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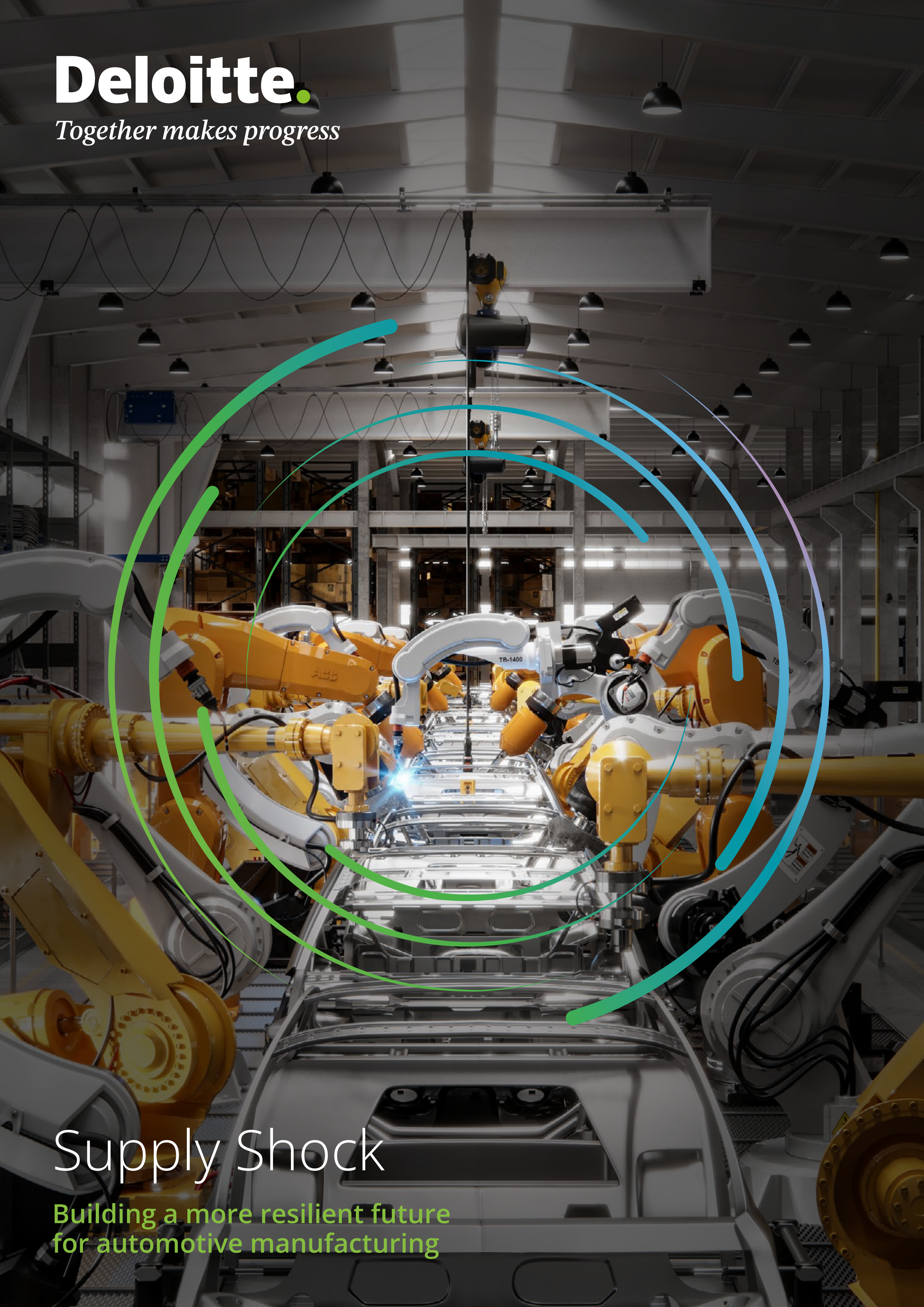

Supply Shock

Building a more resilient future for automotive manufacturing

Nearly three months after the Strait of Hormuz closed to most cargoes, the disruption has evolved into a system-wide shock for automotive manufacturing. What began as an energy crisis is now compounding across four reinforcing channels: plant energy costs, petrochemical-derived materials, metals and finished vehicle freight.

For automotive manufacturers across Asia Pacific, these pressures are no longer episodic – they are converging to reshape cost structures, test production continuity and expose the limits of operating models built primarily for efficiency.

In this environment, resilience must shift from a reactive capability to a core design principle, embedded into cost structures, supply chains and energy systems as a source of enduring competitive advantage.

The effect is uneven across the region. Japan and Korea are more exposed to imported energy and export freight disruption. Southeast Asian manufacturers face material and logistics pressure with less room to absorb cost. China is relatively better insulated by stockpiles, domestic industrial depth and stronger electric vehicle penetration, but it is not immune to tighter regional shipping, higher input prices or weaker end-market confidence.

For dealer-led markets like Australia, a temporary tightening of supply may even deliver a short-term boost to margins. But no automotive market in Asia Pacific is fully shielded when oil, gas, petrochemical feedstocks and freight all tighten together.

The sector has weathered supply shocks before. COVID-19, tariffs and semiconductor shortages forced OEMs and Tier 1 suppliers to build stronger capabilities in multi-sourcing, supplier management and early warning. In many firms, those disciplines are now more mature than in other sectors. The difference this time is the breadth of the cost shock.

That points to a selective recalibration. Automotive leaders need to protect production continuity and cash now, while building resilience where exposure is highest and alternatives are credible. The cost discipline model that made Asia Pacific manufacturing competitive still matters, but now needs to be augmented with a strategic resilience lens.

Now: Protect continuity and preserve cash

Operational command is key to protecting continuity and preserving cash in the face of interconnected supply disruptions. Establish a cross-functional control tower (“Pit Wall”) bringing together procurement, manufacturing, logistics and commercial teams around a single live view of inventory, inbound supply, plant economics and customer commitments. This group can provide a decision engine, triggering rapid action on production resequencing, constrained-material allocation, supplier escalation, contract activation and customer communication.

Rapid, effective and data driven responses require supply chain visibility below Tier 1. Many manufacturers now have strong oversight of direct suppliers but weaker visibility into the Tier 2 and Tier 3 firms carrying the greatest exposure to feedstock inflation, inbound logistics disruption or working capital stress. Deloitte’s SupplyHorizon tool supports rapid multi-tier risk auditing, for faster identification of suppliers to drill down into which are most vulnerable by input intensity, financial resilience and substitutability. Leaders need a line of sight to the points of weakness before they show up as production line downtime.

Production decisions also need to be more deliberate. Just-in-time settings that work well in stable conditions can keep pushing volume through a network even when margin is collapsing. A ground-up optimisation exercise can identify which products, plants and customer contracts remain attractive under sustained input inflation, and which should be slowed, re-sequenced or repriced.

Selective inventory buffers also have a role, but only where the economics support them. Buffering every exposed material weakens working capital discipline; instead segment inputs by criticality, lead time, disruption exposure and ease of substitution. Hold additional cover only where a material shortage would stop a line, where alternatives take time to qualify, or where the cost of interruption is meaningfully higher than the cost of inventory.

Strategic scan:

How far below Tier 1 does your financial and operational visibility reach?

Which materials would stop production within 30 days, and who controls the buffer for them?

Which products, plants and contracts would you actively deprioritise if input costs remain elevated?

Next: Rewire procurement and production resilience

If disruption persists, resilience will come from targeted intervention in the most critical and vulnerable fragile inputs, through changes in sourcing, qualification and commercial architecture. The strongest automotive businesses will extend the lessons of the chip shortage into a broader operating model for material, energy and supplier risk.

The first step is faster qualification of exposed inputs. Plastics, adhesives, coatings, lubricants and other petrochemical-intensive materials now deserve the same discipline once reserved for semiconductors. Avoid creating alternatives for everything; identify where single-source exposure, long approval cycles or limited substitutes create an unacceptable risk to continuity. For those categories, accelerate dual-sourcing and streamline qualification pathways. Digital tools and AI can help screen candidate suppliers, identify comparable materials and focus engineering effort where substitution is most viable. This also creates an opportunity to lower costs by reducing complexity: fewer material grades, more common components, and tighter option packages can make the supply base easier to protect.

Next, reset how cost risk is shared. Many automotive contracts were designed for incremental commodity shifts, not simultaneous movements across energy, materials and freight. Manufacturers should move quickly to tighten mechanisms that link pricing to underlying inputs, using clear benchmarks, defined trigger points and shorter reset cycles. In practice, this means reviewing exposure contract-by-contract, prioritising high-volume and high-volatility categories – including those tied to indexed metals, resins and logistics surcharges – and taking early positions with customers and suppliers before cost pressure forces reactive renegotiation.

Addressing energy sourcing can deliver cost containment and resilience together. Electrification of plant operations and selected logistics can reduce exposure to fossil fuel price volatility and supply disruption. The strongest candidates are predictable, high-utilisation loads with clear operating economics, secure grid access and available government incentives. Material handling fleets, fixed-site thermal loads, on-site energy management and return-to-base logistics are often the best starting points. The focus should be on reducing energy consumed per unit produced. This keeps electrification anchored to operating performance and energy productivity. In many cases, process optimisation, heat recovery and smarter load management will deliver faster resilience gains than fuel switching alone.

Strategic scan:

How long would it take to qualify new sources for your most exposed materials?

Which contracts recover input inflation quickly enough to protect margin?

Where would electrification of production improve both resilience and operating economics?

Where can material substitution also reduce avoidable manufacturing complexity?

Future: Reduce structural exposure to disruption

Platform consolidation over the past decade has improved scale and cost, but also increased the impact of single-point failures. Strengthening ongoing resilience requires balancing scale benefits with the ability to absorb disruption. Energy security, material optionality and supply chain depth are becoming core drivers of automotive competitiveness.

Resilience can be worth some margin reduction where exposure is material, failure is expensive and alternatives are credible. In some categories, regional sourcing within Asia Pacific will cost more in stable conditions but reduce exposure to freight disruption, imported energy volatility or geopolitical concentration. In others, dual sourcing or contractual optionality will deliver enough protection without adding structural cost. The right answer will differ by input; high-volume, specification-constrained components will justify different choices to low-volume, substitutable categories.

Regionalisation on its own will not deliver resilience if local supplier depth remains thin; proactive supplier engagement can build stronger regional capability in the categories most likely to constrain output. That means identifying where local or regional suppliers could credibly scale, then supporting them with volume commitments, technical assistance, tooling support or joint planning where the business case is strong. The prize is shorter supply lines coupled with a supplier base that has the capability and commercial confidence to respond when global markets tighten.

The transition to electric vehicles is another part of this resilience story. Electrification is the clear direction of travel for light vehicles, with consumers now motivated by a combination of reduced exposure to future energy shocks, improving technology options and government policies. Manufacturers making this transition must avoid exchanging one set of market and supply chain concentration risks for another. That means securing plant energy resilience, strengthening supplier optionality, and accelerating product portfolio shifts where the economics and infrastructure support them. Battery supply concentration should be managed with the same discipline. Electrification becomes a resilience measure when sourcing partnerships, chemistry choices, regional manufacturing strategy and power access are considered together.

The energy transition also opens commercial opportunities for automotive brands beyond traditional vehicles. Assess where charging, distributed generation, batteries and fleet energy management services can create new revenue streams – through commercial partnerships or product diversification. The customer value proposition is evolving from vehicles as transport solutions towards integrated energy solutions. Positioning for this now will help build brand ecosystems which lock in long-term loyalty.

Strategic scan:

- Which three inputs would you regionalise first if the next chokepoint closed tomorrow?
- What capability partnerships could strengthen your local or regional supplier base?
- Does your EV transition reduce concentration risk, or move it?
- Which connected services create recurring value without weakening future replacement demand?

The next leaders in automotive manufacturing will not be those who only optimise cost most efficiently, but those who engineer resilience into their cost base, supply chains and energy systems by design.

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