
MARKET INTELLIGENCE REPORT

The Volume Trap

Why the cars that went viral on TikTok
and the cars being delivered in Europe
are not the same product

PRIMARY COVERAGE: BYD · NIO · XPENG · LI AUTO

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EXECUTIVE SUMMARY

Export Growth Is Not Value Creation

The internet has fallen in love with Chinese electric vehicles. Bloomberg and the Wall Street Journal are covering the karaoke cars, the rotating touchscreens, the AI copilots. In March 2026, Chinese NEV exports surged 139.9% year over year. Auto China 2026 was a display of global ambition without precedent. The headlines could not be stronger.

This report rejects the surface narrative. Through forensic analysis of SEC and HKEX filings and earnings call transcripts, we reveal a reality structurally disconnected from the headline growth story. Export volume is real. Export value creation is not. The structural reasons are not temporary. They are architectural.

CHINA DOMESTIC EV SALES Q1 2026

-21%

YTD vs. Q1 2025. Exports are capacity absorption, not strategic globalization.

OVERSEAS VEHICLE GROSS MARGIN

0-6%

Post-tariff, logistics, distribution. NIO and XPeng near zero. BYD 1 to 6%.

AUDITED SERVICES REVENUE OUTSIDE CHINA

~\$0

Across all four OEMs. No geographic software revenue line exists in any filing.

OVERSEAS ADAS ATTACH RATE

<2%

vs. 7 to 8% in China. Every export vehicle subsidizes chipmakers with no offsetting software income.

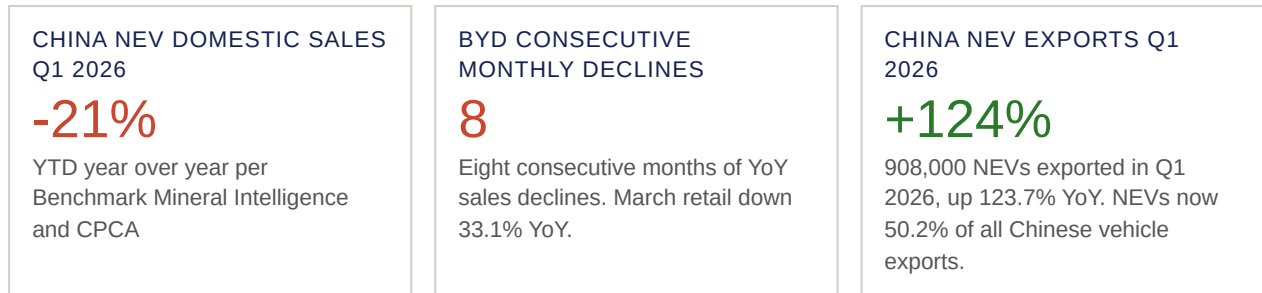
The consumer disappointment thesis. Consumers are forming purchase intent around in-car karaoke, AI voice companions, and battery swap videos on TikTok and YouTube. When they receive their vehicles, those experiences will not be there. The karaoke requires Chinese content licensing. The AI companion runs on Chinese cloud infrastructure. The ADAS mapping uses Baidu data that does not extend beyond China. The product that went viral and the product that arrives in the driveway are not the same product.

The disclosure pattern. None of the four OEMs discloses overseas software revenue, ADAS attach rates, or service gross margin in their audited filings. The same metrics used to justify software-company valuations in China produce zero audited disclosure for international operations. The absence is not a neutral data point. It is the most important one.

I. THE DOMESTIC CATALYST

Why Exports Are a Relief Valve, Not a Strategy

The export surge is not a proactive global expansion. It is a defensive response to a collapsing home market. Understanding this reframes the entire investment narrative.



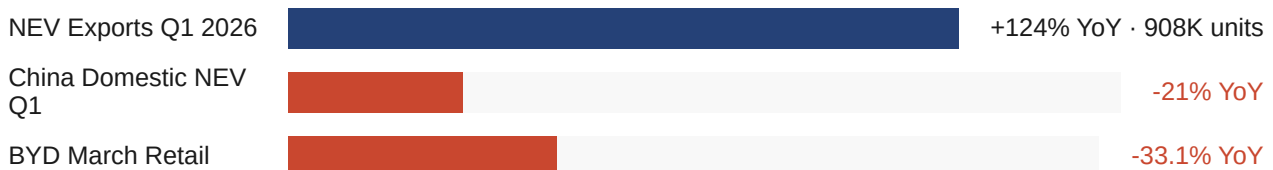
The data tells a single story: domestic inventory is building, demand has weakened, and the only available outlet for installed production capacity is the export market. BYD raised its 2026 export target to 1.5 million vehicles. XPeng is targeting overseas revenue above 20% of total. These are not strategic pivots. They are capacity absorption decisions made under domestic pressure.

The price war context. China's domestic NEV market has operated under sustained price war conditions. NIO's vehicle margin compressed from above 20% to the low teens. XPeng's margin was negative as recently as 2023, recovering to 13% through cost reduction, not pricing power. BYD's domestic average selling price declined quarter over quarter through Q4 2025. The export market offers temporary relief, but at structurally lower margins due to tariffs, logistics, and distribution costs that do not exist in the home market.

The Overcapacity Signal

Chinese OEM production capacity was built assuming domestic demand growth would continue at 2022 to 2024 pace. The 2026 demand shock exposed overcapacity sector-wide, with inventory days rising from 25 to 30 in 2025 to 45 to 60 days by Q1 2026. Exports absorb excess production. They do not generate the margin profile that justifies growth-stock valuations.

EXHIBIT 1 — CHINESE NEV EXPORT VS. DOMESTIC SALES DIVERGENCE (Q1 2026)



II. FILING FORENSICS

What the Audited Numbers Actually Disclose

The following analysis is derived entirely from audited SEC and HKEX primary sources. No analyst estimate or press release language is presented as fact without attribution.

NYSE: NIO · 20-F FY2025, FILED APRIL 10, 2026

NIO Inc.

Full year revenue: RMB 87.5B (\$12.5B) · Q4 first-ever operating profit: RMB 282.7M · Full year still loss-making

NIO's 20-F states explicitly: "Unless otherwise specified, the description of our vehicles, services and business models in this report refers to our business in China." This is the entire thesis in one sentence from the company's own filing. "Other sales" covering parts, accessories, power solutions, and technical R&D services is disclosed as a consolidated figure with no geographic breakdown. No overseas service revenue line exists anywhere in the filing.

NIO's BaaS model is the centerpiece of its service margin story in China. Europe has approximately 100 swap stations versus 3,600 in China. Europe BaaS penetration is below 3% of users versus above 40% in China. At Auto China 2026, a NIO Global Strategy executive stated publicly: "We cannot replicate our Chinese service ecosystem in Europe at scale. The cost and regulatory barriers are too high."

Zero audited overseas service revenue · BaaS does not travel

NYSE: XPEV · 6-K Q4 2025, FILED MARCH 20, 2026

XPeng Inc.

Q4 revenue: RMB 22.25B · First-ever quarterly profit: RMB 380M · Full year net loss: RMB 1.14B

XPeng's Q4 2025 "Services and Others" revenue surged 121.9% YoY to RMB 3.18B at a 74.6% margin, driving the company's first-ever quarterly profit. This was widely reported as proof of software monetization. The earnings release footnote tells a different story: this surge was "primarily driven by technical research and development services provided to a car manufacturer" — Volkswagen.

This is engineering services income from an OEM client, not consumer software subscription revenue from drivers. It is a B2B revenue stream that will not recur at the same scale in subsequent quarters. Using it to argue that XPeng has proven its software monetization model is analytically incorrect. The Q4 earnings call confirmed regulatory requirements remain "a significant hurdle" for autonomous driving deployment globally.

Volkswagen R&D fees, not driver subscriptions · ADAS pre-monetization outside China

II. FILING FORENSICS (continued)

NASDAQ: LI · 20-F FY2025, FILED APRIL 2026

Li Auto Inc.

Full year revenue: RMB 112.3B (\$16.1B), down 18.85% YoY · Net income: RMB 1.1B · Deliveries: 406,343 units

Li Auto remains the most financially stable of the four OEMs but faced its own demand shock in 2025, with full-year deliveries declining from 500,508 in 2024. Li Auto's Mind AI and Max ADAS package are China-only in terms of software monetization. International expansion is explicitly volume-focused. The 20-F contains no disclosure of service revenue by geography and no overseas ADAS subscription metric. Li Auto's EREV powertrain gives it a tariff advantage in Europe since PHEVs are exempt from EU countervailing duties that apply to BEVs, but this is a volume advantage, not a margin advantage.

Zero audited overseas service revenue

HKEX: 1211 · 2025 ANNUAL REPORT, FILED MARCH 27, 2026

BYD Company Limited

Full year revenue: CNY 804B (\$116.4B) · Net profit: CNY 32.6B · Overseas sales: 1.05M units, +145% YoY

BYD is the most nuanced case. Its overseas auto gross margin reached 28.1% in H2 2025 versus 17.2% domestically, with an overseas average selling price of CNY 186,000 versus CNY 127,000 domestically. This vehicle margin premium is real, driven by pricing power in markets without comparable domestic competition. It is not driven by software monetization. BYD's DiLink platform, which powers in-car karaoke among other features, has no disclosed overseas software subscription revenue. HKEX filings contain no geographic breakdown of connected services revenue.

Overseas vehicle margin genuinely higher · No software revenue disclosure outside China

II. FILING FORENSICS (continued)

EXHIBIT 2 — OVERSEAS ECONOMICS VS. CHINA DOMESTIC MODEL

Metric	China Domestic	Overseas Export
Vehicle Gross Margin (Premium OEMs)	13 to 18%	0 to 5%
Service Revenue as % of Gross Profit	20 to 30%	~0% (audited)
ADAS Software Attach Rate	7 to 8%	<2%
BaaS / Battery Swap Penetration (NIO)	>40% of users	<3% (Alice Ventures estimate)
Connected Feature Availability	Full ecosystem	Severely limited by GDPR, data law, content licensing
Disclosed Overseas Software Revenue	Multiple disclosed lines	\$0 across all four OEMs

Source: NIO 20-F FY2025; XPeng 6-K Q4 2025; Li Auto 20-F FY2025; BYD 2025 Annual Report; Alice Ventures analysis

The pattern mirrors Western OEMs. In our April 2026 report Manufacturing at Software Prices, we documented how GM, Ford, and Stellantis retreated from specific software financial disclosure as execution faltered. Chinese EV exporters are following the same pattern. In 2023 and 2024, NIO and XPeng used specific subscriber targets and ADAS penetration projections for international markets. By 2025 and 2026, those specifics have been replaced with volume metrics: units shipped, markets entered, store count. The software story exists in press releases. The SEC and HKEX filing layer contains none of it.

III. THE SERVICE MOAT THAT CANNOT TRAVEL

Four Structural Barriers, None Transitional

The Chinese EV model at home is a three-layer commercial proposition: hardware at the base, software as the differentiator, and recurring services as the margin engine. The international model is hardware only. The software and services layers face four structural barriers that are not transitional compliance gaps. They are permanent features of the regulatory, infrastructure, and cultural landscape in target export markets.

1. Regulatory and Data Barriers. The software that makes Chinese EVs compelling is inseparable from China's data infrastructure. Baidu's high-precision mapping, which powers ADAS navigation across most Chinese OEM platforms, is a China-licensed dataset that cannot be transferred to EU or US regulatory environments. GDPR and local data localization laws block the cloud connectivity model that enables personalized AI, OTA feature delivery, and real-time fleet data learning. ADAS systems must obtain UN R155 and R156 cybersecurity certification for the EU market, a process that typically takes one to two years and requires feature reduction. The result is a legally enforced product split. The Chinese-market vehicle and the European-market vehicle carry the same hardware. They do not carry the same software experience.

2. Content and Ecosystem Licensing. The in-car karaoke that has gone viral runs on Chinese music licensing agreements with Tencent Music, NetEase Cloud Music, and QQ Music. These licenses are China-only. The AI voice companions integrate with Chinese messaging platforms, payment systems, and content services that have no operational presence in target export markets. The infotainment experience that drives viral engagement is not a software feature. It is an ecosystem integration, and replicating it in Europe or North America would require rebuilding those partnerships entirely, at costs the current overseas vehicle margin cannot support.

III. THE SERVICE MOAT THAT CANNOT TRAVEL

(continued)

3. Infrastructure Economics. NIO's BaaS model depends on a dense battery swap network. Each swap station costs \$500,000 to \$1,000,000 in European markets, against land, permitting, and labor costs three to five times higher than in China. With under 20 daily swaps per station in Europe versus 60 to 100 in China, European swap stations are cash flow negative at current utilization. Scaling to the network density required for material service revenue would destroy shareholder value at these margins. This is not a capital allocation choice. It is a structural economic reality.

4. Consumer Willingness to Pay. European and North American consumers have demonstrated significantly lower willingness to pay for ADAS subscriptions than Chinese consumers. Ford's BlueCruise pricing was cut 38%, from \$800 to \$495 per year, within 18 months of launch. The market that pays RMB 720 per month for NIO's ADAS package does not map cleanly onto the market that cancelled BlueCruise subscriptions at scale. This is a product-market fit problem that no amount of feature parity will resolve in the near term.

"The hardware crosses the border. The soul of the product does not. And the soul is where the margin lives."

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IV. THE HARDWARE TAX

Every Export Vehicle Subsidizes a Chipmaker

Chinese OEMs pre-install \$1,500 to \$3,000 of compute hardware per vehicle — Nvidia Thor, Qualcomm Snapdragon Ride, or proprietary SoCs — at the point of production to enable future software and ADAS subscription sales. In China, where ADAS attach rates run 7 to 8% and software subscriptions contribute 20 to 30% of gross profit, the economics work. The hardware cost is recovered through software monetization over the vehicle's lifetime. Overseas, where ADAS attach rates are below 2% and software subscription revenue is effectively zero, the hardware cost is pure margin destruction.

Every vehicle sold in Europe or North America with the full compute stack is a subsidy to Nvidia or Qualcomm with no offsetting software income to recover it. Alice Ventures designates this the Hardware Tax, a term we first applied to Western OEM software strategies in our Manufacturing at Software Prices report (April 2026), and which applies with equal force here.

EXHIBIT 3 — THE HARDWARE TAX: DOMESTIC VS. OVERSEAS ECONOMICS

Metric	China Domestic	Overseas Export
Pre-installed compute cost per vehicle	\$1,500 to \$3,000	\$1,500 to \$3,000 (same hardware)
ADAS software attach rate	7 to 8%	<2%
Software revenue recovery	High, recovered over vehicle lifetime	Near zero at current attach rates
Net effect on vehicle margin	Cost absorbed by software revenue	Pure unrecovered cost
Primary beneficiary	OEM (software monetized)	Nvidia / Qualcomm / chip suppliers

Source: Alice Ventures analysis; OEM product specifications; earnings call disclosures. Compute cost per vehicle is Alice Ventures estimate.

The XPeng exception that proves the rule. XPeng's Q4 2025 services revenue surge was driven by Volkswagen R&D engineering fees, not consumer software subscriptions from drivers. This is a one-time B2B revenue stream that will not recur at the same scale. Using it to argue that XPeng has proven its overseas software monetization model is analytically incorrect, and potentially misleading to investors who did not read past the headline number.

V. SCENARIO MODELLING

Investment Implications 2026 to 2028

BASE CASE · 60% PROBABILITY The Volume Trap Persists		60%
DYNAMICS <p>Export volume growth remains strong through 2027 as domestic overcapacity drives continued international push. Overseas margins remain trapped at 0 to 5% for NIO and XPeng. BYD maintains overseas vehicle premium but no software revenue outside China. Non-China service revenue remains below 3% of total by 2028. The Street partially re-rates Chinese EV exporters from growth multiples toward manufacturing multiples.</p>	POSITIONING <p>Selective: BYD on overseas vehicle margin premium. Silicon providers collecting the Hardware Tax regardless of OEM software outcomes.</p> <p>Avoid: NIO and XPeng on software-company valuations. Any thesis premised on ADAS subscription revenue outside China before 2028.</p>	
BULL CASE · 20% PROBABILITY Regulatory Breakthrough Enables Feature Parity		20%
DYNAMICS <p>EU regulatory framework evolves to permit ADAS feature deployment at Chinese parity. Data localization rules modified or OEMs successfully build European cloud infrastructure. ADAS attach rates in Europe rise above 10% by 2028. NIO and XPeng achieve 8 to 10% overseas gross margin. Service revenue reaches 5 to 8% of gross profit outside China.</p>	POSITIONING <p>Constructive: NIO and XPeng with 40 to 60% valuation upside as software narrative becomes fundable with European evidence.</p> <p>Condition: EU data sovereignty and GDPR frameworks would require fundamental change. No legislative path currently visible.</p>	

V. SCENARIO MODELLING (continued)

BEAR CASE · 20% PROBABILITY		20%
Additional Barriers and Domestic Weakness		
DYNAMICS Additional EU tariffs beyond current rates. Domestic demand weakness persists into H2 2026. European consumer brand disappointment from the feature gap generates negative word-of-mouth that slows adoption. Overseas operations move from structurally breakeven to structurally loss-making.	POSITIONING Selective: BYD distressed debt if equity dislocates. Cash position (CNY 167.8B) provides buffer. Avoid: NIO equity on any 12-month horizon. Pure-play export growth stories with no path to service monetization outside China.	

VI. CONCLUSIONS

Five Definitive Forensic Findings

01 — Exports are a defensive response to domestic overcapacity, not a high-margin strategic choice. China's domestic EV market declined 21% YTD in Q1 2026 following the removal of purchase tax exemptions. BYD recorded eight consecutive months of domestic sales declines. The export surge is capacity absorption. Framing it as strategic globalization is commercially accurate but analytically misleading about the margin profile it implies.

02 — Overseas vehicle margins are structurally trapped at or near zero after tariffs and costs. Post-tariff, logistics, distribution, and compliance, NIO and XPeng achieve 0 to 5% gross margin in Europe. BYD achieves 1 to 6%. These are commodity-auto margins, not consistent with the software-company valuations the Street assigns on the basis of China-domestic software stories.

VI. CONCLUSIONS (continued)

03 — The service moat does not travel. Audited overseas software revenue is zero across all four OEMs. NIO, XPeng, Li Auto, and BYD disclose zero audited software or service revenue by geography for markets outside China. The ecosystem infrastructure — Baidu maps, Chinese content licensing, battery swap networks, Chinese cloud data — is legally and structurally inoperable in target export markets under current regulatory conditions.

04 — XPeng's celebrated "Services" surge was Volkswagen R&D fees, not consumer software subscriptions. The Q4 2025 XPeng services revenue surge that drove its first-ever quarterly profit was driven by technical R&D services provided to Volkswagen, not by driver-facing subscriptions. This is a B2B engineering revenue stream, not proof of consumer software monetization outside China. The distinction is material to the investment thesis and was absent from most analyst coverage.

05 — The consumer disappointment thesis is the most underappreciated forward risk. Millions of consumers in Europe, Southeast Asia, and eventually North America are forming purchase intent based on viral videos of in-car karaoke, AI companions, and battery swap. The product they will receive will not deliver those experiences. The feature gap between the Chinese-market vehicle and the export-market vehicle is permanent under current regulatory and ecosystem conditions.

CLOSING POSITION

"The Street has rewarded Chinese EV exporters for units shipped, not profits earned. The next re-rating will be driven by margins, not momentum. The global export story is not over, but its profit cycle has not yet begun."

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APPENDIX · METHODOLOGY & SOURCES

Primary Sources (All Directly Reviewed)

- NIO Inc. Form 20-F FY2025, filed April 10, 2026 (SEC EDGAR)
- XPeng Inc. Form 6-K Q4 and FY2025 results, filed March 20, 2026 (SEC EDGAR)
- Li Auto Inc. Form 20-F FY2025, filed April 2026 (SEC EDGAR)
- BYD Company Limited 2025 Annual Report, filed March 27, 2026 (HKEX)
- CAAM and CPCA Q1 2026 NEV sales and export data
- Benchmark Mineral Intelligence Q1 2026 Global EV Market Report
- NIO Q4 2025 earnings call transcript, March 2026
- XPeng Q4 2025 earnings call transcript and press release, March 20, 2026
- Li Auto Q4 2025 earnings call transcript, March 12, 2026
- Zecar, "XPeng P7+ Confirmed for Europe with Updated Tech in 2026," January 7, 2026
- Wall Street Journal, "The U.S. Wants to Ban China's High-Tech Cars," May 5, 2026
- BigGo Finance, BYD 2025 Annual Report Analysis, March 30, 2026
- CnEVPost, "XPeng Logs First-Ever Net Profit," March 20, 2026

Estimation Methodology

Overseas gross margin estimates for NIO (0 to 5%) and XPeng (1 to 4%) are Alice Ventures estimates derived from disclosed domestic margins, known EU tariff burdens of 17 to 35% on BEVs, ocean freight and distribution cost benchmarks, and earnings call guidance. These figures are not disclosed by any of the four OEMs as a regional margin breakdown and should be treated as analytical estimates, not audited data. All estimates are labeled as such throughout this report.

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