AUTO COMPANIES WILL OUTLAST COVID-19 AND COME OUT STRONGER

By Brian Collie, Parmeet Grover, Thomas Huber, Rolf Kilian, Albert Waas, and Gang Xu

In just a few months, a mysterious, isolated illness has morphed into a fast-moving, global pandemic, changing the way we live and work and upending entire industries, including automotive. The acute supply chain shocks triggered at the start of the year in China's Hubei province—a component hub serving OEMs around the world—are now exacerbated by worldwide demand-side shocks that threaten to cut forecasted 2020 global automotive sales by 20% or, in the worst-case scenario, about 40%.

Other industries are reeling from the repercussions as well, of course. But for automotive, given China's importance as a leading source of both components and vehicle sales, the impact was particularly fast and fierce, stretching the processes and capabilities of even the strongest companies. Now, more than 95% of manufacturing capacity in Europe and more than 90% in North America lies idle while Asian manufacturing is just beginning to come back online. Around the world, tens of thousands of industry employees are temporarily out of work, traffic at thousands of dealer locations has stalled, and franchise operators are struggling to make payroll. As demand plummets and sales decline sharply, the question for a number of automotive companies is not how to stretch. It's how to survive.

These are unprecedented times, with terms like "social distancing" and "shelter in place" now part of the daily vernacular as the entire world puts normal life on hold to brace for what lies ahead. That means the automotive industry is largely on hold too. But this industry employs 59 million people worldwide (directly or indirectly) and contributes an estimated $5.5 trillion to the global economy. Consequently, the automotive industry's feast—or its famine—will have a profound impact that ripples through industries and nations. By taking swift and purposeful action to stem the tide of financial and operational disruption, the industry can fuel revitalization across industries and around the world.

We offer here an in-depth look at the potential evolution of demand in the months ahead, a set of economic scenarios to consider, and actionable recommendations for both vehicle manufacturers and suppliers.

When Will Demand Be Restored?

The last decade was a period of exceptional growth for the automotive industry. In 2009, at the depth of the Great Recession, 64 million new light vehicles were sold globally. That number rose to nearly 90 million in 2019, with China emerging as the single largest automotive market in the world, in spite of the slowdown that occurred in the region during the 2017–2019 period.

Now, amid the COVID-19 pandemic, the global economy is slowing drastically. Many markets have seen a dramatic decline in new vehicle sales, some by more than 80% at peak exposure.

Like other industries, automotive is seeing market declines for a variety of related reasons. Most plants and many dealerships are closed. Consumers in many places throughout the world are advised or ordered to shelter in place, which presents logistical difficulties for making a large-ticket purchase like a vehicle.

The primary reason, though, is that most consumers simply don't want to buy a new vehicle right now. They are significantly disinclined to make large, discretionary purchases because of looming uncertainties: how long the virus will last, how long their paychecks will keep coming in, how long it will take for the economy to recover. Consumer confidence and the economy are inextricably linked, and both will remain suppressed beyond the short term, for some 12 to 18 months—or until a vaccine is developed and made widely available.

Amid all of this uncertainty, auto industry demand is postponed. By how much and for how long?

We looked at the patterns that followed other market shocks, like the recession of 2008–2009. At a high level, economic shocks and corresponding rebounds typically take one of three shapes:

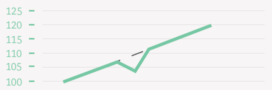
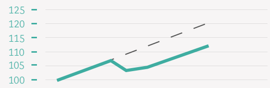
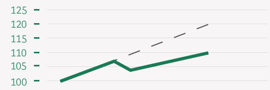
- **V Shape.** A classic economic shock that leads to a pronounced downtown, followed by a rapid rebound to the original output path.
- **U Shape.** A shock, such as a financial recession or major policy error, that breaks a growth trend and causes a pronounced downtown that is sustained for a time before recovery begins.
- **L Shape.** A shock that causes irreparable damage and leads to a perpetually growing loss of present value and future output, resulting in a fundamentally changed growth trajectory.

To determine the potential shape of the rebound from this current viral outbreak, we coupled our knowledge of the classical shapes with our analysis of the form each shape could take—leveraging BCG's flatten-fight-future approach to confronting the virus. We assessed the potential impact of broad flatten-the-curve efforts and the resulting initial decline in sales. And we looked at the duration of the fight-the-virus phase and the speed at which the virus could be contained (perhaps through vaccine development or comprehensive use of testing and antiviral treatment).

For this analysis, we considered the current epidemiology and factors that could affect it, such as containment measures, governmental restrictions on public life and industry, and health care innovations. We assessed macroeconomic developments: depressed household and business economic confidence, curtailed spending and investment, increased insolvencies, rising unemployment, and declining GDP. This yielded four archetypes that show how the automotive industry can potentially be impacted by COVID-19. (See Exhibit 1.)

The current situation is an incredibly fluid one, and these scenarios are designed foremost for robust and thorough contingency planning—not for predictive, point-in-time

EXHIBIT 1 | Four Archetypes for Crisis Recovery

	1 CONTAINED V PATH **Optimistic scenario**	2 DEEP V PATH SKEWED TOWARD U **Moderately optimistic scenario**	3 U PATH **Moderately pessimistic scenario**	4 L PATH **Pessimistic scenario**
GDP LEVEL				
Macroeconomic factors	• Positive surprise in virus properties • Rapid progress of mitigation measures and their effectiveness • Material monetary and fiscal response • Household and business spending intact • Few businesses fail, unemployment recovers from initial dip	• Virus properties stay as is or worsen • Mitigation efforts are slow and must be extended • Household and business confidence falls and remains depressed • Rebound via government support of investments, businesses, and households	• Virus properties linger into 2021 • Mitigation efforts are disruptive and sustained for an extended period • Household and business confidence collapses and remains depressed • Financial system begins to show cracks	• Economy remains at depressed levels through prolonged fight phase • Consistent repeated shock: – to labor—potentially facilitated by a repeated deadly pandemic – to capital—facilitated by inability to invest as they have in the past – to productivity—possibly via a break in the capacity to learn
Auto factors	• Government-backed incentives and cheap credit spur quick recovery • Auto demand overshoots prior growth rate on rebound before settling to precrisis levels	• Confidence remains low and consumers defer major purchases • Demand partly recovers, yet significant portion of sales lost in 2020	• New-vehicle sales remain depressed • Continued shutdown of auto production; many dealers remain closed • Significant portion of sales lost	• Significant disruption to auto supply chain • Lasting change to consumer behavior • Immense loss of sales
Assumptions	• Short-term crisis impact: ~3 months • Macroeconomic impact: ~9 months • GDP drawdown: ~2 pp	• Short-term crisis impact: ~6 months • Macroeconomic impact: ~18 months • GDP drawdown: ~5 pp	• Short-term crisis impact: ~9 months • Macroeconomic impact: ~24 months • GDP drawdown: ~6 pp	• Short-term crisis impact: >12 months • Macroeconomic impact: >24 months • GDP drawdown: ~7 pp
	← Less likely archetype →	← COVID-19 recovery more likely in range of these archetypes →		← Less likely archetype →

Source: BCG analysis.
Note: pp = percentage points.

precision. As of now, neither the most optimistic nor the most pessimistic path seems probable. Rather, the impact seems likely to fall within the range of the two more moderate scenarios. Where it lands depends on the length and severity of the outbreak, as well as the measures put in place to address its repercussions and to manage the risk of community spread as companies resume production. Given the outlooks for the three major automotive markets (China, the US, and Europe) and current plans for economic stimulus and availability of credit, we expect a U-shaped global decline and recovery, in general, with a six- to nine-month slowdown for the automotive industry.

Exhibit 2 maps the anticipated effect on new-vehicle sales by volume for each of the four archetypes. For the two archetypes that seem more likely, the drop in demand results in a decline in sales of approximately 20% in 2020. In the most pessimistic scenario, which we do not consider likely at this point, sales would fall by approximately 40% in 2020.

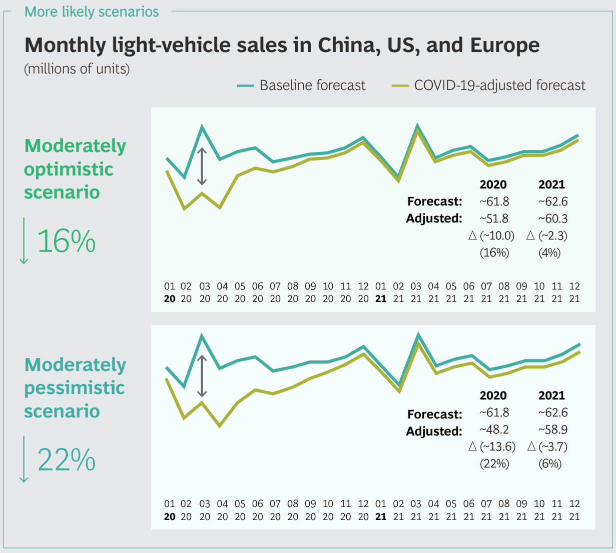
Looking ahead to 2021, we expect the market to remain somewhat sluggish during the first half of the year prior to a more concerted rebound in the second half, as fear subsides (assuming the virus is reasonably under control) and the impact of pent-up demand begins to be felt. Overall, we expect that 2021 vehicle sales by volume will fall below prior forecasts by approximately 5%, with the potential for a decline of 15% to 20% in our most pessimistic scenario.

How Will OEMs and Suppliers Be Affected?

OEMs are much better positioned now than they were going into the downturn of 2008–2009, having improved their cash position as a percentage of revenue from 8% in 2008 to 17% in 2019 (the median for the 13 largest OEMs). The painful but necessary corrections to remove excess capacity and to rightsize operations have led to a marked improvement in plant utilization in the US, from approximately 67% in the first quarter of 2008 to about 77% in the first quarter of 2019. This increase in utilization, along with shifting product portfolios to meet buyer demand and instituting greater discipline with retail incentives, has yielded stronger fundamentals in the face of the downturn.

Exhibit 2 | 2020 Auto Sales (by Volume) Expected to Fall by 20%

	Recovery archetype	Scenario	Potential change in light-vehicle sales relative to IHS January forecast for 2020 (millions of units)			
			China	US	Europe	Total
1	Contained V path	Optimistic	~–2.2 (~9%)	~–1.5 (~9%)	~–2.2 (~11%)	**~–5.9 (~10%)**
2	Deep V path skewed toward U	Moderately optimistic	~–3.5 (~14%)	~–3.1 (~19%)	~–3.4 (~17%)	**~–10.0 (~16%)**
3	U path	Moderately pessimistic	~–3.5 (~14%)	~–4.7 (~28%)	~–5.4 (~26%)	**~–13.6 (~22%)**
4	L path	Pessimistic	~–8.3 (~34%)	~–7.3 (~44%)	~–8.0 (~40%)	**~–23.6 (~38%)**



Sources: IHS Markit Automotive, Light Vehicle Sales Forecast, January 2020; Marklines; BCG analysis.
Note: The IHS Markit forecast data as of January 2020, which we used as the basis for scenario development, incorporated limited COVID-19 effect.

But a 20% decline in sales volume (an outcome within the range of the two more likely scenarios we've modeled) will test even the most robust companies. Such a decline would impose tremendous pressure on near-term operations and force incredibly difficult choices between today's business needs and the longer-term bets required for automotive companies to position themselves as potential winners in future profit pools, such as ride sharing, autonomy, and connectivity. Many investments and projects that were previously heralded as priorities are now, for many traditional players, regarded as luxuries.

Exhibit 3 shows the illustrative impacts of a slowdown on a hypothetical OEM's P&L for 2020. For simplicity, we have assumed a base of $100 billion in sales (which would equate to the ninth-largest OEM) to demonstrate how the P&L would evolve in response to differing losses in volume. Given the fixed-cost structure, every drop in demand disproportionately impacts EBIT margins, with a breakeven point reached at a 25% reduction in sales. As an example, for a 10% decline in sales volume, we would expect to see an estimated 40% decline in EBIT. And as we move away from that most optimistic scenario, we see potential EBIT declines of approximately 60% to 80%, with the worst-case scenario creating a profit-negative EBIT decline of nearly 140%.

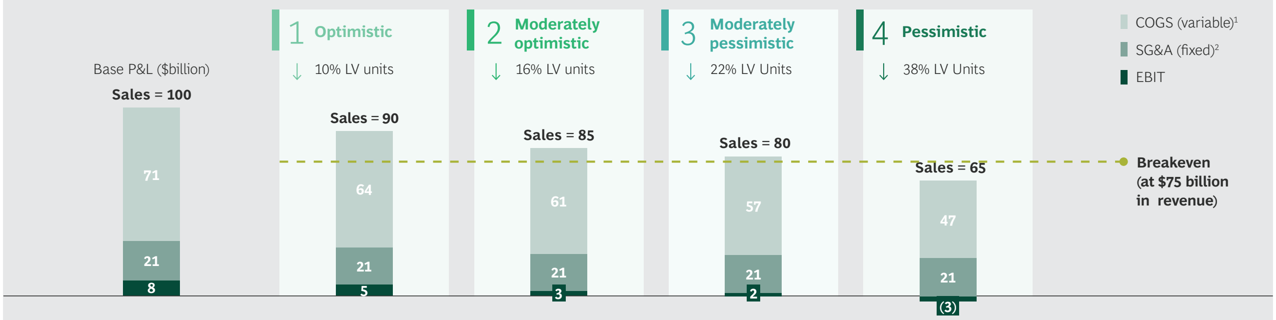
These are sobering scenarios that force even the healthiest and best-positioned OEMs to take decisive action. OEMs are already responding—accessing lines of credit, shuttering plants, furloughing employees, deferring or reducing executive salaries, and postponing investments in future programs. Though these early moves were bold, and appropriate given the urgency, OEMs will need to continue recalibrating their contingency plans to identify trigger points for further action should the demand situation warrant it.

Perhaps more concerning, though, is the impact on the automotive supply base.

Unlike OEMs, suppliers had not materially strengthened their cash positions in the years leading up to 2020. And, for the last 18 months, many suppliers were already under mounting pressure as rising raw-material prices, trade uncertainty, the slowdown in China, and broader cyclical concerns triggered a decline in investor sentiment and valuations.

Exhibit 3 | At a 25% Decline in Revenue, Many OEMs Will Approach Their Breakeven Pointb

Illustrative P&L impacts for an auto OEM with $100 billion in 2020 sales



Note: Assumes ability to eliminate all variable costs; does not account for likely crisis-spurred fixed cost reductions.

	1 Optimistic	2 Moderately optimistic	3 Moderately pessimistic	4 Pessimistic
Every $billion (or %) in lost sales…	(~$10 billion) (~10%)	(~$15 billion) (~15%)	(~$20 billion) (~20%)	(~$35 billion) (~35%)
…equates to $billion (or %) EBIT declines	(~$3 billion) (~40%)	(~$5 billion) (~60%)	(~$7 billion) (~80%)	(~$11 billion) (~140%)

Sources: Discussions with OEM experts; BCG analysis.
Note: LV = light vehicle. The model assumes that vehicle revenue reductions match volume declines, a 5% reduction in aftermarket sales for all scenarios, and that ~30% of the cost basis is fixed cost.
[1]Includes ~7% of net revenue as fixed (mostly depreciation and amortization).
[2]Assumes $6 billion of R&D.

Now, with COVID-19 forcing a plunge in production volumes, many suppliers are facing a severe cash crunch—a situation that will be exacerbated given the timing of cash inflows and outflows as suppliers ramp up to support OEMs' pending production restart and thus incur expenses for raw materials and plant operations.

Absent significant cost reductions and/or financial support from governments, many suppliers may face the possibility of defaulting on their debt obligations—a risk that heightens with each passing day of depressed auto sales and that, if unaddressed, could jeopardize any broader automotive rebound. (See Exhibit 4.)

What Must Industry Leaders Do?

There is no doubt that the automotive industry is facing challenges unlike anything it has ever seen before. The crisis demands that company leaders act swiftly and decisively, not just for the good of the firms they helm but because the industry, given its scale and scope, is integral to the global economy.

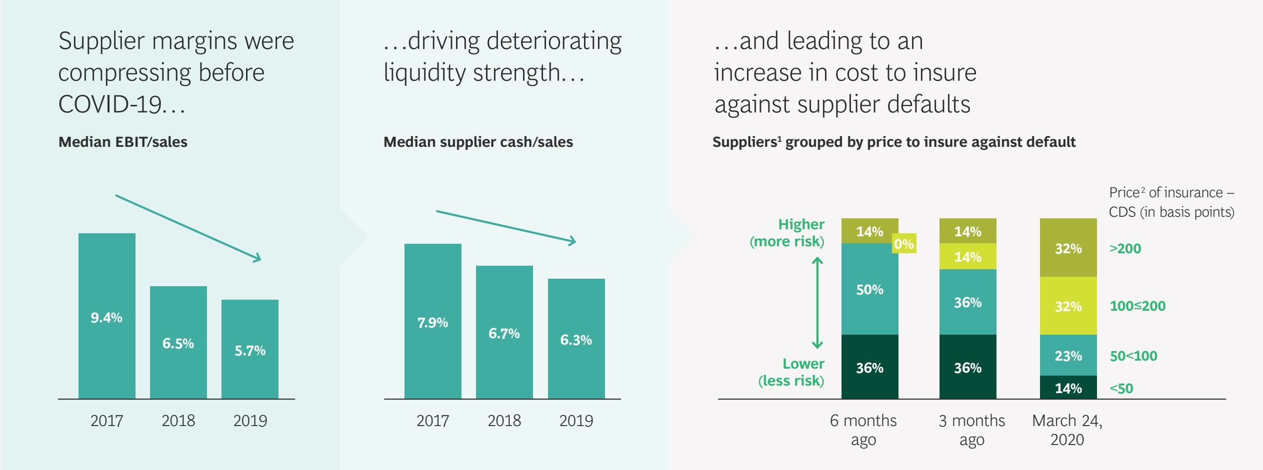
For the last few weeks our industry has been acutely focused on crisis response and management—making strong, bold moves to shore up the balance sheet and contribute to larger societal efforts at flattening the curve and fighting the virus. While tremendous uncertainty remains and the broader fight against the virus is far from over—necessitating continued diligence in crisis management—it is time now to begin preparing for a near-term reboot of production and vehicle sales.

To help OEMs and suppliers navigate this next phase, we suggest the following priorities:

- Continue to closely monitor macroeconomic indicators and changes in consumer sentiment; run scenarios—frequently and comprehensively—and update your contingency plans as new information becomes available, ensuring continued rigor around cash management.

- Drive enterprise-wide cost reductions even closer to the core and create options for the months ahead. If it

EXHIBIT 4 | Risk to the Automotive Supply Base Increases Each Day the Crisis Continues



Sources: S&P Capital IQ; BCG ValueScience Center; Bloomberg; S&P Capital IQ; BCG analysis.
Note: Weighted median from set of 30 global suppliers, selected from the top 50 global suppliers, excluding diversified industrials and companies that are not traded publicly. Cash reported at year end or most recent last 12 months. Revenue reported over fiscal year. Excludes financing/credit divisions; cash includes cash, near cash, and short-term investments (money market).
[1]From set of 22 global automotive suppliers.
[2]Five-year term credit default swap (CDS) premium rates on supplier debt.

doesn't hurt, you are not being aggressive enough.

- Prepare your operations for recovery by taking critical steps to promote a safe production environment and minimize the risk of community spread as you reopen facilities: adjust shift structures, rearrange workstations to add distance, increase the availability of personal protective equipment (PPE; things like masks and gloves), schedule more-frequent cleaning and sanitization, monitor the temperature of employees, and explore the use of new digital tools to assist in infection notification and tracking. Such tools can enable self-reporting, track incidents, provide real-time infection chain notification, and more.

- Review the supply chain in detail. Assess supplier readiness at tier two and tier three levels in terms of both production readiness and financial stability to ensure that you'll have the parts on hand to restart component production and vehicle manufacturing.

- Stay close to your lead investors. Be clear on your strategy, tactics, and outlook—projecting confidence not just for near-term crisis management but also for how you propose to emerge from the crisis stronger. Similarly, keep an eye on potential investor activism and your vulnerabilities relative to your peers.

- If liquidity allows, consider selectively going on the offensive to fill strategic gaps. Refresh your M&A pipeline, monitor valuations, and move assertively when situations arise that can help your business recover.

- Use the crisis as an opportunity to do right by your people. Work to define an aspirational culture for your company and then to establish it. Lead by example, communicate frequently, and promote an all-hands-on-deck culture. Be honest about the tough decisions and sacrifices that will be needed. Remember and reward those sacrifices when things return to normal.

For OEMs, some other essential actions:

- Prioritize offerings and stretch capital. Focus on vehicle programs that have proven to be resilient in previous downturns: SUVs, minivans, and (in the

US) pickups. Raise investment hurdles, leverage product architectures, and invest in consumer-centric features.

- Revisit investments and projects that were recent priorities but now, in the crisis, may be deemed luxuries. Stop funding bets that were deemed low probability even before COVID-19. Focus instead on those critical few initiatives viewed as essential to your future and maintain investment accordingly. And, with the benefit of strategic clarity, be aggressive where possible in leveraging M&A to acquire needed capabilities and talent in support of new mobility technologies (at a potentially steep discount).

- Launch a comprehensive commercial and sales program to actively connect with consumers and find ways to differentiate yourself in anticipation of the vehicle sales that will be unleashed by pent-up demand and a likely generous package of government-backed incentives.

- Reactivate sales by microtargeting specific customer segments and geographies, optimize fixed- and variable-marketing spending by targeting the vehicles that promise the highest ROI, explore different channels to market (consider, for instance, embracing digital to connect with your customers in new ways or to support your dealers), and proactively manage brands. (Share-of-mind gained now can translate into share-of-market as demand is restored.)

And for suppliers, these are specific priorities:

- Strategically reevaluate key accounts and allocate resources to support the most critical customer relationships and programs. The crisis provides an opportunity to build trust that will pay off during recovery. In short, make yourself essential and ensure a win-win for you and your customers.

- In advance of OEMs restarting production, model cash flow timing for your own company and for critical suppliers. Understand where the timing of cash flows creates liquidity pressures, and proactively engage OEMs: seek their support in managing the timing of cash payments to ensure that the supply base has the resources needed to restart production.

- Review program profitability, in detail, to better understand which programs are below investment hurdles, and why. In the spirit of transparency, proactively engage impacted OEMs and outline a recommended set of actions to create more equitable terms that will provide you with the returns you need to best serve them and to reinvest in the relationship.

Throughout it all, take care of your people, and be a good corporate and community citizen. Do what you can to support the fight against COVID-19. Support broad social-distancing efforts and, where possible, leverage your production networks and supply chains to help manufacture or deliver much-needed supplies, like ventilators and masks.

If we had to use just one word to describe what automotive industry leaders must urgently pursue, it would surely be *resilience*. Resilience requires creativity and often leads to reinvention. The structural cost improvements and streamlined networks being forced upon the industry right now can, with long-term vision and reinvention in mind, yield tomorrow's nimble automotive companies, able to embrace new ways of working, meet future disruption by revisiting global supply chains, and pivot to new business models—including those driven by digitization and electric and autonomous vehicles. There's strength to be gained for the future in the lessons we are learning today.

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Acknowledgments

The authors thank their BCG colleagues who contributed to this analysis: Aakash Arora, Philipp Carlson, James Harkins, Carl Hieronymi, Benjamin Keppler, John Kochevar, Kristina Krebs, Nikolaus Lang, Terese An Nguyen, Eric Olsen, Paul Swartz, and Ann-Kathrin Vetterl.

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