 2019)
- Worst Case 2020 = 13.19 million units, a fall of -4.05 million units, -23.5% from BAU (-25.2% from 2019)

Europe Export Outlook

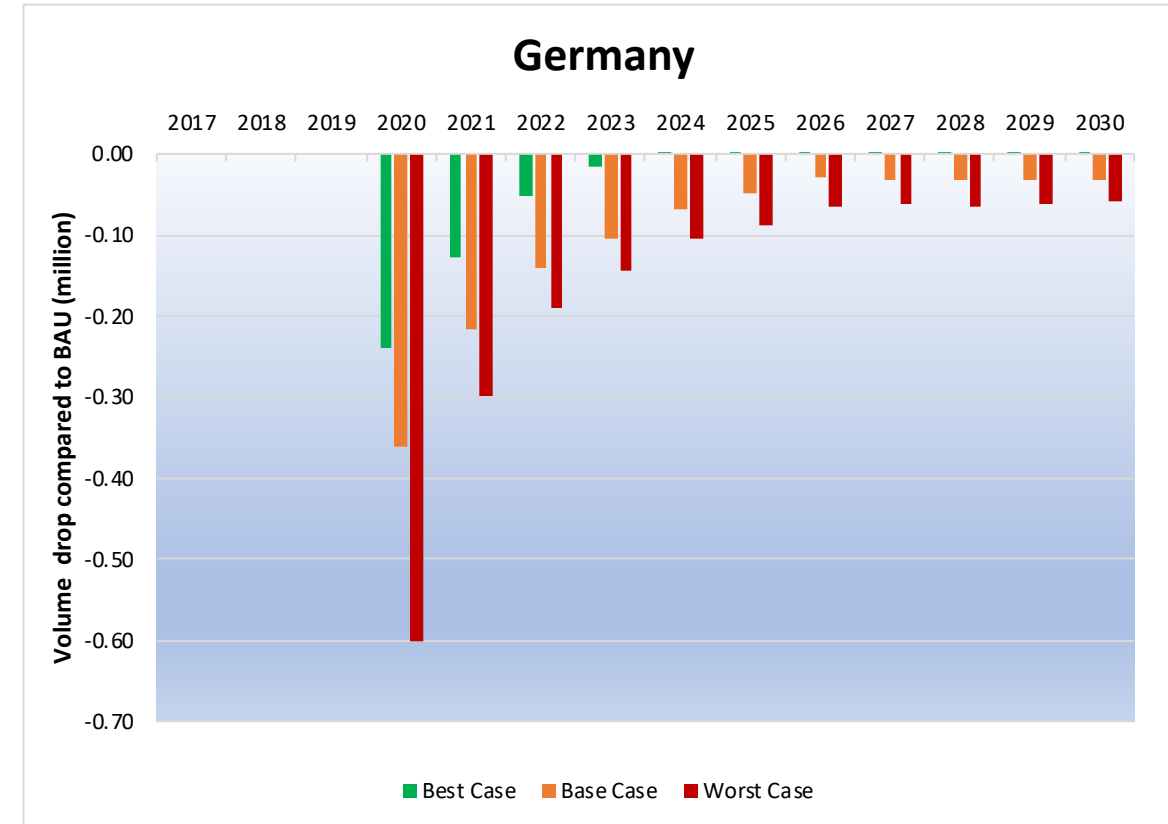
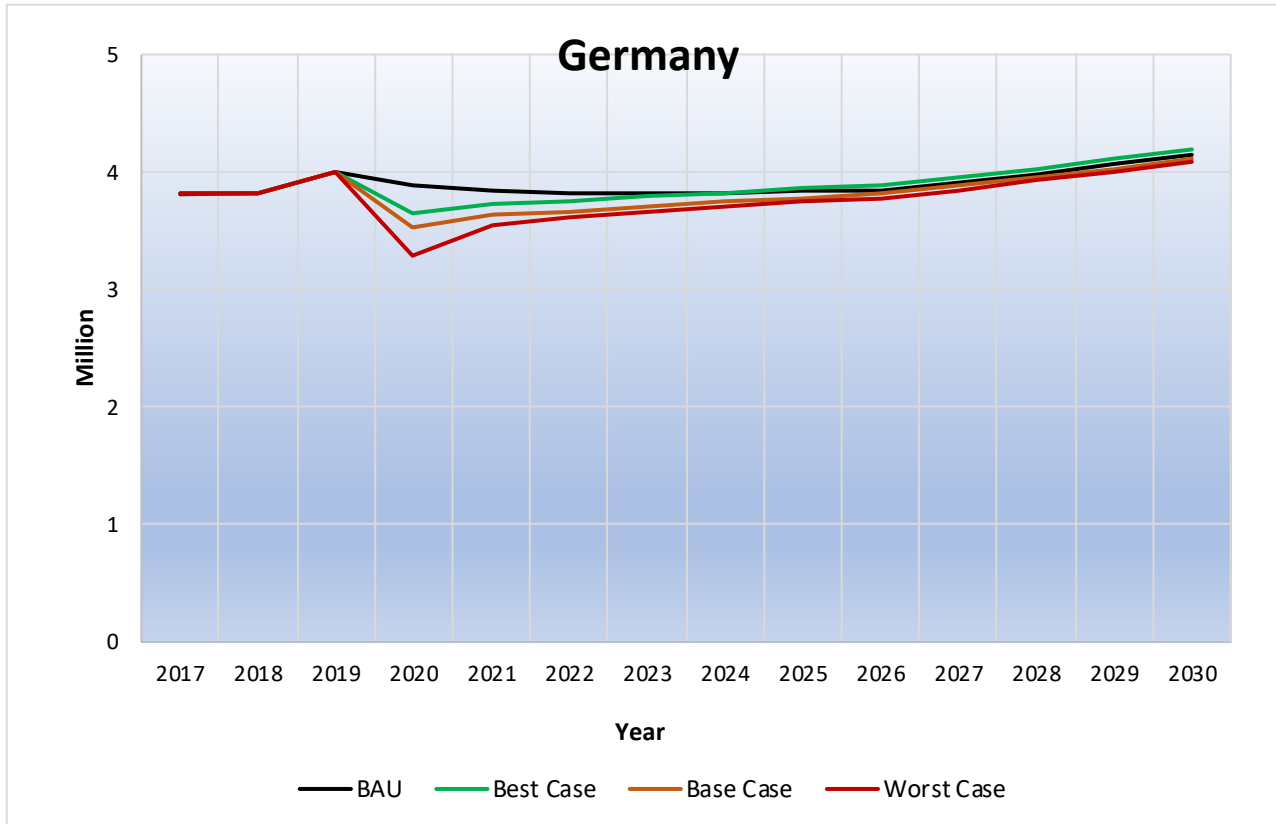
- 2019 Production (PC+CV) 19.2 million units, with total exports 6.1 million units – significant fall likely
- 2019 exports to US 1.17 million units. (2020 US forecast: -16.0% fall in volumes)
- 2019 Exports to China 561,662 units. (2020 China forecast: -13.9% fall in volumes)
- 2019 Exports to Turkey 315,267 units (Turkish demand likely to fall in line with Europe).

Variation by Country

Factors considered in our analysis

- **Length** and **Strictness** of lockdown.
- **Time** periods that car dealerships have been closed.
- **Online / Digital** sales.
- **Macroeconomics** – GDP fall, job losses, government employment programmes (i.e. furloughing)
- **Government stimulus**– scrappage schemes, tax incentives, subsidies – most likely to be linked to low emission vehicles
- **Consumer confidence** – what demand remains after the fallout? – savings depleted / disposable incomes hit hard.

Germany Vehicle Demand Forecast 2020-2030



- BAU 2020 = 3.89 million units
- Best Case 2020 = 3.65 million units, a fall of -240,000 units, -6.2% from BAU (-9.0% from 2019)
- Base Case 2020 = 3.53 million units, a fall of -360,000 units, -9.3% from BAU (-12.0% from 2019)
- Worst Case 2020 = 3.29 million units, a fall of -600,000 units, -15.5% from BAU (-18.0% from 2019)

Germany Analysis

Lockdown period

- In terms of car dealerships, the lockdown was 16th March – 20th April (5 weeks). Many restrictions in place limiting consumers movements. Since the lifting of the lockdown measures, Germany's "R" value has risen raising concerns of a second peak.

Automotive Growth Drivers

- Purchase incentives for most EVs & PHEVs of between €4,500 and €6,000 supporting growth in segment
- Government stimulus – decision postponed to at least June.
- Commuters concerned about using public transport may become a growth driver for vehicle sales.

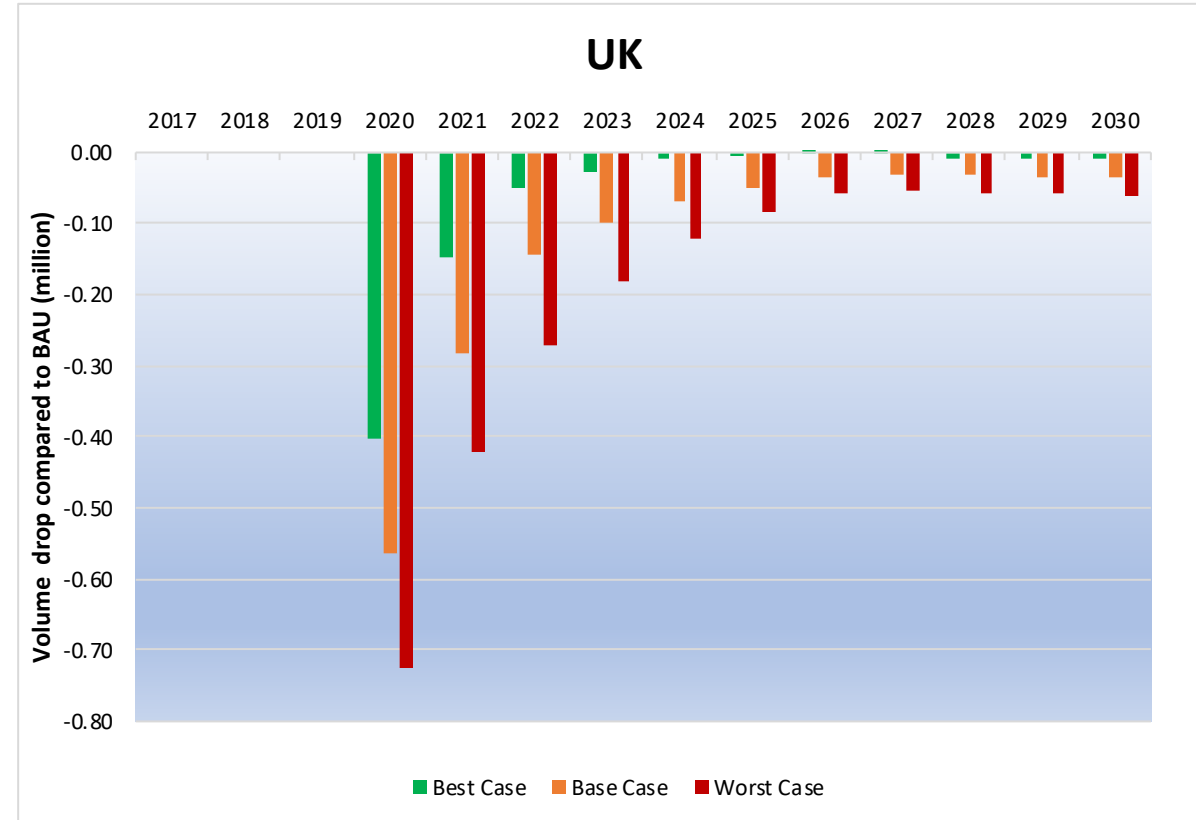
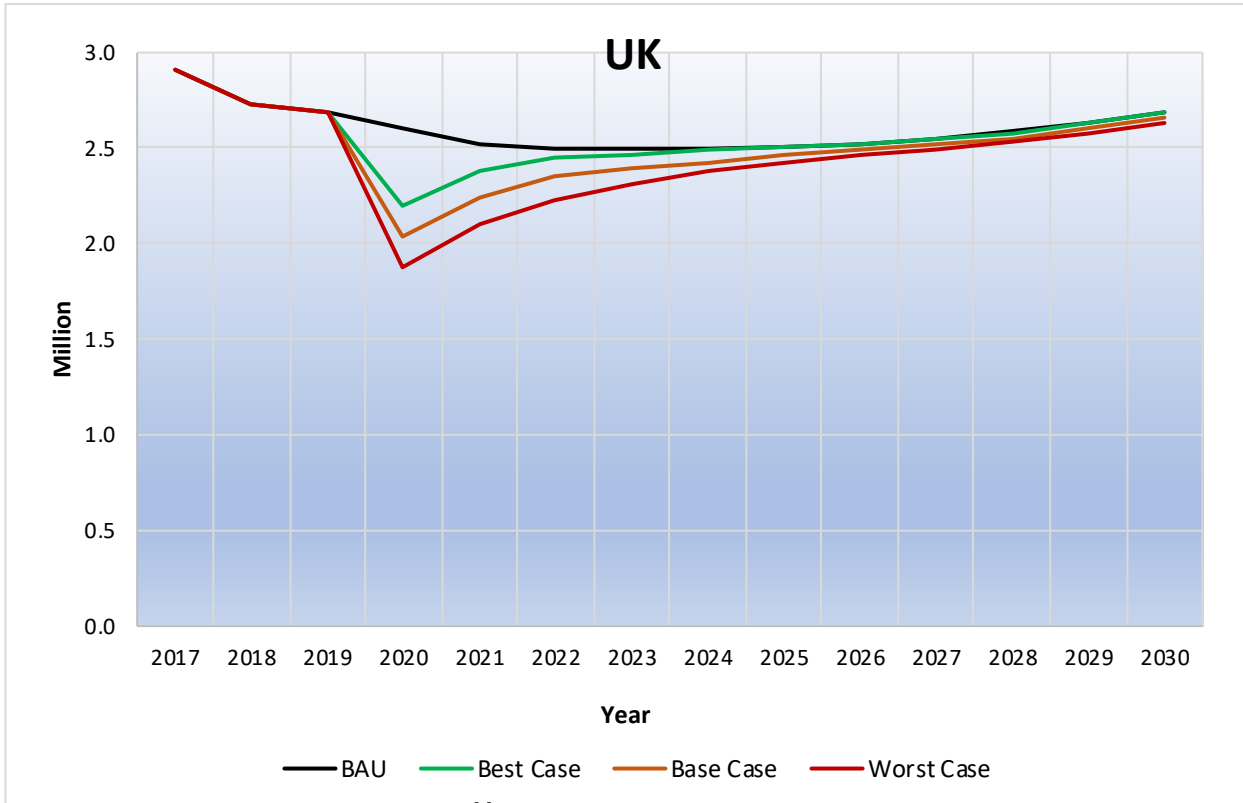
Automotive Headwinds

- Germany's GDP is expected to contract by -9.8% in Q2 2020. GDP for 2020 is expected to contract by -4.2% and grow by 5.8% in 2021.
- EU CO2 emissions targets and fines.
- Germany's economy is heavily export driven, including automotive, so domestic economic recovery is inextricably linked with vehicle exports.

Automotive Export Outlook

- 2019 Production (PC+CV) 4,947,311 units, of which 3,699,130 units.
- 58% of those exports go to the EU, 19% of exports go to Asia and 12% of exports go to US.

UK Vehicle Demand Forecast 2020-2030



- BAU 2020 = 2.6 million units
- Best Case 2020 = 2.2 million units, a fall of -400,000 units, -15.5% from BAU (-18.0% from 2019)
- Base Case 2020 = 2.04 million units, a fall of -560,000 units, -21.6% from BAU (-24.0% from 2019)
- Worst Case 2020 = 1.88 million units, a fall of -720,000 units, -27.8% from BAU (-28.0% from 2019)

UK Analysis

Lockdown period

- In terms of car dealerships, the lockdown will be from 24th March – 1st June at the earliest (10 weeks).
- Many other restrictions remain in place limiting consumers movements.

Automotive Growth Drivers

- More hybrids & EVs are on the market, and EV sales in particular appear to be holding up much better than overall sales.
- Post COVID, there are likely to be government incentives such as vehicle scrappage schemes, or purchase subsidies for low emission vehicles.
- Commuters concerned about using public transport may become a growth driver for vehicle sales.

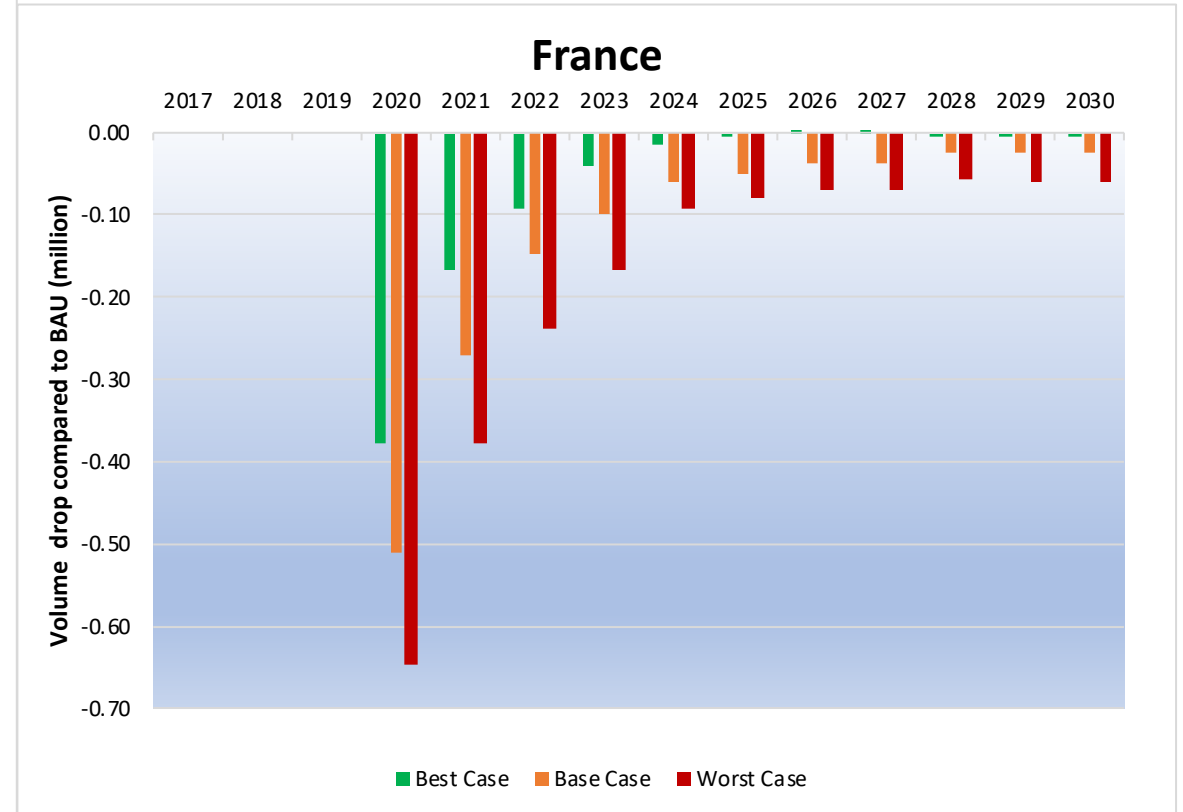
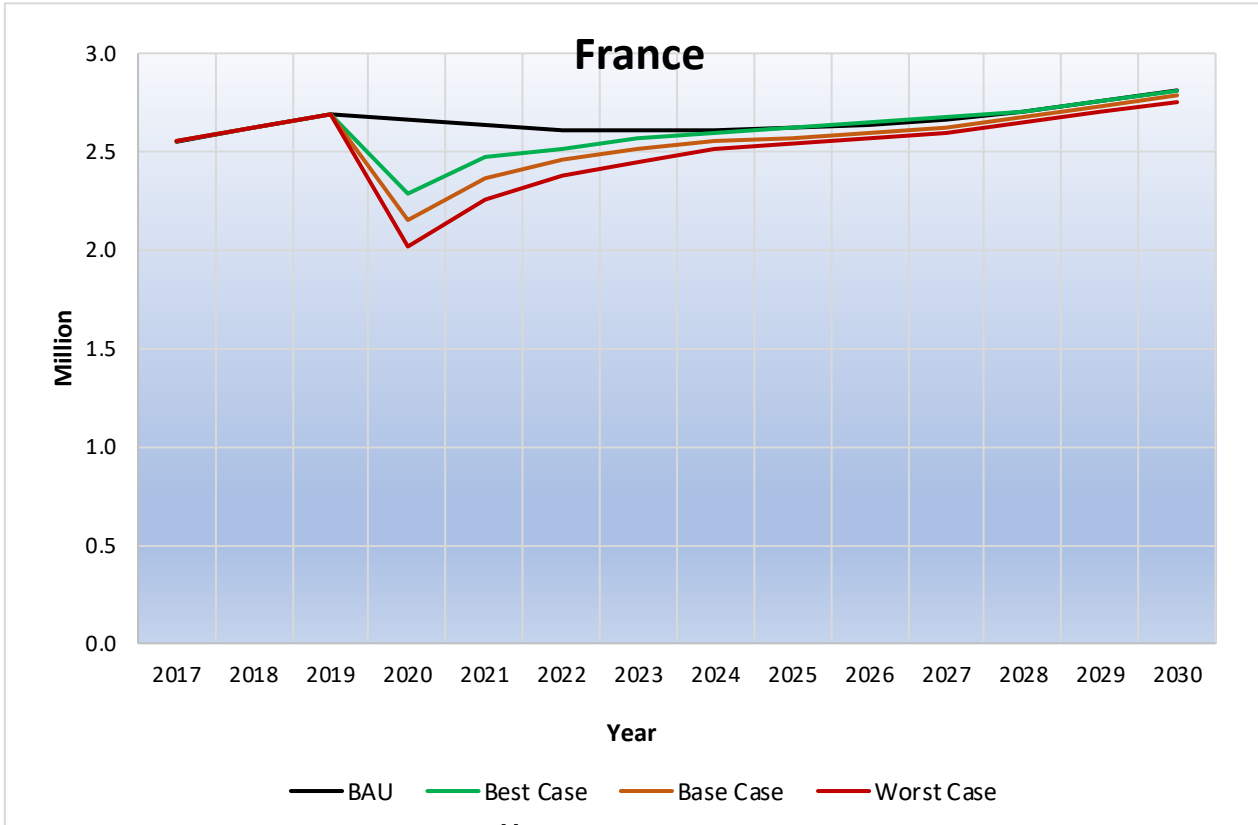
Automotive Headwinds

- Brexit: under almost any scenario, will result in economic lower economic growth.
- Currency depreciation has made vehicle imports more expensive.
- GDP is expected to fall by -14% in 2020 (however, current forecasts are for bounce back in 2021 by 15%).
- EU CO2 emissions targets and fines.
- Collapse in demand for diesel

Export Outlook

- 2019 Production (PC+CV) =1,378,000 units, of which 1,050,000 were exported (55% EU, 18.9% US, 5.3% China)

France Vehicle Demand Forecast 2020-2030



- BAU 2020 = 2.66 million units
- Best Case 2020 = 2.29 million units, a fall of -380,000 units, -14.1% from BAU (-15.0% from 2019)
- Base Case 2020 = 2.15 million units, a fall of -510,000 units, -19.2% from BAU (-20.0% from 2019)
- Worst Case 2020 = 2.02 million units, a fall of -650,000 units, -24.2% from BAU (-25.0% from 2019)

France Analysis

Lockdown period

- In terms of car dealerships, the lockdown was from 16th March – 11th May (8 weeks). Of course, even if that happens, many other restrictions remain in place limiting consumers movements.

Automotive Growth Drivers

- Pre-COVID, France's vehicle sales had been steadily increasing from 2.55 million in 2017 to 2.69 million in 2019, demonstrating strong underlying demand.
- OEMs are lobbying the French government for industry stimulus such as scrappage schemes, but government have said possibly in September.
- Commuters concerned about using public transport may become a growth driver for vehicle sales.

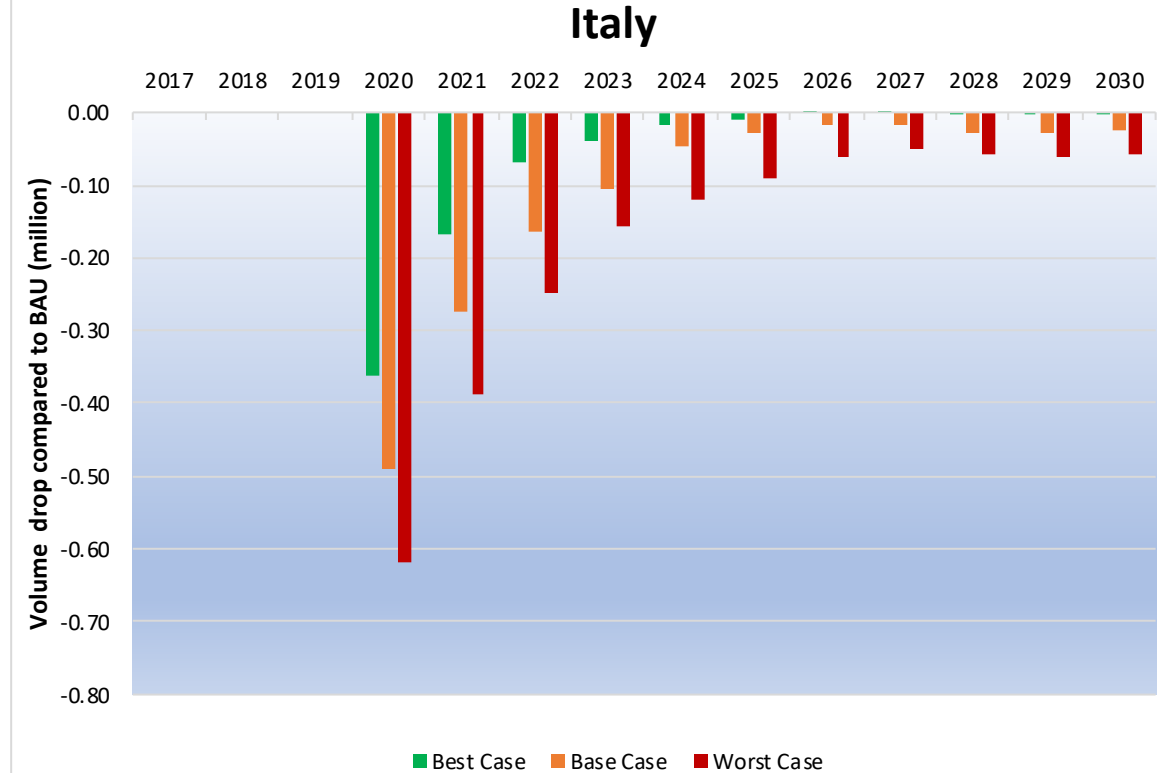
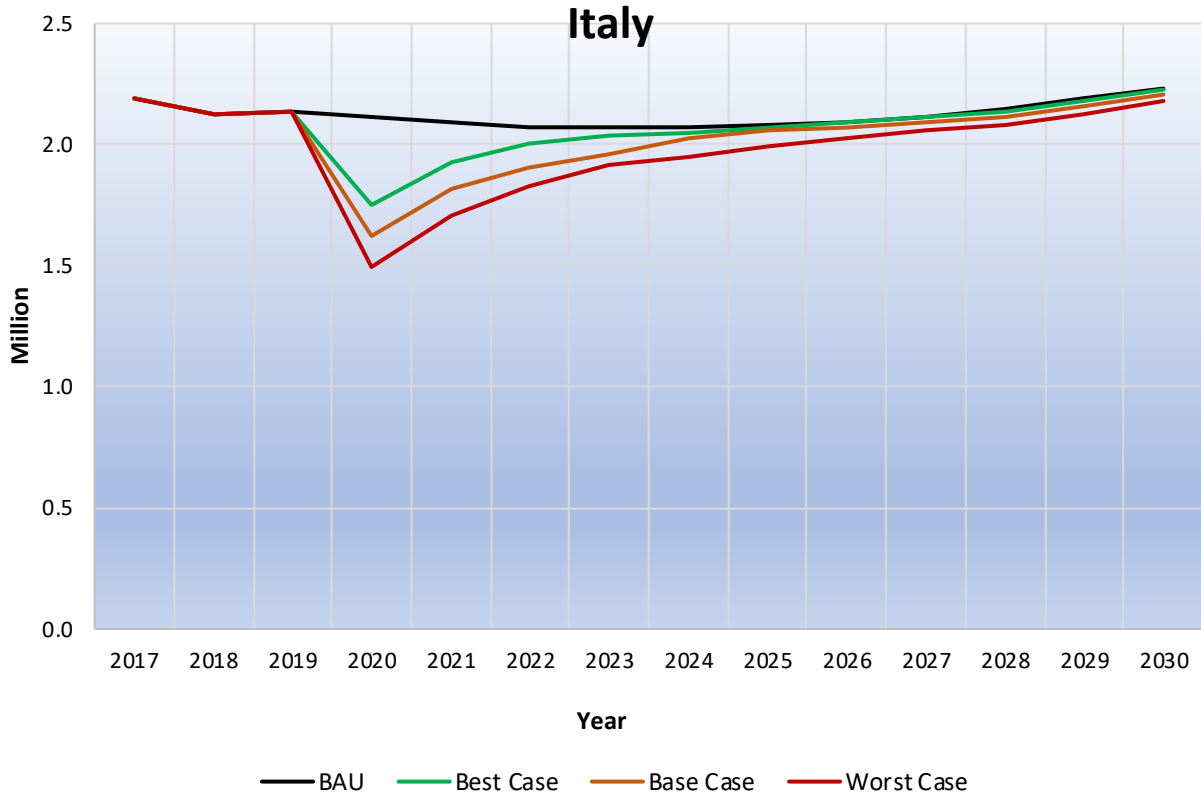
Automotive Headwinds

- The French government have predicted a -6% fall in GDP for 2020.
- France is one of the most successful market for P2P (Peer-to-peer) car sharing in Europe with more than 1 million users in 2018, impacting demand.
- Collapse in demand for diesel vehicles due to 'dieselgate' with diesel share quite high in France.
- EU CO2 emissions targets being phased in for 2020 for all OEMs increasing the cost of vehicles and also hampering sales.

Export Outlook

- 2019 production (PC+CV) = 2,202,460 units, of which 1,583,302 units were exported
- Main export destinations are in Europe and especially hard-hit southern Europe

Italy Vehicle Demand Forecast 2020-2030



- BAU 2020 = 2.11 million units
- Best Case 2020 = 1.75 million units, a fall of -360,000 units, -17.2% from BAU (-18.0% from 2019)
- Base Case 2020 = 1.62 million units, a fall of -490,000 units, -23.2% from BAU (-24.0% from 2019)
- Worst Case 2020 = 1.49 million units, a fall of -620,000 units, -29.3% from BAU (-30.0% from 2019)

Italy Analysis

Lockdown period

- In terms of car dealerships, the lockdown was from 9th March – 4th May (8 weeks).

Automotive Growth Drivers

- Commuters concerned about using public transport may become a growth driver for vehicle sales.

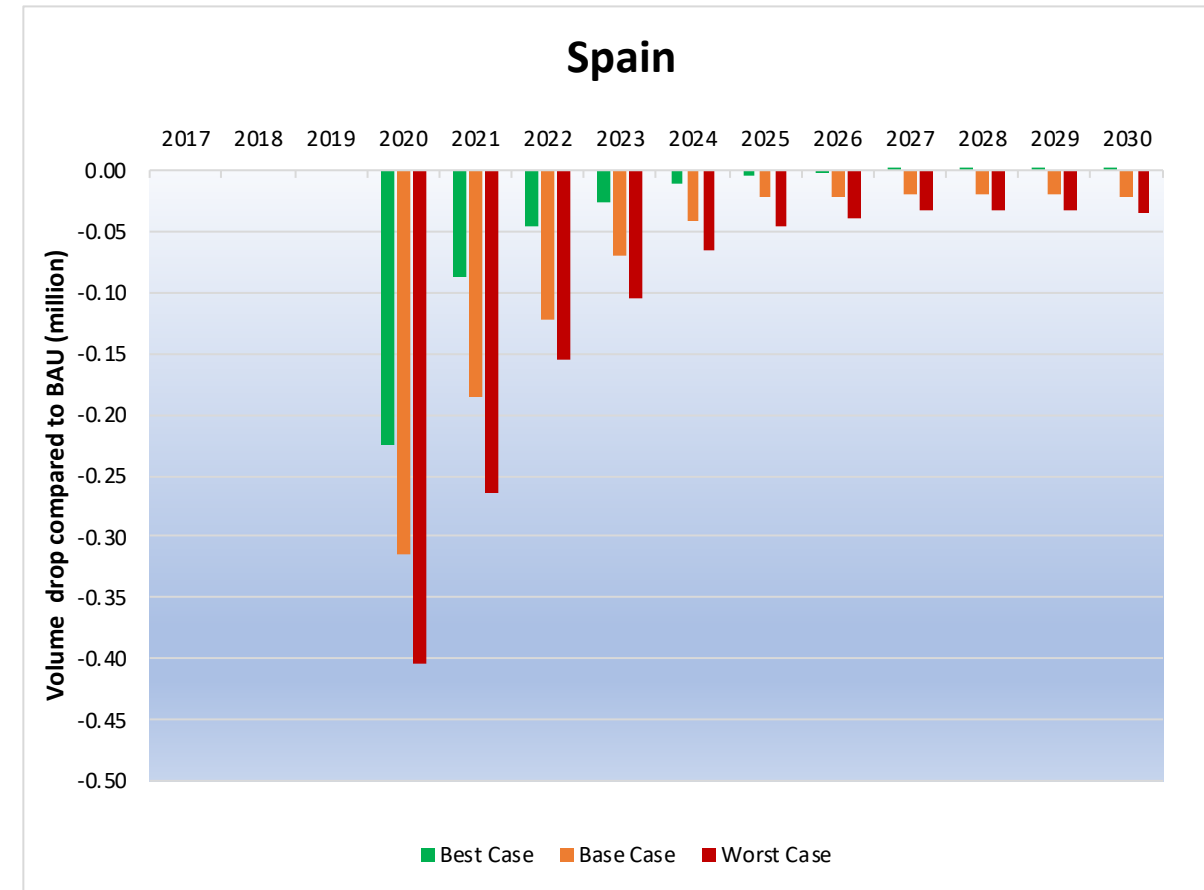
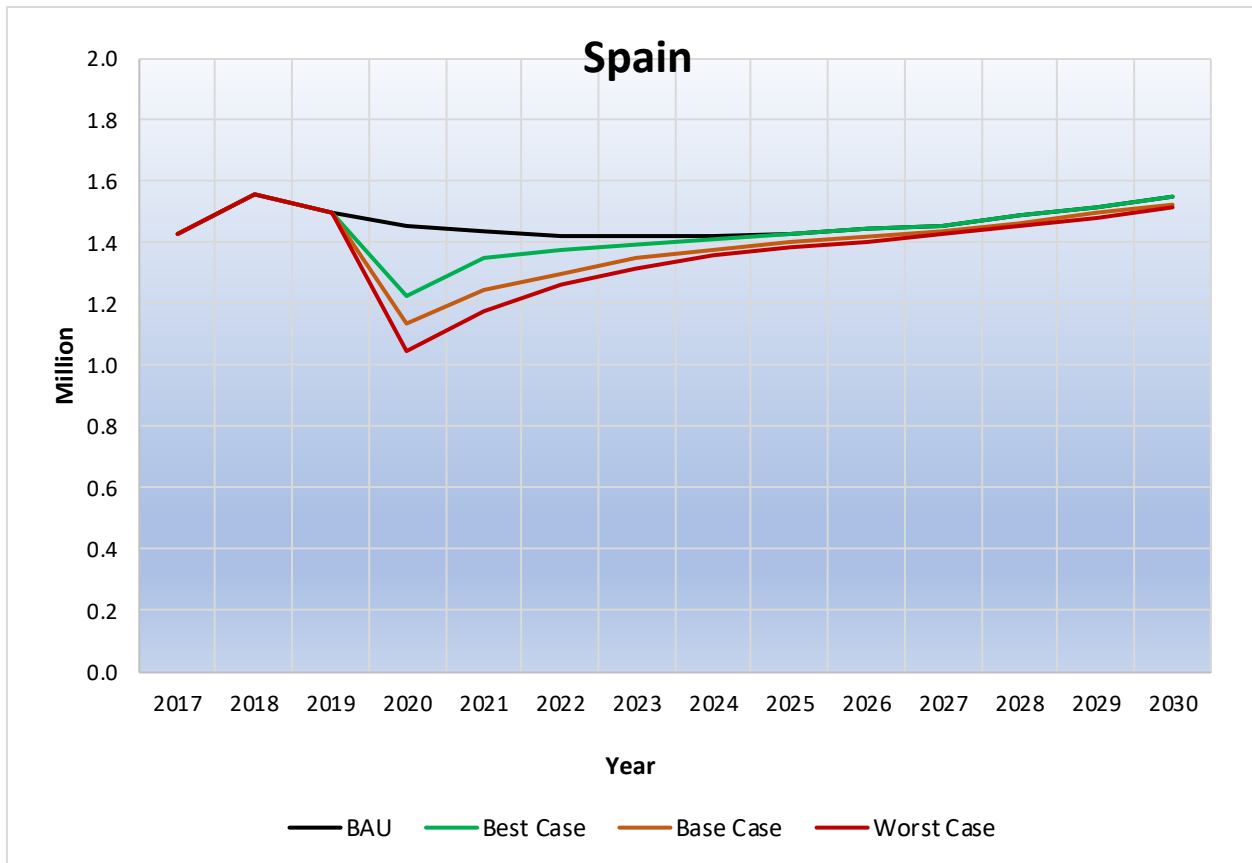
Automotive Headwinds

- It is predicted that there will be a -9.5% fall in GDP for 2020.
- Pre COVID-19, Italy's vehicle market was in decline and fell from 2.19 million in 2017 to 2.13 million in 2019.
- Very high national debt, and weak public finances means there is likely to be very little scope for auto industry economic stimulus.
- EU CO2 emissions targets being phased in for 2020 for all OEMs increasing the cost of vehicles and also hampering sales.

Export Outlook

- 2019 production (PC+CV) = 915,305 units, of which 603,491 are exported
- The majority of production is exported to Europe and especially hard-hit southern Europe

Spain Vehicle Demand Forecast 2020-2030



- BAU 2020 = 1.45 million units
- Best Case 2020 = 1.23 million units, a fall of -220,000 units, -15.5% from BAU (-18.0% from 2019)
- Base Case 2020 = 1.14 million units, a fall of -310,000 units, -21.6% from BAU (-24.0% from 2019)
- Worst Case 2020 = 1.05 million units, a fall of -400,000 units, -27.8% from BAU (-30.0% from 2019)

Spain Analysis

Lockdown period

- In terms of car dealerships, the lockdown was from 14th March – 1st May (7 weeks).

Automotive Growth Drivers

- Pre COVID-19. Spain's vehicle sales were on a general upward trajectory, increasing from 1.43 million in 2017 to 1.56 million in 2018 but had then fallen back to 1.5 million in 2019.
- Commuters concerned about using public transport may become a growth driver for vehicle sales.

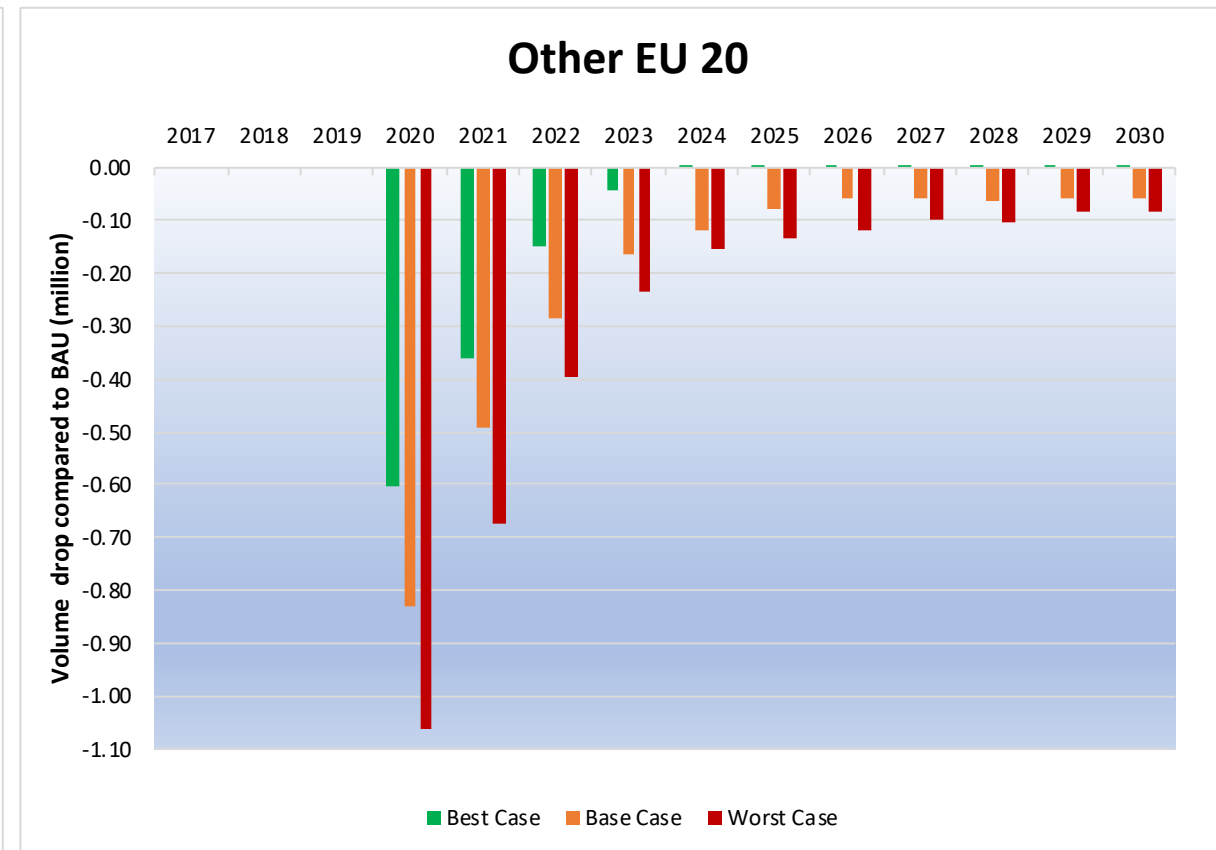
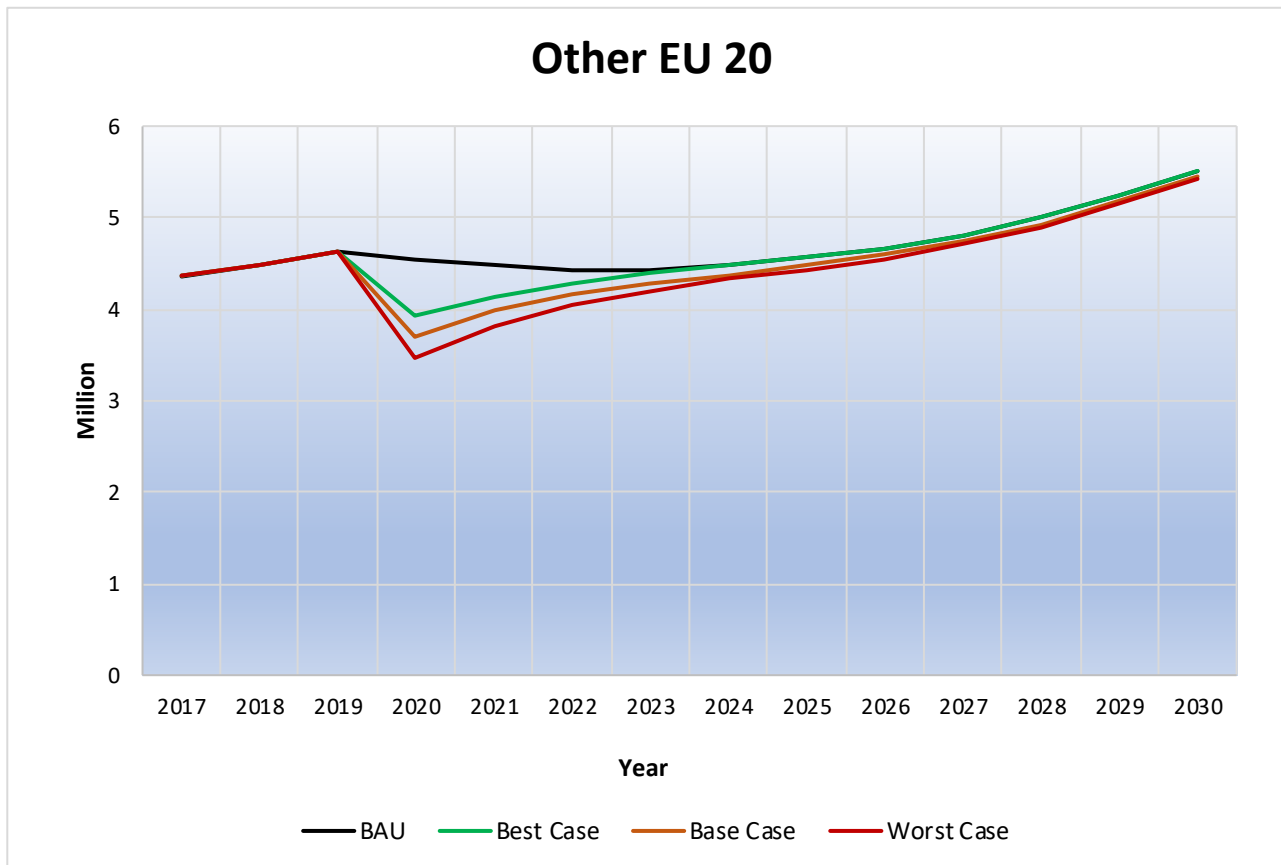
Automotive Headwinds

- A -3% decline in the market had been predicted before the COVID crisis , in part due to booming used car sales undermining sales of new vehicles.
- Spain was suffering from the weakening macroeconomic climate, leading to high levels of unemployment especially amongst the young.
- GDP outlook is very weak with a -9.2% contraction expected in 2020; but with a predicted growth of +6.8% for 2021.
- Pre-COVID, the government finances were not in a strong state. limiting the government's ability for automotive economic stimulus.
- EU CO2 emissions targets being phased in for 2020 for all OEMs increasing the cost of vehicles and also hampering sales.

Export Outlook

- Production (PC+ CV) = 2,819,600 units, of which 2,248,019 are exports
- 91% of exports go to the rest of the EU and UK

Other EU 20 Vehicle Demand Forecast 2020-2030



- BAU 2020 = 4.53 million units
- Best Case 2020 = 3.93 million units, a fall of -600,000 units, -13.3% from BAU (-15.0% from 2019)
- Base Case 2020 = 3.70 million units, a fall of - 830,000 units, -18.4% from BAU (-20.0% from 2019)
- Worst Case 2020 = 3.47 million units, a fall of -1,060,000 units, -23.5% from BAU (-25.0% from 2019)

Other EU 20 Analysis

Countries included in Other EU 20: Austria, Belgium, Denmark, Finland, Greece, Ireland, Luxembourg, Netherlands, Portugal, Sweden, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia.

Lockdown period

- Apart from Sweden, Netherlands, Denmark, most EU countries have implemented lockdowns of a similar timeline to the EU5 countries.
- Eastern European countries of Poland, Croatia, Romania, Slovakia, Hungary and Czech Republic have experienced much lower rates of COVID-19 infections and as such have implemented relatively modest lockdown measures (i.e. Polish dealership sales continued).
- This will result in the volume falls being slightly lower (base case -15% in 2020) for the overall EU 20 than for the larger EU5.

Automotive Growth Drivers

- Pre COVID-19, the other EU 20 countries had experienced growing economies and vehicle sales. However the slowing macroeconomic climate and European economic outlook has restrained growth in these countries too. Nevertheless, stronger growth opportunities exist in Central and Eastern European countries than with the larger more saturated EU5 markets.
- Commuters concerned about using public transport may become a growth driver for vehicle sales.

Automotive Headwinds

- Slowing EU economic growth.
- EU CO2 emissions targets being phased in for 2020, for all OEMs will require extra technology – e.g. mild hybrid technology, increasing the cost of new vehicles which could harm overall sales volumes. There is speculation that the EU Commission might relax or delay these targets / fines.

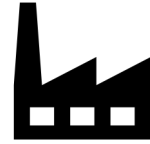
Conclusions

- **Business failure** in supply chain could cause disruption to production– e.g. forced consolidation to bailout single source suppliers.
- **Industry consolidation** is likely to improve financial resilience, reduce costs and mitigate supply chain risk. Larger companies have larger cash reserves and access to credit lines, therefore this more likely to occur with smaller tier suppliers.
- **EV uptake** is increasing faster due to the crisis and governments are likely to introduce auto industry stimulus packages such as scrappage schemes / subsidies to incentivise the uptake of EVs – which may help OEMs to achieve emission targets almost by accident.
- **Delaying of CASE technologies** Profit margins within the auto industry were already low compared to other industries, and will be erased. Longer term investment in autonomous vehicles, connectivity and shared mobility are likely to be delayed / cut back.
- **Opportunities** in acquiring companies in advanced technologies at a bargain price.
- **China**, the original source of the pandemic outbreak, is likely to come out of the crisis quite well. It could see this as an opportunity to gain ground compared to western competitors by even acquiring key technology suppliers, or possibly investing in OEMs.

Crisis will accelerate outbound changes

Instability will be the new normal

Frequent production stop/start/change from supply & demand volatility



Bullwhip effects to catch up back orders and respond to stimulus



Possible consolidation, M&A, market failures from OEMs, fleet providers



Significant inventory fluctuation

Pressure on order-to-delivery times



Requiring higher FVL resiliency

Frequent forecast update & supplier comms

Flexible asset allocation and deployment

Dynamic routing and mode planning

Network design and simulation

Sub-contractor risk management

Dynamic storage solutions (regional/local)

Late-stage customization/modification

Partnership...with a price

OEM showing solidarity with LSPs

Expenses for shutdown-related costs



Maintain/bring forward payment cycles



Review/suspend service level agreements



Avoid immediate contract changes



Extend credit lines

But pain will be shared

Shared costs for restart and disruption

Rate and expense adjustments

Apply bonus/malus

Revise contract and cost structure

Long-term squeeze on costs

The appetite, openness and necessity for change will be greater than ever

- Use of digital tools – visibility, routing simulation, paperless processes
- Multi-brand loads and asset utilisation
- Strategic regional inventory management
- Supplier communication: stress test, asset availability, dealer and network status
- Greater standardization: PPE and safety processes, EV handling, storage and data
- Online vehicle sales ordering and delivery: from trial to necessity





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