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WHITE PAPER - 001

Has Britain's Automotive Industry Lost Its Way?

Production, Ownership and the Erosion of Automotive Scale — What Britain Can Learn from Germany and China

An evidence-based examination of automotive as the cornerstone of manufacturing excellence — and why its skills, disciplines and capability matter to Britain's wider industrial future

Better Decisions Start with Better Intelligence

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Executive Summary

Britain still has an automotive industry.

It employs hundreds of thousands of people across manufacturing and the wider automotive economy, exports vehicles around the world, undertakes billions of pounds of research and development and possesses internationally respected engineering capability.

Nissan builds the Qashqai and Juke in Sunderland. Toyota builds the Corolla in Derbyshire. BMW builds MINI in Oxford. Jaguar Land Rover remains one of Britain's most significant automotive employers. Bentley, Rolls-Royce, Aston Martin and McLaren demonstrate exceptional capability at the premium, luxury and high-performance end of the market.

Measured this way, Britain remains an important automotive nation.

But another set of numbers tells a different story.

In 2016 British factories manufactured:

1,722,698 cars. [2]

In 2025 they manufactured:

717,371.

More than one million cars of annual production disappeared in nine years.

A reduction of approximately:

58%.

The deeper question is therefore not simply:

Why is Britain manufacturing fewer cars?

It is:

What happens to an industrial ecosystem when the volume on which it was built progressively disappears?

That question leads beyond assembly plants.

Britain once owned globally significant automotive component manufacturers including GKN, Lucas, BTR, Pilkington, Turner & Newall and BBA.

Foreign vehicle manufacturers and Tier 1 suppliers subsequently invested heavily in Britain. They brought capital, products, technology and new manufacturing systems. British engineers, operators, managers and suppliers absorbed those methods, combined them with Britain's existing manufacturing knowledge and developed further capability of their own.

For a period, the combination was extremely successful.

Britain had lost much of its indigenous vehicle-manufacturer ownership but rebuilt production.

Then volume declined.

As production contracts, the consequences potentially extend far beyond the number of cars leaving assembly plants.

- Supplier economics weaken.
- Investment moves.
- New programmes are allocated elsewhere.
- Skills development slows.
- Experienced people retire without equivalent numbers of successors.
- Manufacturing knowledge that took generations to create becomes progressively thinner.

And because knowledge flows through multinational organisations, a further asymmetry potentially arises: industrial capability developed in Britain can remain available to the multinational long after the British production operation that helped develop it has disappeared.

This paper therefore considers six related dimensions of Britain's automotive position:

- **Volume.**
- **Ownership.**
- **Tier 1 scale.**
- **Strategic control.**
- **The mass-market product.**
- **Capability.**

It also examines Germany.

Germany has unquestionably retained far greater automotive scale, indigenous ownership and Tier 1 strength than Britain.

But Germany itself is now losing production, employment and investment.

That raises an uncomfortable question:

Has Germany survived the forces that transformed Britain's automotive industry — or is Germany simply further back along the same journey?

Finally, the paper considers China.

China has combined huge market and manufacturing scale with a long-term industrial strategy designed not merely to attract manufacturing, but to create indigenous companies, technologies, supply chains and capability.

The contrast may ultimately be more important than the simple comparison of production volumes.

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1. Britain Still Makes Cars

Britain's automotive industry should not be discussed as though it has already disappeared.

In 2025 the UK manufactured **717,371 cars**, with 555,826 exported. SMMT records exports as 77.5% of UK car production. [1]

Britain retains world-class manufacturing operations and extensive engineering capability.

The danger is not absence.

It is trajectory.

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2. 2016 Changes the Historical Narrative

The conventional history of Britain's motor industry normally begins with decline.

- British Leyland.
- Industrial relations.
- Poor quality.
- Plant closures.
- Foreign takeovers.
- MG Rover.
- The disappearance of British-owned volume manufacturers.

Much of that history is valid.

But it cannot by itself explain the present situation.

Because:

2016 happened.

- Britain manufactured **1,722,698 cars**.
- The foreign-investment model appeared to have worked.
- Nissan had become extraordinarily productive at Sunderland.
- Toyota had established substantial manufacturing in Derbyshire and North Wales.
- Honda manufactured at scale in Swindon.
- BMW had transformed MINI.
- Jaguar Land Rover had expanded substantially under Tata ownership.
- International Tier 1 suppliers had established major British operations.
- Britain demonstrated that loss of indigenous ownership did not automatically mean loss of manufacturing.
- Foreign investment helped rebuild it.

That distinction is central to this paper.

This is not an argument against foreign investment.

It is an examination of what happens when foreign investment progressively **replaces rather than complements indigenous industrial ownership and capability**.

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3. Where Did One Million Cars Go?

The decline becomes much clearer when individual manufacturers are examined.

In 2016, Britain's five largest car manufacturers produced approximately 1.58 million vehicles between them. [2]

Table 1 — UK Production of the Five Largest Car Manufacturers, 2016 vs 2024

Company	2016	2024	Change	% Change
JLR	544,401	257,110	-287,291	-52.8%
Nissan	507,444	282,124	-225,320	-44.4%
BMW/MINI	210,973	110,742	-100,231	-47.5%
Toyota	180,425	98,055	-82,370	-45.7%

Honda	134,146	0	-134,146	-100.0%
Total	**1,577,389**	**748,031**	**-829,358**	**-52.6%**

By 2024, combined UK production from those same five manufacturers had fallen to approximately 748,000 vehicles, with Honda no longer producing cars in Britain. [3]

The reduction from those five manufacturers alone was therefore approximately:

829,000 vehicles.

The important discovery is that Britain's missing production cannot be explained solely through factory closures.

Honda closed Swindon.

But Nissan, Toyota, MINI and JLR still manufacture in Britain.

Their production volumes became substantially smaller.

Britain therefore lost not simply factories.

It lost:

scale within surviving factories.

That distinction matters enormously to the supply chain.

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4. Honda and the Economics of Volume

Honda provides unusually explicit evidence of the role of volume. [4]

Its Swindon operation ultimately developed capacity for approximately 250,000 cars annually.

When Honda announced the closure of vehicle production, it explained that electrification required a restructuring of its global manufacturing system and that resources would increasingly be concentrated in regions where it expected **high production volumes**.

The significance of that statement should not be underestimated.

Future technology followed anticipated scale.

The decision therefore illustrates an important industrial mechanism:

lower volume today can influence where tomorrow's product and technology investment is located.

That can become self-reinforcing.

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5. Henry Ford and the Economics of Scale

The importance of automotive volume is hardly a new discovery.

More than a century ago, Henry Ford demonstrated the industrial power of scale through the Model T.

Ford's integrated moving assembly line reduced Model T chassis assembly time from approximately 12.5 hours to 1.5 hours. As production accelerated, Ford was able to continue lowering the price of the car, helping to turn the automobile from a relatively expensive product into mass-market transport. Ford ultimately sold approximately 15 million Model Ts. [26]

The importance of Ford's achievement was not simply the assembly line.

It demonstrated a powerful industrial relationship:

volume creates the opportunity for productivity; productivity reduces unit cost; lower cost supports greater market penetration; and greater demand creates still more volume.

More than a century later, the technology has changed beyond recognition.

The economics have not.

Modern vehicles carry enormous fixed and semi-fixed costs in product development, software, electronics, tooling, testing and validation, regulatory compliance, manufacturing engineering, purchasing and supplier development.

The more vehicles over which those costs can be spread, the stronger the underlying economics become.

Britain's trajectory is therefore particularly important.

In 2016, Britain manufactured 1.72 million cars.

In 2025, it manufactured 717,371.

Britain is not moving towards greater automotive scale.

It is moving away from it.

That raises a fundamental question:

Can Britain remain internationally competitive in an industry whose economics have depended upon scale since Henry Ford transformed automotive manufacturing more than a century ago?

6. Britain's Former Tier 1 Giants

Britain once controlled substantial parts of the automotive supply chain.

Historical evidence identifies six British automotive component manufacturers with automotive-related sales exceeding US$1 billion as early as 1990: [5]

- **GKN**
- **Lucas**
- **BTR**
- **Pilkington**
- **Turner & Newall**
- **BBA**

These were internationally significant industrial groups.

Lucas subsequently became LucasVarity, with approximately £4.4 billion of sales and 55,000 employees, before being acquired by TRW.

GKN Driveline alone later generated around £5.4 billion in revenue and employed approximately 35,000 people internationally before the wider GKN group was acquired and restructured.

Pilkington became part of Japan's NSG.

BBA's automotive businesses were reorganised and sold.

Turner & Newall became part of Federal-Mogul.

BTR's automotive interests were absorbed through subsequent restructuring and ownership changes.

The technologies did not necessarily disappear.

Factories did not necessarily disappear immediately.

Products continued.

Customers continued.

Engineers continued.

But:

strategic ownership moved.

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7. Made Here Is Not the Same as Owned Here

This produces an important distinction.

A component manufactured in Britain by a German, Japanese, American, Spanish, Canadian or other internationally owned company is unquestionably British manufacturing.

- It employs British people.
- Pays British wages.
- Uses British services.
- Creates local economic value.
- Foreign ownership does not make the manufacturing economically irrelevant.

But there are different levels of industrial participation:

- **Made in Britain.**
- **Sourced in Britain.**
- **Owned in Britain.**

They are not the same thing.

Ownership affects where ultimate decisions are made concerning:

- capital investment;
- technology development;
- acquisitions;
- global sourcing;
- product allocation;
- manufacturing footprint;
- and sometimes intellectual property.

Britain became increasingly successful at hosting manufacturing while becoming less successful at owning the industrial organisations making those decisions.

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8. Foreign Investment Also Transformed British Capability

Foreign investment did not simply bring money and factories.

It brought methods.

Japanese manufacturers in particular exerted substantial pressure on British suppliers to improve: [6]

- quality;
- reliability;
- manufacturing efficiency;
- and logistics.

Parliamentary evidence examining this period concluded that these relationships generated significant productivity improvements, particularly among Tier 1 suppliers.

British manufacturing capability therefore evolved through an exchange.

Overseas manufacturers introduced manufacturing systems.

British companies and employees learned them.

They adapted them.

They improved them.

And those improvements themselves became part of Britain's automotive knowledge base.

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9. Knowledge Does Not Only Flow Into Britain

This raises a more subtle issue.

Multinational organisations transfer knowledge in both directions. [7]

A British factory belonging to an overseas company does not remain simply a recipient of processes developed at headquarters.

- Its engineers solve problems.
- Its operators improve processes.
- Its suppliers develop solutions.
- Its production engineers shorten cycle times.
- Its quality teams develop countermeasures.
- Its launch teams learn from every programme.

Successful methods can then be transferred through the wider multinational organisation.

This is not unusual.

It is how multinational manufacturing organisations learn.

But it creates a potential asymmetry when manufacturing subsequently relocates.

The multinational can retain what the British factory learned after Britain loses the production that helped create that learning. [7]

Britain then loses something still more significant.

Not necessarily the knowledge already created.

It loses the environment that creates the **next generation of knowledge**.

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10. The Capability You Cannot Simply Reshore

There are two very different types of industrial capital.

Physical capital

- Factories.
- Machines.
- Robots.
- Tooling.
- Test equipment.
- Automation.
- Buildings.

Given sufficient capital, these can be purchased.

Then there is:

Knowledge capital

- DFMEA.
- PFMEA.
- APQP.
- PPAP.
- Supplier development.

- Launch experience.
- Process capability.
- Metrology.
- Design interrogation.
- Logistics discipline.
- Problem solving.
- Root-cause analysis.
- Quality assurance.
- Design for manufacture.
- Continuous improvement.

This capability cannot simply be bought. [8]

It has to be learned, practised and embedded.

And **embedded** is important.

In a mature automotive organisation, these disciplines stop being individual techniques.

They become behaviours.

An experienced automotive engineer instinctively asks:

- What could fail?
- Can the process actually hold the tolerance?
- Can the supplier repeatedly achieve it?
- What happens after 100,000 cycles?
- How will this be measured?
- What is the root cause?
- Does this design unnecessarily create manufacturing risk?
- What happens if the component arrives four hours late?
- How does the customer experience this failure?

Those questions are not always asked because an APQP manual requires them.

They become part of the person's professional instinct.

For experienced automotive employees:

manufacturing discipline becomes a way of life.

11. Automotive Is a School of Manufacturing

That capability matters beyond automotive.

Automotive has historically trained generations of:

- manufacturing engineers;
- quality engineers;
- production managers;
- toolmakers;
- metrologists;
- purchasing specialists;
- logistics specialists;
- supplier-development engineers;
- maintenance engineers;
- design engineers;
- technicians;
- and skilled operators.

Those people subsequently move into other industries.

- Aerospace.
- Rail.
- Defence.
- Energy.
- Medical devices.
- Electronics.
- Advanced materials.
- General engineering.

They take automotive manufacturing discipline with them.

Automotive therefore represents more than an industrial sector.

It is part of Britain's manufacturing skills infrastructure.

If automotive volume becomes progressively smaller, the training ground becomes progressively smaller with it.

12. Premium and Luxury Vehicles Depend on That Skills Reservoir Too

Britain's exceptional premium and luxury vehicle manufacturers can sometimes appear separate from the mass-production automotive industry.

They are not.

Their volumes are lower.

Their craftsmanship may be different.

Their customers are different.

But they still require outstanding:

- design engineers;
- vehicle engineers;
- manufacturing engineers;
- quality engineers;
- production specialists;
- programme managers;
- supplier-development engineers;
- and technical leaders.

And there is evidence that this expertise circulates between volume and premium manufacturers.

Aston Martin's current Chief Technical Officer, **Ian Hoban**, developed his career through Jaguar Land Rover and Bentley before joining Aston Martin. Aston Martin credits him with engineering and product-delivery leadership on vehicles including the Jaguar F-Type and Bentley Continental GT. [10]

Aston Martin's long-serving Chief Creative Officer **Marek Reichman** previously worked at **Ford, BMW, Land Rover, Rover Cars and Nissan** and was Design Director at Ford North America before joining Aston Martin. [11]

Other Aston Martin appointments have included people joining from **MG Rover** and **Jaguar Land Rover**.

The historical development of Aston Martin's DB7 provides an especially interesting example. Aston Martin itself records that the programme used the former JaguarSport manufacturing facility, Jaguar engine architecture and the international proving-ground resources available through then-owner Ford.

Bentley provides evidence of knowledge movement in the opposite direction too. Its apprenticeship system explicitly enables employees to work elsewhere within Volkswagen Group, while apprentices from other Volkswagen businesses visit Crewe to learn capabilities specific to luxury manufacturing such as wood and leather work. [12]

This evidence does **not** justify claiming that every outstanding engineer in Britain's luxury industry learned their trade in mass production.

But it does demonstrate something important.

Premium automotive capability is not isolated from the wider automotive skills ecosystem.

- The people, techniques and experience circulate.
- A designer may move from Nissan or Ford into Aston Martin.
- An engineer may move through JLR, Bentley and Aston Martin.
- A premium plant may draw on group technology generated by millions of vehicles elsewhere.
- A volume operation can therefore help create the people and methodologies on which specialist manufacturing subsequently depends.

That gives Britain's declining volume base another significance.

The question is no longer only whether premium manufacturers require component economies of scale.

It is:

What happens to Britain's premium automotive excellence if the wider industry that has historically helped train its engineers and develop its manufacturing disciplines becomes progressively smaller?

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13. Scale Beneath the Premium Vehicle

Premium and luxury manufacturers also rely on economic scale in ways that are not immediately visible in their own production numbers.

Bentley can produce relatively few Bentleys because it belongs to Volkswagen Group. [13]

Rolls-Royce benefits from BMW Group.

Aston Martin has accessed technology from major international partners.

The cost of:

- powertrains;
- electrical architecture;
- software;
- electronics;
- regulatory development;
- testing;
- validation;
- research;
- supplier development;
- and manufacturing technology

does not need to be recovered solely from the volume of one luxury marque where technology and capability are shared.

Scale therefore sits underneath premium manufacturing.

That leads to a better question than whether Britain has become too dependent upon expensive cars.

Can Britain retain a globally competitive premium and luxury automotive sector if the volume manufacturing ecosystem beneath it continues to contract?

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14. JLR — Building Resilience at Lower Break-Even Volume

There is a revealing contemporary example within Britain itself.

In June 2026, JLR announced enterprise measures intended to deliver £1.7 billion of savings and return its break-even volume towards 300,000 vehicles over the following two years. At the same time, the company set out an ambition for medium-term double-digit revenue growth. [27]

The distinction is important. JLR is not presenting 300,000 vehicles as a production target. It is seeking to make the business more resilient by reducing the volume required to break even while continuing to pursue growth.

That demonstrates how a premium manufacturer can adapt its economics to operate more robustly at lower volumes.

But it also raises a wider industrial question.

A vehicle manufacturer can reduce its break-even point. The automotive ecosystem around it cannot necessarily adjust at the same rate.

Suppliers still require viable production runs. Tooling companies still require programmes. Logistics networks still require throughput. Engineers and technicians still require products to develop, launch and improve. Apprentices still require an industrial environment in which to learn.

JLR's strategy is therefore evidence of commercial adaptation rather than evidence that volume no longer matters. For the company, greater resilience at lower break-even volume is a strength. For the wider UK automotive ecosystem, the continuing reduction in aggregate vehicle volume remains a separate question.

15. The Reshoring Paradox

Industry Wales experience suggested that reshoring frequently required a cost advantage approaching 30% before changing from an established overseas source became commercially compelling. [N1]

The practical reasoning was broadly:

approximately 10% could disappear when the incumbent supplier reacted commercially;

approximately 10% could be consumed through transfer, tooling, implementation and disruption;

and another approximately 10% might be required for qualification, testing, validation and customer approval.

These percentages should not be treated as an industry-wide scientific rule.

They represent practitioner experience.

But they illustrate something important:

offshoring and reshoring are not symmetrical.

Manufacturing can move because another source offers an incremental economic advantage.

Winning the capability back may require a much larger advantage because the incumbent supply chain is already established and validated.

And once the skills and supplier infrastructure have disappeared, the barrier is higher again.

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16. The Hollowing Out Preceded the Volume Collapse

WMG research into UK automotive reshoring recorded local content exceeding 90% in the early 1970s. [9]

By the period examined in its later work, direct OEM sourcing from the UK supply base was around 44%, while UK value further upstream was only somewhat above 20%.

The report described a **significant hollowing out of the UK supply base**.

The timing is crucial.

This concern existed when UK automotive production was recovering strongly.

The supply chain had already become thinner **before British car production subsequently fell 58%.**

That raises an important new question:

What happens when an already hollowed-out supply chain loses more than half of the vehicle volume supporting it?

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17. The Industrial Feedback Loop

A potential feedback mechanism is beginning to emerge:

vehicle volume falls

↓

supplier volume falls

↓

supplier economics weaken

↓

UK investment becomes harder to justify

↓

investment and employment move elsewhere

↓

domestic capability becomes thinner

↓

more components and technology are sourced elsewhere

↓

the UK becomes less competitive for future programmes

↓

vehicle volume falls again

This remains a hypothesis.

But Germany now provides disturbing contemporary evidence that some of these mechanisms are operating there as well.

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18. Germany — The Survivor?

Germany initially appears to provide the obvious counterexample to Britain.

Its domestic manufacturers remain powerful.

- Volkswagen Group.
- BMW.
- Mercedes-Benz.
- Porsche.

Its Tier 1 sector remains formidable.

- Bosch.
- ZF.
- Schaeffler.
- Mahle.

These companies retain enormous engineering, intellectual-property, investment and purchasing capability under German strategic control.

Germany therefore retained something Britain progressively lost:

the industrial headquarters.

Its production numbers also remain much larger.

German passenger-car production was: [14]

5,746,808 in 2016

and:

4,148,836 in 2025.

That is a decline of approximately:

28%.

Serious.

But much smaller than Britain's 58% decline.

Germany also manufactured around **1.67 million electrified cars in 2025**, making it the world's second-largest electric-car production location after China. [15]

On the surface, Germany therefore appears to have survived the automotive transformation considerably better than Britain.

But look more closely.

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19. Or Is Germany Simply Behind Britain on the Same Journey?

German automotive employment peaked in 2018.

By 2024 approximately **61,000 jobs had already disappeared**. [16]

Employment among German component manufacturers had fallen to approximately **266,800**, its lowest level since 1997.

The deterioration subsequently accelerated.

VDA warned in May 2026 that approximately **100,000 German automotive jobs had already been lost since 2019**, and projected that another **125,000** could disappear by 2035 under current conditions. [18]

More revealing still is what German automotive companies themselves say they are doing.

A June 2026 VDA survey found: [17]

67% of surveyed companies were postponing, cancelling or moving investments originally planned for Germany.

Only:

2%

intended to increase investment in Germany.

54% were reducing their German workforce.

Only:

3% were increasing it.

And among companies cutting German employment:

44% were simultaneously increasing employment abroad.

Even research and development is moving.

Two-thirds expected to reduce German R&D spending, while around half expected to increase R&D investment overseas.

This should make Britain pay attention.

Because that sequence sounds familiar.

Investment moves.

Employment follows.

Engineering follows.

Supplier capability weakens.

Domestic production becomes less economically attractive.

That is strikingly similar to the mechanism Britain may have experienced earlier.

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20. Germany Is Also Moving Away From Volume Cars

There is another particularly important finding.

VDA itself acknowledges that high labour and energy costs have made **volume-car production increasingly unattractive in Germany**. [16]

It says small cars have not been manufactured domestically for several years and that remaining compact-car production is due to end in 2027.

At the same time, Germany has increasingly specialised in higher-value models.

That deserves emphasis.

Germany may be beginning to make the same strategic transition Britain made earlier:

from volume towards higher-value vehicles.

Germany starts from a far stronger position.

- It has much greater volume.
- Its domestic OEMs remain globally enormous.
- Its Tier 1 companies remain internationally powerful.
- Its engineering architecture remains largely intact.

That may allow Germany to sustain the transition successfully.

But the direction is uncomfortable.

Britain knows what can happen when mass-market production progressively disappears beneath a high-value automotive sector.

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21. German OEMs Have Already Globalised Their Scale

German ownership also disguises another important transformation.

German-controlled manufacturers made approximately:

13.3 million cars globally in 2025. [19]

But only:

4.15 million

were manufactured in Germany.

Approximately seven out of ten cars made by German OEMs are now built overseas.

That is a crucial distinction.

Germany has retained ownership.

But an increasing proportion of the production controlled by that ownership takes place elsewhere.

The industrial decision-making remains German.

The manufacturing capability increasingly does not have to be.

This may prove to be Germany's protection.

Or it may simply delay the domestic consequences.

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22. The Tier 1 Warning Is Already Visible

ZF illustrates the pressure.

At the end of 2025 ZF employed approximately **153,000 people globally**, including approximately 49,000 in Germany. [20]

Its German workforce had already fallen by just over 5% during 2025.

ZF is working towards eliminating **11,000–14,000 German positions**, while restructuring its electrified-powertrain operations.

This is not a fringe supplier.

It is one of the world's largest automotive technology companies.

So the German question should now become one of the central questions in this paper:

Has Germany successfully resisted the structural forces that transformed British automotive manufacturing?

Or:

has its larger scale, stronger domestic ownership and deeper Tier 1 base simply meant that the same forces take longer to become visible?

We cannot yet answer that definitively.

But the evidence means the question can no longer be dismissed.

23. Germany's Remaining Advantage

There is nevertheless one profound difference.

Suppose German domestic production falls substantially.

Volkswagen remains German.

BMW remains German.

Mercedes-Benz remains German.

Bosch remains German.

ZF remains German-controlled.

Schaeffler remains German.

Mahle remains German.

The global manufacturing footprint may move.

But much of the:

- technology;
- R&D;
- corporate knowledge;
- global purchasing;
- platform strategy;
- capital allocation;
- and intellectual property

can remain connected to German-controlled organisations.

Britain did not retain that same ownership architecture.

That may ultimately prove the crucial difference between Britain's journey and Germany's.

Germany may therefore be travelling along part of the same road.

But:

it is travelling with considerably more industrial baggage still on board.

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24. Then Came China

China changes the scale of the discussion completely.

In 2025 China manufactured approximately:

29.9 million passenger cars. [19]

Germany manufactured approximately 4.15 million.

Britain manufactured 717,371.

Chinese passenger-car exports reached approximately six million during 2025. [19]

And the expansion is continuing.

In August 2026 Chinese passenger-vehicle exports were reported to have risen 77.5% year-on-year, even while domestic Chinese sales were declining. Chinese manufacturers are increasingly directing excess capability into world markets.

China is therefore moving from:

manufacturing for China

towards:

manufacturing for the world.

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25. China Built More Than Assembly Capacity

China's success cannot simply be explained by cheap labour.

It built:

- battery manufacturers;
- electronics suppliers;
- motor manufacturers;
- materials companies;
- software capability;
- tooling suppliers;
- automation;

- vehicle manufacturers;
- and increasingly sophisticated domestic Tier 1 organisations.

It also learned.

Repeatedly.

At enormous scale.

The manufacturing principle is familiar:

- **Build more.**
- **Learn faster.**
- **Reduce cost.**
- **Improve the product.**
- **Build more again.**

- Scale creates experience.
- Experience improves processes.
- Improved processes reduce cost.
- Lower cost expands markets.
- Expanded markets create further scale.

That flywheel is difficult to compete with once it gains momentum.

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26. China Is Choosing the Industries It Wants Next

China also attempts to influence what industries it will dominate tomorrow.

Its 2026–2030 planning cycle targets advanced manufacturing and technologies including: [21]

- new energy;
- advanced materials;
- AI;
- robotics;
- semiconductors;
- aerospace;
- hydrogen;
- quantum technology;

- and other emerging industries.

It then uses multiple mechanisms to alter the economics of developing them.

- Research support.
- Tax treatment.
- Manufacturing incentives.
- Finance.
- Industrial funds.
- Infrastructure.
- Demonstration markets.
- Supplier development.
- And long-term planning.

This should not be romanticised.

Industrial policy can create overcapacity. [22]

Capital can be wasted.

Companies can be supported that should fail.

Trade partners have challenged some forms of Chinese state support.

But the strategic intent is difficult to misunderstand.

China identifies capabilities that it believes will matter in the future and attempts to build the industrial ecosystem before global demand fully develops.

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27. The Little Giants

China's “Little Giants” programme makes this particularly relevant to Britain's Tier 1 history.

By 2030 China aims to develop approximately:

22,000 specialist Little Giant SMEs [23]

and:

600 specialist industrial clusters.

The objective is not merely to support today's enormous corporations.

It is to create tomorrow's strategic suppliers.

That is effectively an attempt to cultivate the next generation of:

- Bosch.
- GKN.
- Lucas.
- CATL.

or whatever companies the next industrial revolution requires.

Britain once generated such companies.

China is trying to generate them deliberately.

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28. Europe Is Beginning to Respond

European policymakers increasingly recognise the problem.

The European Commission's proposed Industrial Accelerator Act includes: [24]

- “Made in EU” requirements;
- local industrial-value considerations;
- public-procurement mechanisms;
- measures connected with foreign investment;
- and support for strategic manufacturing.

And the warnings from European industrial leaders are becoming increasingly explicit.

Gestamp chairman Francisco Riberas warned in September 2026 that Europe's prosperity is threatened by automotive decline, noting that European vehicle production has fallen approximately **20–25% since 2017** and arguing for a more coordinated long-term industrial approach comparable with China. [25]

This is significant because Gestamp is itself a global Tier 1.

The warning is not simply coming from politicians or academics.

It is coming from inside the supply chain.

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29. Britain and China Used Foreign Investment Differently

This leads to a proposition that should be tested carefully.

Britain used foreign investment highly successfully to:

rebuild industrial production after indigenous ownership had declined.

China also welcomed enormous foreign automotive investment.

But it increasingly used that investment alongside policies intended to:

- **build indigenous industrial capability.**
- Joint ventures.
- Supplier development.
- Skills.
- Technology.
- Domestic competitors.
- Research.
- Scale.
- Local supply chains.

Eventually the domestic companies themselves became international competitors.

This does not mean foreign investors simply handed China its automotive industry.

Chinese companies created enormous capability themselves.

But the strategic distinction remains worth considering:

Britain used foreign investment primarily to sustain industrial presence.

China increasingly used foreign investment as one component of building indigenous industrial power.

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30. What Britain Still Has

Britain is not starting again.

Its remaining capability is substantial.

- Nissan.
- Toyota.
- MINI.

- JLR.
- Bentley.
- Rolls-Royce.
- Aston Martin.
- McLaren.
- Motorsport Valley.
- World-class universities.
- Advanced engineering.
- Battery research.
- Propulsion.
- Materials.
- Manufacturing technology.
- Component companies.

And, critically:

people.

People carrying decades of embedded automotive manufacturing knowledge.

That may be one of Britain's most valuable remaining industrial assets.

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31. What Happens If the Chain Breaks?

Imagine the extreme case.

Britain eventually ceases to manufacture cars at meaningful scale.

The immediate losses would be visible.

- Factories.
- Jobs.
- Exports.
- Investment.
- Supplier turnover.

The deeper losses would take longer.

- An engineer with forty years of launch experience retires.
- The person beside them has only ten years because fewer programmes followed.

- The apprentice intake shrinks.
- The supplier quality engineer works in another industry.
- The specialist toolmaker diversifies.
- The Tier 2 supplier closes.
- The metrology company stops investing.
- The university loses industrial partners.
- The production engineer moves abroad.
- Slowly the embedded culture weakens.

Perhaps Britain later decides it wants the industry back.

Money can build a factory.

Money can purchase robots.

Money can purchase presses.

Money can purchase machine tools.

But it cannot purchase:

forty uninterrupted years of experience tomorrow morning.

That accumulated capability has to be recreated.

Programme by programme.

Failure by failure.

Launch by launch.

Generation by generation.

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32. Six Conclusions — and Six Questions

Volume

Britain manufactured 1.72 million cars in 2016.

It manufactured 717,371 in 2025.

More than one million annual units disappeared.

Can a deep domestic automotive supply chain remain economically viable on that scale?

Ownership

Foreign investment preserved and rebuilt large parts of British automotive manufacturing.

But many strategic decisions now sit overseas.

Can industrial presence substitute indefinitely for indigenous industrial ownership?

Tier 1 Scale

Britain once possessed major globally competitive automotive suppliers including GKN, Lucas, BTR, BBA, T&N and Pilkington.

There is no obvious present-day British-owned equivalent population operating at Bosch, ZF or Schaeffler scale.

What happens when a manufacturing economy loses the corporate layer between its SMEs and its vehicle manufacturers?

Strategic Control

- Product allocation.
- Platform development.
- Technology investment.
- R&D.
- Purchasing.
- Factory footprint.
- Capital allocation.

Somebody decides these things.

Increasingly, for Britain's automotive industry, that somebody is elsewhere.

How much does the location of the factory matter if the location deciding its next product is overseas?

The Mass-Market Product

Britain still manufactures Qashqai, Corolla, Juke and MINI.

But it no longer owns a volume OEM producing Britain's equivalent of the:

- Golf.
- Corolla.
- Clio.
- Fiesta.
- or Model T.

Can premium manufacturing remain globally competitive indefinitely without sufficient volume activity beneath it?

Capability

And finally:

- factories can be rebuilt.
- Machines can be purchased.
- Technology can be licensed.
- Capital can move.

But generations of embedded manufacturing capability cannot simply be switched back on.

- It is learned.
- Practised.
- Improved.
- Passed on.
- And embedded.

Eventually it becomes:

a way of life.

The question Britain ultimately needs to answer may therefore not be:

How many cars should Britain manufacture?

It may be:

How much automotive manufacturing capability can Britain afford to lose before rebuilding it becomes harder than protecting what remains?

Conclusion

- Britain's automotive story is not simply one of failure.
- Foreign investment brought enormous benefits.
- It rebuilt vehicle production.
- Introduced new technology.
- Improved manufacturing practices.
- Raised quality.
- Developed people.
- And produced decades of successful exports.
- At its peak, that model helped Britain manufacture more than 1.7 million cars annually.
- But the environment has changed.
- Production has fallen sharply.
- Supplier economics have weakened.
- Industrial ownership has diminished.
- China has created unprecedented manufacturing scale.
- And Germany — once the apparently reassuring European comparison — is itself showing symptoms that Britain should recognise.
- Investment is moving abroad.
- Employment is following.
- R&D is beginning to follow.
- Volume models are becoming increasingly difficult to manufacture domestically.

Germany has far greater scale and retains powerful domestic OEMs and Tier 1s.

That may protect it.

But we should no longer assume it has escaped.

Germany may not be experiencing a different problem.

It may simply be further back along the same road.

China, meanwhile, is attempting to ensure that the next generation of industries, suppliers, technologies and manufacturing knowledge develops within its economy.

The contrast is stark.

Britain spent decades asking how to attract manufacturing investment.

China increasingly asks:

what industrial capability do we want to own twenty years from now?

Perhaps that is the question Britain should be asking too.

Because the most valuable thing an automotive industry produces may not ultimately be the car.

It may be:

the capability to manufacture the next one.

A Final Observation on Volume

There is one final thread connecting much of the evidence in this paper.

In automotive manufacturing, volume has always been an important industrial foundation. This is not a new concept. Henry Ford demonstrated more than a century ago how scale, productivity and affordability could reinforce one another.

Britain itself has demonstrated the value of automotive scale more than once: first through its indigenous mass-production industry and later through the successful inward-investment model that helped UK car production return to more than 1.7 million vehicles in 2016.

Those periods of scale supported far more than vehicle assembly. They sustained suppliers, engineering, tooling, logistics, apprenticeships, manufacturing disciplines and the repeated learning through which industrial capability develops.

Britain now has a different automotive mix. It retains important volume production, world-class premium and luxury manufacturers, substantial engineering capability and significant new investment. Some manufacturers are also adapting successfully to operate more resiliently at lower volumes. That evolution should not be confused with industrial failure.

But neither should the economics of scale be ignored.

China has built extraordinary automotive manufacturing scale and is increasingly combining that scale with technology and affordability. In 2025, China accounted for nearly three-quarters of global electric-car production, while more than 13 million electric cars were sold in its domestic market. Around 30% of Chinese battery-electric models had an entry price below US$20,000, and affordable Chinese models are increasingly contributing to EV growth in emerging markets. [28]

That matters because premium and luxury vehicles can generate exceptional value, but the largest pool of potential customers remains in the broader market. Mass-market vehicles generate the volumes that can support extensive supply chains, repeated production learning and economies of scale.

Britain therefore does not need to choose between premium excellence and volume manufacturing. The more useful question is whether it can preserve enough of both.

The evidence in this paper does not suggest that Britain should attempt to recreate the automotive industry of the past. Nor does it diminish the achievements of the manufacturers and suppliers that continue to invest here.

It does suggest, however, that as the global industry is reshaped by electrification, software, new entrants and Chinese scale, Britain should be cautious about allowing declining volume to become accepted as an inevitable feature of its automotive future.

Henry Ford demonstrated the industrial power of automotive scale more than 100 years ago. The technology has changed beyond recognition. The underlying question of scale has not.

The challenge for Britain is therefore not simply to manufacture cars, or even to manufacture exceptional cars. It is to retain sufficient scale, ownership, supply-chain depth and capability to remain an automotive nation able to shape what comes next.

References and Sources

Reference convention. Numbered references support externally verifiable factual claims in the paper. GSCI calculations and practitioner evidence are identified separately in the Methodological and Practitioner Notes that follow.

[1] Society of Motor Manufacturers and Traders (SMMT), “Tough year for Auto but new models and Industrial Strategy can deliver growth”, January 2026; and SMMT UK Car Manufacturing data. 2025 UK car output: 717,371; exports: 555,826 (77.5%).

[2] SMMT, Motor Industry Facts 2017 and 2016 UK production reporting. UK car production in 2016: 1,722,698. The 2017 facts publication also provides manufacturer-level production used for the 2016 comparison.

[3] SMMT, Motor Industry Facts 2025, manufacturer-level UK production data for 2024. GSCI compares the same five leading 2016 manufacturers — JLR, Nissan, BMW/MINI, Toyota and Honda — with their 2024 UK output.

[4] Honda Motor Europe, announcement and confirmation of the proposed cessation of vehicle production at Swindon, February and May 2019. Honda stated that electrification required

revision of its global manufacturing system and concentration of production resources in regions where it expected high production volumes.

[5] "Resources, Autonomy and Strategy: Perceptions", Chapter 3, citing FT Automotive (1998b). The historical review records that in 1990 25 European component manufacturers had automotive-related sales above US$1bn, six of them British: GKN, Lucas, BTR, Pilkington, T&N and BBA.

[6] House of Commons Trade and Industry Committee, evidence on the UK automotive components sector, 2000–01. The evidence states that Japanese manufacturers encouraged UK suppliers to adopt demanding production methods in quality, efficiency and logistics, contributing to considerable productivity gains, especially in the first-tier supply base.

[7] Rabbiosi, L. (2011), "Subsidiary roles and reverse knowledge transfer: An investigation of the effects of coordination mechanisms", Journal of International Management, 17(2), 97–113. See also Kogut, C.S. & Mello, R.C. (2017), "Reverse knowledge transfer in multinational companies: A systematic literature review", Brazilian Administration Review, 14(1).

[8] The paper's treatment of embedded manufacturing knowledge is consistent with the literature on tacit knowledge, learning through experience and organisational knowledge transfer. For automotive-specific evidence of cluster knowledge persistence and connectedness, see Mudambi et al. (2015), "Thriving innovation amidst manufacturing decline: the Detroit auto cluster and the resilience of local knowledge production", Industrial and Corporate Change, 24(3), 613–634. This literature also cautions that knowledge does not disappear automatically when production falls.

[9] WMG, University of Warwick, Reshoring Insights for the Automotive Industry. The report records local content above 90% in the early 1970s, direct OEM sourcing to UK Tier 1 suppliers at about 44%, upstream UK content somewhat above 20%, and describes a significant hollowing out of the UK supply base.

[10] Aston Martin Lagonda, "Ian Hoban — Chief Technical Officer". Aston Martin records Hoban's engineering and product-delivery career at Jaguar Land Rover and Bentley, including work associated with the Jaguar F-Type and Bentley Continental GT.

[11] Aston Martin Lagonda, "Marek Reichman — Executive Vice President and Chief Creative Officer". Aston Martin records earlier design roles at Ford, BMW, Land Rover, Rover Cars and Nissan, including Design Director at Ford North America.

[12] House of Commons Business, Innovation and Skills Committee, written evidence submitted by Bentley Motors Ltd, 2012. Bentley described apprentices as future experts, opportunities to work elsewhere within Volkswagen Group, and reciprocal visits by Group apprentices to Crewe to learn luxury-sector skills including wood and leather work.

[13] Volkswagen Group Annual Report 2024/2023, Premium Platform Electric definition and platform strategy. Volkswagen states that PPE enables high synergies particularly between

Audi, Porsche and Bentley. This supports the paper's distinction between marque volume and the larger industrial scale available through a group.

[14] Verband der Automobilindustrie (VDA), passenger-car production statistics. German domestic passenger-car production: 5,746,808 in 2016 and approximately 4.15 million in 2025.

[15] VDA, 2025 production outlook and annual reporting. Germany produced/was reported at approximately 1.67–1.7 million electric passenger cars in 2025 and retained its position as the world's second-largest electric-car production location.

[16] VDA, Automotive Insight 2024 and related employment/production analysis. Employment in the German automotive industry had fallen by almost 61,000 from the 2018 record by 2024. VDA also identifies a shift towards higher-value vehicles and states that high labour and energy costs make production of volume models increasingly unattractive in Germany.

[17] VDA, "Survey: German Automotive SMEs Under Great Pressure", 16 June 2026. 67% reported postponing, relocating abroad or cancelling investments planned for Germany; 54% were reducing German employment; 44% of those cutting jobs in Germany were simultaneously expanding employment abroad; R&D intentions also shifted towards overseas locations.

[18] VDA, "Employment Trends 2035", 12 May 2026. VDA estimated around 100,000 German automotive jobs had already been lost since 2019 and warned of a further 125,000 net jobs at risk by 2035 under the assumed framework and business conditions.

[19] VDA, Automobil Insight 2025 / international production analysis. In 2025 German OEMs produced about 9.15 million passenger cars abroad in addition to approximately 4.15 million domestically; China produced about 29.9 million passenger cars and exported about 6.0 million.

[20] ZF Friedrichshafen AG, Annual Result 2025, March 2026. ZF reported 153,153 employees worldwide and 49,210 in Germany at year-end 2025, with the German workforce down just over 5%; it reiterated the planned reduction of 11,000–14,000 German positions.

[21] National People's Congress of the People's Republic of China, Outline of the 15th Five-Year Plan for National Economic and Social Development, 2026–2030. The plan identifies strategic emerging industries including next-generation IT, new energy, new materials, intelligent connected NEVs, robotics, biomedicine, high-end equipment and aerospace, alongside future industries including quantum technology, hydrogen/fusion, brain-computer interfaces, embodied intelligence and 6G.

[22] Garcia-Macia, D. et al. (2025), "Industrial Policy in China: Quantification and Impact on Misallocation", IMF Working Paper 25/155; and IMF 2026 China Article IV Staff Report. IMF staff estimate an equivalent fiscal cost of major industrial-policy instruments of about 4–4.4% of GDP in 2023, while also identifying risks including misallocation and excess production.

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600 specialised industrial clusters by 2030, alongside higher R&D intensity and support for strategic technologies.

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[27] JLR, 'JLR sets out path to double digit revenue growth through greater propulsion flexibility and increased focus on North America', 17 June 2026. JLR announced enterprise missions targeting £1.7bn of savings to return break-even volumes towards 300,000 vehicles over two years, alongside an ambition for medium-term double-digit revenue growth.

[28] International Energy Agency (IEA), Global EV Outlook 2026, 'Trends in electric cars' and Executive Summary. The IEA reports more than 13 million electric-car sales in China in 2025, China accounting for nearly 75% of global electric-car production, around 30% of Chinese BEV models with entry prices below US$20,000, and lower-cost Chinese models contributing strongly to EV adoption in emerging markets.

GSCI Analysis and Methodological Notes

Scope and terminology. "British-owned" is used in this paper to mean ultimate strategic corporate control and headquarters/decision-making control located in the UK, rather than the nationality of every shareholder. "Tier 1" refers to a supplier that supplies engineered systems, modules or components directly to a vehicle manufacturer. "Industrial presence" and "industrial ownership" are deliberately treated as separate concepts.

GSCI production calculation. The reduction from 1,722,698 UK cars in 2016 to 717,371 in 2025 is 1,005,327 cars, or approximately 58.36%. The paper rounds this to 58% and "more than one million cars".

GSCI five-manufacturer calculation. Using SMMT manufacturer data, the 2016 output of JLR (544,401), Nissan (507,444), BMW/MINI (210,973), Toyota (180,425) and Honda (134,146) totals 1,577,389. Comparing the same cohort with 2024 output of approximately 748,031 gives a

reduction of about 829,358 vehicles. This is a GSCI calculation from SMMT source data, not an SMMT conclusion.

Interpretation of causation. The paper does not attribute the UK production decline to a single cause. Brexit, pandemic disruption, semiconductor shortages, model cycles, electrification, energy and labour costs, tariffs, corporate strategy, plant allocation and individual company events can all affect output. The paper tests a structural proposition about scale, ownership, supplier economics and capability rather than claiming a single causal explanation.

Knowledge and capability. The distinction between physical and knowledge capital is analytical. The specific automotive disciplines listed — including DFMEA, PFMEA, APQP, PPAP, process capability, metrology, supplier development, launch management and root-cause problem solving — are used to illustrate accumulated manufacturing capability. GSCI's proposition is that mature capability is learned, practised and embedded until it becomes habitual professional behaviour. Academic work on tacit knowledge and learning supports the broader mechanism, but the phrase "manufacturing discipline becomes a way of life" is GSCI interpretation.

Reverse knowledge transfer. The proposition that knowledge developed in a UK subsidiary can be retained and reused by its multinational parent is supported by the established literature on reverse knowledge transfer. The paper does not claim that every relocation involved deliberate "extraction" of British knowledge; rather, it identifies a structural asymmetry: multinational groups can retain organisational learning after a particular UK operation contracts or closes.

Premium and luxury skills reservoir. The career examples from Aston Martin and Bentley demonstrate circulation of people and expertise between volume, premium and luxury automotive environments. They do not prove that every premium-sector engineer learned their trade in volume manufacturing. The paper therefore presents this as evidence of an interconnected skills ecosystem, not as a universal rule.

Germany comparison. The question "has Germany survived, or is it simply further back along the same journey?" is explicitly a GSCI hypothesis. Germany retains much greater domestic production, indigenous OEM ownership and Tier 1 scale than Britain. Recent VDA evidence on investment relocation, employment reductions and R&D movement makes the comparison legitimate to test, but it does not establish that Germany must follow the UK path.

China comparison. The China section distinguishes strategic intent from policy effectiveness. Chinese industrial policy includes tax incentives, finance, infrastructure, industrial funds, R&D support, demonstration markets and long-term planning. The paper also acknowledges overcapacity, misallocation and international trade disputes; it does not describe all Chinese industrial support as a single direct subsidy.

N1 — Industry Wales reshoring rule-of-thumb. The approximately 30% reshoring threshold is practitioner experience from Industry Wales work, not an independently established scientific or industry-wide rule. The illustrative logic is approximately 10% potential incumbent commercial

response, approximately 10% transfer/tooling/implementation/disruption, and approximately 10% qualification/testing/validation/customer approval. Its purpose is to explain why reshoring is not necessarily the mirror image of offshoring.

Evidence status. Where a statement is directly supported by a published source, a numbered reference is supplied. Where the paper calculates a result from source data, it is identified as GSCI analysis. Where it advances a mechanism or proposition beyond the source itself, it is framed as interpretation, hypothesis or practitioner experience.

Research and AI assistance disclosure. Generative AI tools were used under the direction of GSCI to assist with research collation, source discovery, data checking and drafting during the development of this white paper. GSCI defined the research questions, analytical framework and lines of enquiry; reviewed and challenged the outputs; selected and interpreted the evidence; and determined the conclusions and final wording. AI-generated output has not been treated as an evidential source: factual claims presented as evidence are attributed to the underlying published sources wherever practicable. GSCI retains editorial responsibility for the analysis and conclusions in this report.

Date of evidence. Public-source research was checked to 8 September 2026. Fast-moving corporate restructuring, production, employment and policy figures should be refreshed immediately before external publication if the release date moves materially beyond September 2026.

Source hierarchy. Primary industry bodies, company disclosures, parliamentary/government material and official policy documents are preferred. Academic literature is used for knowledge-transfer and capability mechanisms. Reputable news reporting is used selectively for very recent developments where primary documentation is not yet available or where the source is an interview.