

## Way ahead for global automotive industry amid semiconductor chip shortage

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(4 min read)

### Key takeaways:

- *The current crisis in auto industry is revolving around semiconductor chips and the recovery of the industry is completely dependent on the demand supply equilibrium*

### What is the challenge facing the industry?

Motor vehicle manufacturers and suppliers are facing a dramatic shortage of microchips globally. This shortage was caused by a massive increase in demand for computers, mobile phones and other consumer electronics during the COVID-19 pandemic that surpassed the current supply of semiconductors.

The global chip shortage issue started in 2020 after many countries imposed complete lockdown, hitting production and supply cycle. Supply, in particular, took a major hit earlier this year after a storm halted production in the U.S. and a factory in Japan was ravaged by fire – the affected factories in both countries together accounted for 50 per cent of the semiconductor chips used in cars globally. Further, emergence of the Delta variant and consequent COVID-19 breakouts in Southeast Asia increased the shortage of semiconductor chips.

According to [KPMG International's 2021 annual survey of automotive executives](#), the majority of executives (> 50 per cent) are concerned about a range of issues affecting supply chain, including price volatility as well as availability of semiconductors and commodities.

### What is the impact?

In the year 2021, semiconductor chip shortage is expected to cost the global automotive industry ~**USD200 billion** in revenue. These shortages have forced several original equipment manufacturers (OEMs) to slow down production, with some even halting production; thus, further extending the waiting period of popular, feature-rich, and high-end passenger vehicle models – with delays as high as 12 months for some models.

India's semiconductor demand currently stands at around **USD24 billion and is expected to reach USD100 billion by 2025**. Sale of passenger vehicles comprising of SUVs and high-end Sedans dipped significantly in the second quarter as compared to last year same period.<sup>1</sup> Major OEMs are cutting down productions as their current chip supplies have dried up.

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Automotive sales in India have recorded their lowest numbers in 10 years during the recent festive season. Sales across segments declined by 18 per cent as compared to sales last year during the same period. Vehicle registrations in India stood at 14 per cent lower y-o-y when compared to Europe, where it was lower by 23 per cent y-o-y.<sup>2</sup> Additionally, major OEMs are cutting down production as their current chip supplies have dried up.

However, on the positive side, used car sellers across markets, including India, are enjoying a boom in demand. Prices of used cars rose by about 20 per cent globally on an annual basis through August 2021.<sup>3</sup>

### **How long will the chip shortage last?**

With the pressures of rising demand, but supply remaining as-is, the global chip shortage conundrum may continue till next year, with some improvements to be seen from mid-2022 onwards<sup>4</sup>. Some large chip manufacturers in the U.S. and Europe are expanding their manufacturing capacity, which may aid in the recovery of the automotive industry from middle of next year.

Investments are also being made in Southeast Asia to curb the semiconductor shortage. Some of the chip giants in Taiwan and South Korea are investing hundreds of millions of dollars in capacity expansion over the next few years. With these global investments, tracking the first quarter of FY22 will provide a good indicator on recovery timelines.

### **What are the corrective measures being taken by automotive companies?**

Auto companies, constrained by the continuing semiconductor shortage, are taking various countermeasures to improve vehicle supply and bring down the waiting period for customers, thereby improving their vehicle sales. A few countermeasures adopted by Indian and global OEMs to surmount this crisis include:

- Halting or cutting down vehicle production
- Removing infotainment systems, thus bringing down chip usage per vehicle and offering cars with fewer chip-dependent features, which can be retrofitted later
- Diverting chips to high-demand segments, such as SUVs, from mid-demand segments such as sedans
- Prioritising the production of premium passenger vehicles, which is seeing strong growth
- Some OEMs are also increasing the prices of their vehicles across models.

### **What is the way forward?**

By 2025, chip shortages and trends such as electrification and autonomy, are expected to drive up to 50 per cent of the top 10 automotive OEMs<sup>5</sup> to design their own chips. It is also anticipated that the lessons learned from the microchip shortage will further drive automakers to become more technologically savvy. This lack of visibility in the supply chain has made automotive OEMs realise that they need to have greater control over their semiconductor supply, and they will be taking steps to rectify that blind spot accordingly.

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<sup>1</sup> Can Indian Auto Industry Overcome The Challenge Of Chip Shortage? Outlook, 8 December 2021

<sup>2</sup> Auto sales for festive season this year worst in a decade, says FADA, AUTOCAR, 22 November 2021

<sup>3</sup> Pre-owned cars in demand amidst global chip shortage, prices soar 20%-25%, ETNOWNEWS, 6 November 2021

<sup>4</sup> KPMG in India analysis

<sup>5</sup> 22nd Annual Global Automotive Executive Survey 2021, KPMG International, accessed on 24 December 2021

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