

SECTOR UPDATE

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EV/Mobility Team

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▶ AT A GLANCE

Hyundai Mobis (012330 KS, 500,000)

Target price **KRW950,000** **90%**

BUY

HL Mando (204320 KS, 49,000)

Target price **KRW95,000** **93.9%**

BUY

SL Corporation (005850 KS, 56,700)

Target price **KRW93,000** **64%**

BUY

Hwashin (010690 KS, 10,450)

Target price **KRW16,000** **53.1%**

BUY

SNT Motiv (064960 KS, 25,900)

Target price **KRW45,000** **73.7%**

BUY

Samwha Capacitor (001820 KS, 151,000)

Target price **n/a**

Not Rated

Samhyun (437730 KQ, 34,700)

Target price **n/a**

Not Rated



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Auto Parts (OVERWEIGHT)

Preparing for the mobility components era

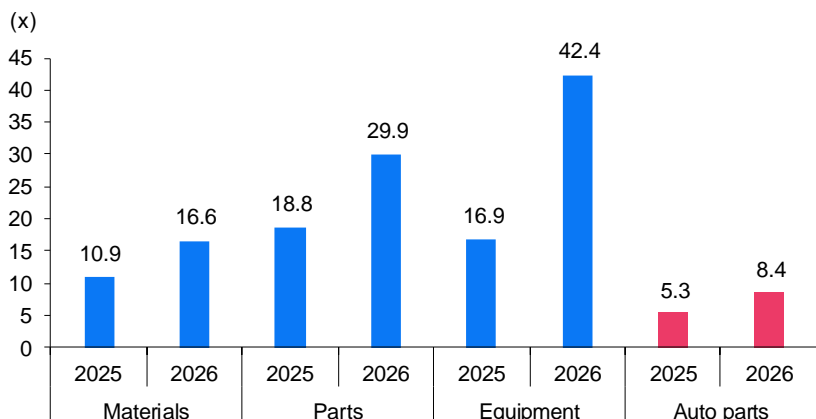
- The combination of the AI arms race and US-China supply-chain decoupling is positioning Korean hardware suppliers at the center of robotics supply chains serving Western markets.
- Just as Korean semiconductor materials, parts, and equipment (MPE) suppliers have rerated on their exposure to improving growth visibility at Samsung Electronics (SEC) and SK Hynix, so Hyundai Motor Group's (HMG) entry into robotics should drive similar upside for mobility-related MPE firms.
- Auto-parts suppliers integrated into HMG's robotics value chain—and with manufacturing footprints in the US—are poised to become key players in the Western robotics ecosystem.

WHAT'S THE STORY?

Mobility value chain in an early rerating phase: Mobility MPE firms are expanding from automotive into robotics applications, but their valuations remain at only a 20-30% premium to traditional automotive component multiples. We see three key investment merits.

- **Massive growth potential and favorable competitive dynamics:** Robotics is widely expected to become the largest industrial market in human history, with all major US tech giants entering the space. Chinese supply chains are likely to face structural barriers to Western robotics-system markets. The value chain supplying HMG's Boston Dynamics consists mainly of companies with US manufacturing footprints. Continued US-China decoupling should enhance Korean suppliers' positioning as preferred partners for US-based robotics OEMs.

Change in 1-year fwd P/E multiple: Semiconductor MPE firms vs mobility firms



Source: QuantiWise, Samsung Securities



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- **Strategic expansion from automotive to robotics:** Suppliers are leveraging decades of automotive engineering expertise to enter robotics with a limited R&D burden. Just as Tesla repurposed Model S/X production lines for Optimus assembly, automotive component manufacturers can similarly retool existing facilities for robot production. This should provide a faster path to profitability with limited upfront capex.
- **Attractive valuations:** Global automotive demand growth has stalled, and the robotics growth narrative remains underappreciated in current valuations. Most mobility MPE suppliers are trading at multiples broadly in line with traditional auto-parts suppliers.

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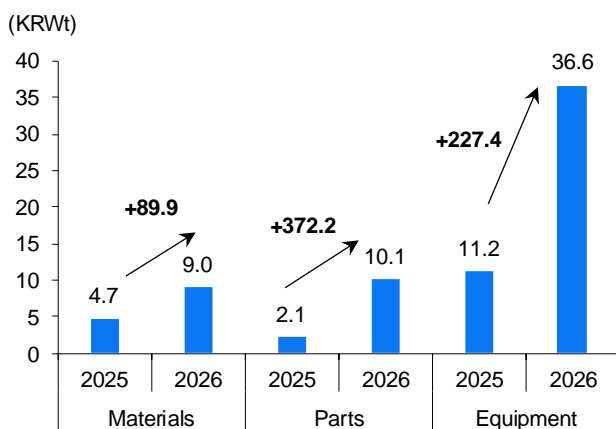
Growth concentrated among a select few

The rise of the mobility supply chain

A narrow gate into the mobility value chain

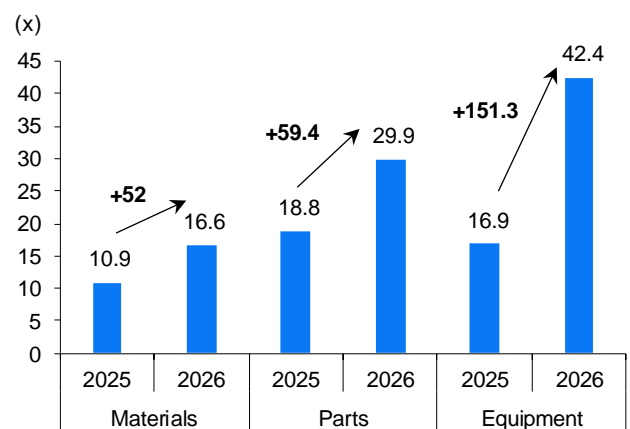
As global tech giants compete at the frontier of AI and the US-China AI arms race intensifies, Samsung Electronics (SEC) and SK Hynix are posting strong earnings growth, which is now cascading downstream to their semiconductor supply-chain partners. Soaring chip prices have lifted valuations across the ecosystem and driven robust earnings improvements. This momentum has been reinforced by capacity expansion at SEC and Hynix, as well as Tesla’s ambitious Terafab project—developments that should support demand from 2Q onward. As a result, the aggregate market cap of semiconductor materials, parts, and equipment (MPE) suppliers has surged 90-227% over the past year. While earnings growth has been the main driver for semiconductor parts manufacturers, materials and equipment firms have seen valuation gains exceed profit growth. P/E multiples for MPE suppliers now range from 16.6x to 42.4x, significantly above those of SEC and Hynix.

Semiconductor MPE* firms: 1-year market cap change



Note: *Materials = Soulbrain, Dongjin Semichem, and Hansol Chemical;
*Parts = ISC, TLB, and Simmtech;
*Equipment = Hanmi Semiconductor, HPSP, and PSK
Source: QuantiWise, Samsung Securities

Semiconductor MPE* firms: 1-year fwd P/E multiple change

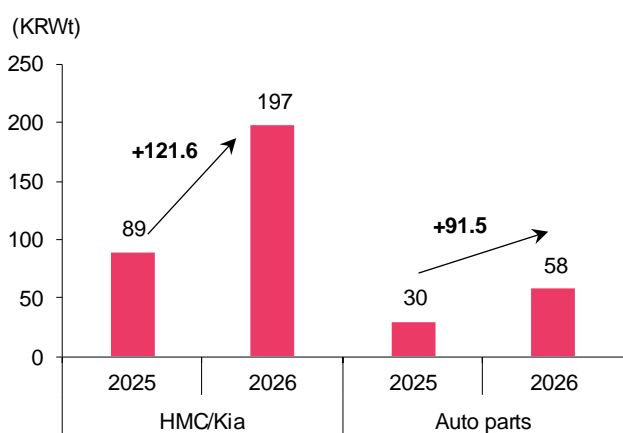


Note: *Materials = Soulbrain, Dongjin Semichem, and Hansol Chemical;
*Parts = ISC, TLB, and Simmtech;
*Equipment = Hanmi Semiconductor, HPSP, and PSK
Source: QuantiWise, Samsung Securities

HMG’s push into robotics presents a significant opportunity for Korea’s broader automotive value chain. For years, auto-parts suppliers have faced persistent pricing pressure due to stagnant global auto demand and intense competition among carmakers. Over the past decade, their P/E multiples have largely remained in the 5-6x range. Even leading electrical components firms such as Mando and Hyundai Mobis have only reached 10-12x, while Hanon Systems—positioned as an EV thermal management specialist—commands a modest 18-20x multiple. With HMG’s strategic pivot into robotics, however, these suppliers are no longer just auto-parts companies. They are becoming integral players in the broader mobility value chain. Just as semiconductor MPE suppliers have rerated on their exposure to improving growth visibility at SEC and Hynix, we expect a similar rerating for HMG’s mobility ecosystem.

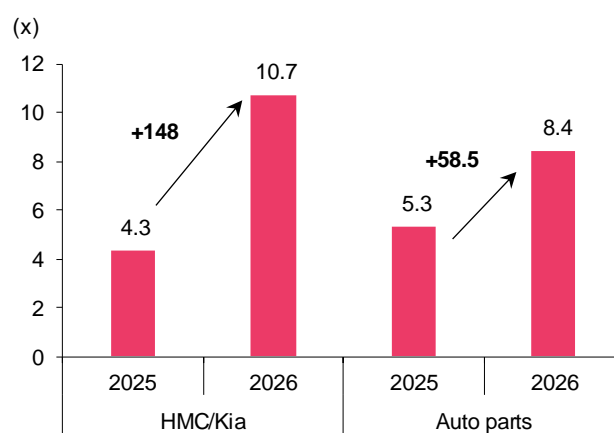
Since early 2026, suppliers integrated into HMG’s robotics ecosystem have begun to command valuation premiums, albeit still below automaker multiples. They are now trading at a 20-30% premium to traditional auto-parts valuations. Three factors suggest this premium could expand significantly: 1) the total addressable market (TAM) for industrial and service robotics is poised for explosive growth; 2) with US manufacturing capacity strained amid US-China decoupling, companies with US production facilities should benefit from nearshoring; and 3) robotics and autonomous EVs share core technologies, allowing HMC and Kia’s existing EV supply-chain partners to enter robotics with lower R&D barriers and a faster time to market.

Mobility firms: 1-year market cap change



Source: QuantiWise, Samsung Securities

Mobility firms: 1-year fwd P/E multiple change



Source: QuantiWise, Samsung Securities

While the entire semiconductor supply chain stands to benefit from AI-driven growth, only a select few automotive suppliers are likely to transition successfully into the robotics value chain. The key constraint is the sharp reduction in component count across platforms. A typical ICE vehicle contains around 30,000 parts. An EV reduces this to 12,000-15,000—a drop of more than 50%. A humanoid robot streamlines the design further, requiring just 5,000-10,000 components, another roughly 50% reduction from EVs.

Unlike automotive parts, which are highly specialized and rarely interchangeable due to their distinct functions, humanoid robots allow significant part commonality. Actuators, which account for 50-60% of hardware costs, can be standardized into just three to four types. Boston Dynamics’ Atlas, for example, reduced its actuator variants from eight to three during commercial design. Tesla’s Optimus

followed a similar path, cutting them from eight to four. Each humanoid robot incorporates 30-40 actuators, with a single actuator type typically used 10-12 times per unit. A production run of 10,000 robots therefore requires 100,000-120,000 units of the same actuator. This unlocks true economies of scale, enabling faster cost reduction and a quicker path to profitability. As a result, only a handful of suppliers are likely to capture disproportionate value in a robotics market projected to be three times the size of the traditional automotive parts market.

Component count comparison

Component Type	ICE vehicle	EV	Humanoid robot
Components	30,000	12,000-15,000	5,000-10,000
Component commonization within device	Challenging	Challenging	30-40 actuators installed; commonization possible with 3-4 actuator types

Sources: Hyundai Motor, Hyundai Mobis, Samsung Securities

Economies of scale: Autos vs humanoid robots

Category	Automobile	Humanoid Robot
Number of parts	12,000 (EV) / 30,000 (ICE vehicle)	5,000-10,000
Parts standardization	Each part has an individual function (Material cost accounts for 55-60% of manufacturing cost)	Actuators can be standardized into 3-4 types (Actuator manufacturing cost accounts for 50-60%)
Modularization	Modularized into 6-8 units	Modularized into 6-8 units
Fixed costs	High fixed cost-to-sales ratio (6-12%), including factory structures, presses, molds, etc	Low fixed cost-to-sales ratio (1-2%) due mostly to modular assembly Still in the process of design standardization; mold production expected at 100,000+ units
Regulatory and certification costs	Complex regulations (collision, environment, safety)	Regulations are being developed to discriminate between humans and robots
Unit model BEP	100,000 units	10,000 units
Unit factory BEP	200,000-300,000 units	20,000-30,000 units

Source: Samsung Securities

From an equity investment standpoint, the most compelling opportunities are firms that meet two criteria: 1) integration into HMG's robotics value chain and 2) US manufacturing capacity. Key candidates include Hyundai Mobis, SL Corporation, HL Mando, SNT Motiv, and Hwashin. Among companies without US production, Samhyun and Samwha Capacitor warrant attention. Samhyun lacks a US manufacturing base but serves as a tier-2 supplier of actuator components, benefiting from broader supply-chain expansion. Samwha Capacitor, meanwhile, does not require a US plant, as its core product—millimeter-scale MLCCs, which account for 50% of revenue—is supplied directly to chip manufacturers.

While Samhyun and Samwha Capacitor are already trading at high P/E multiples, the rest of the robotics value chain remains valued largely as traditional automotive suppliers. This should change as HMG advances key milestones in 2H26, including the launch of its robotics training center, the establishment of a dedicated robot manufacturing subsidiary, and progress in developing the Robotics Ecosystem in Saemangeum. These developments should trigger a rerating of the broader mobility value chain.

Companies in the mobility value chain

Company	Market cap (KRWb)	2026E P/E (x)	US plant	Automotive products	Robotics products
Hyundai Mobis	55,438	12.6	✓	Steering, braking, motors, electrification, sensors, chips	Actuators, battery modules, head modules, grippers
SL Corporation	3,149	7.8	✓	Lamps, side body modules	Indicator lights, battery packs, lidar modules, MobED and PnD production
HL Mando	3,052	12	✓	Steering, braking, motors, sensors	Actuators
SNT Motiv	796	7.9	✓	Motors (hybrid, EV, steering)	Motors
Hwashin	359	4	✓	Chassis, battery cases	Body modules, arm & leg modules
Samhyun	1,715	168.1	×	Gear reducer actuators	Actuators, motors, gear reducers
Samwha Capacitor	1,320	55	×	DC-Link, MLCC	DC-Link, MLCC

Source: Company data, Bloomberg, Samsung Securities

Potential scale of robotics demand

The humanoid robotics market is entering its early commercialization phase. Near-term forecasts vary widely, but institutional estimates are being revised upward consistently. Omdia projects global shipments of 10,000 units in 2027, while Technavio forecasts 160,000 units. Despite the wide range, major analysts agree that demand expectations are rising rapidly. Goldman Sachs, citing clear government-backed roadmaps for robotics development in the US, has raised its 2035 humanoid robot market-size projection from USD6b to USD38b—a 6.3x increase. Morgan Stanley sees much larger long-term potential, forecasting a market worth up to USD5t by 2050, driven by broad deployment across industrial and logistics sectors. Its scenario assumes 1b robots deployed globally by 2050, of which 930m would serve structured, repetitive tasks in manufacturing, construction, and logistics. Household applications are projected to account for only 8% of total units. China is expected to become the largest market by volume, with 300m units projected by 2050, followed by the US at 63m.

China has designated 2026 as the year for commercial-scale humanoid robot production, with plans to build mass-production capacity by 2027 and achieve large-scale production and market penetration by 2030. According to CICC, China's state-backed investment bank, annual humanoid robot output in China is projected to reach 350,000 units by 2030. The Gaogong Robot Research Institute forecasts that output could rise to 2m units by 2035.

Humanoid (AI) robot production forecasts, by institution

Institution	Timeframe	Scale	Note
Omdia	2027	Over 10,000 units	
	2030	38,000 units	
Technavio	2027	USD17.3b / 160,000 units	Upward revision from USD16b
Goldman Sachs	2035	USD38b / 1.4m units	Sixfold increase from USD6b
Morgan Stanley	2050	Up to USD5t / 1b units deployed	Long-term "Blue Sky" scenario
Bloomberg Intelligence	2035	USD154b	Projected one unit per household
Korea Eximbank	2030	USD17b	Focus on expanding markets in manufacturing and elderly care due to population aging
KPMG	2030	USD13b	Evaluated as complementary or replacement cobots within smart factories
Fortune Business Insights	2032	USD66b / 1.32m units	
Straits Research	2032	USD23.73b / 475,000 units	
Gaogong Robot Research Institute (GGII)	2035	755,000 enterprise units / 1.26m consumer units	

Source: Company data, Samsung Securities

Major global players are also launching production in 2026. Tesla should begin manufacturing its Optimus Gen-3 robot in Aug-Sep 2026. Figure AI unveiled its BotQ production facility in early Mar 2025, with an annual capacity of 12,000 units and a target of 100,000 units over the next four years. Agility Robotics, which is set to supply robots to Amazon, plans to begin mass production of 10,000 units by the end of this year. Boston Dynamics, owned by HMG, aims to produce 30,000 units annually by 2028. Robotic Lab should unveil a robot with advanced manipulation intelligence by late 2026, followed by a full humanoid model.

Chinese manufacturers are moving swiftly. Unitree is targeting 10,000-20,000 units in 2026, while UBTEch aims to produce 5,000 units per year. Agibot, China's most experienced mass producer, surpassed 10,000 cumulative units in 2025 and plans to exceed that figure again in 2026. Xpeng is also preparing to begin mass production before year-end.

Figure AI: BotQ facility



Source: Figure AI, Samsung Securities

Figure AI: BotQ facility



Source: Figure AI, Samsung Securities

Our 2026-2027 global humanoid robot demand forecast is based on the midpoint between manufacturers' production targets and institutional demand projections. We expect adoption to accelerate from 2028, as core technologies—AI models, batteries, and actuators—reach critical thresholds for reliability, cost-efficiency, and standardization. The 2H27 UAW wage negotiations should represent a pivotal inflection point. The 2023-2024 partial strikes by the US Big Three automakers—the largest in US labor history—demonstrated systemic vulnerabilities in manual assembly lines. A full-scale, simultaneous strike across all three automakers could serve as a powerful catalyst for accelerated humanoid robot adoption in vehicle manufacturing.

Once major manufacturers exceed annual production of 10,000-20,000 units after 2028, humanoid robot prices are expected to fall to around USD50,000. By 2030, as production scales to 50,000-100,000 units per company, prices could drop further to the USD30,000 range, enabling broader adoption beyond manufacturing and into service applications. China projects demand of 2m units by 2035. Factoring in global demand growth, we believe total global demand could reach 5m units annually by then.

Beyond 2040, as robots begin manufacturing other robots, the AI robotics market could expand to 50m units annually—roughly half the scale of today's global automotive market. We lower our 2050 projection to 1.5b units, aligning it with the global registered vehicle fleet rather than assuming one robot per person. This adjustment reflects a pragmatic view that price points will remain too high for universal personal ownership. We assume a 5-year replacement cycle for robots, given that: 1) robots

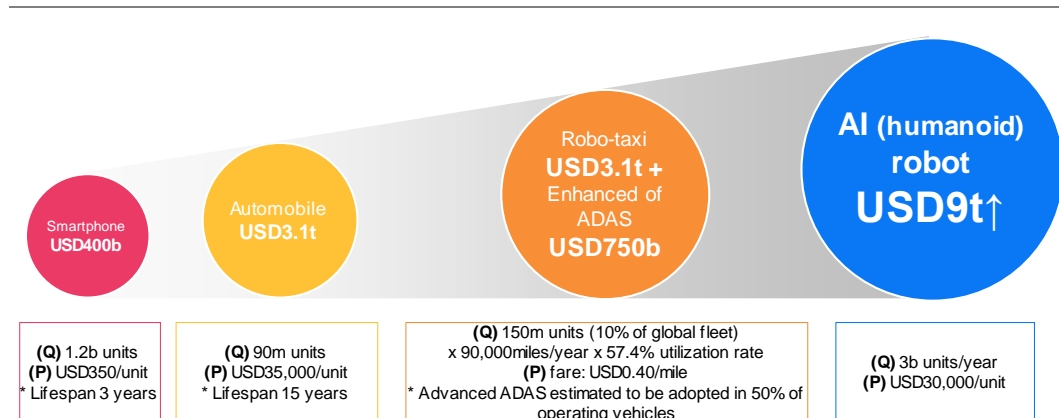
operate 24/7 under heavy mechanical and computational loads; and 2) AI training infrastructure is typically depreciated over five years. For reference, current robot warranties typically last one year, with service support extending to two years. Based on a 5-year replacement cycle, the annual global market would reach 300m units. At USD30,000 per unit, this implies an annual market size of USD9t—three times the size of today’s global automotive market.

Global: Humanoid (AI) robot production scale estimates

(Units)	Production volume
2024	2,300
2025	13,000
2026	100,000
2027	200,000
2030	1,000,000
2035	5,000,000
2040	50,000,000

Source: Samsung Securities estimates

Robotaxi and AI robot market-size estimates



Source: Samsung Securities estimates

Our projections will inevitably evolve over time. However, global technology leaders broadly agree that robotics will become the largest industry in human history—a view strongly supported by the scale of investment from Big Tech. All US Big Tech giants have now entered robotics, alongside leading Chinese technology companies and major EV manufacturers. With the exception of Tesla, most technology companies are not primarily focused on robot manufacturing. Instead, they aim to become robotics OS providers by developing foundational AI models for robots. Building these models requires mass-scale robot deployment and the accumulation of real-world behavioral data. This dynamic elevates the strategic importance of HMG’s robotics production platform and strengthens expectations for growth across Korea’s mobility value chain.

US tech giants: Current status of robotics businesses

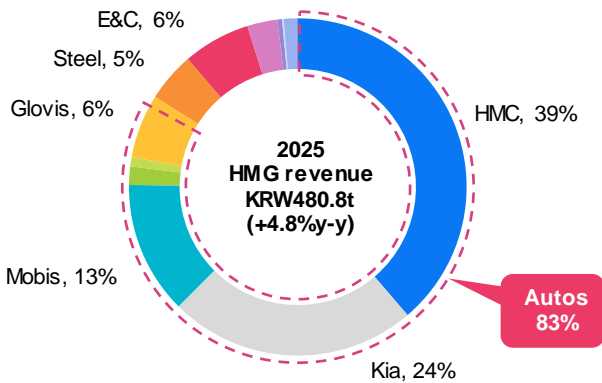
Company Timeline Status		
Tesla	2025	Unveiled Optimus Gen 2.5; conducting limited field tests in factories.
	2026	Full-scale mass production of Optimus scheduled for August; targeting 10x annual production growth and external sales by H2.
Nvidia	2024	Launched GR00T, a foundational AI model platform dedicated to robotics development.
	2025	Released Jetson Thor, a compact computer designed for humanoid robots, in the first half of the year.
Google DeepMind	2024	Introduced AI models RT-1, RT-2, and AutoRT—designed to serve as the 'brain' of robots. Combined LLM and VLM capabilities to enable autonomous environmental perception and task execution.
Amazon	2024	Invested in Physical Intelligence, a startup developing large-scale AI models and algorithms to integrate AGI into robots.
	2026	Completed two M&As: Fauna Robotics (humanoid robot startup) and River Technologies (last-mile delivery robot company).
	2027	Plans to replace over 160,000 human roles with robots.
	2033	Aims to automate 600,000 positions overall.
Meta	2025	Partnered with Ghost Robotics to launch Digit 360, a multimodal sensory system with human-level tactile feedback. Partnered with YuanYi Robotics to launch the next-generation robotic hand, 'Allegro Hand'. Officially entered the humanoid robotics space; hired Marc Whitten, former CEO of GM Cruise. Allocated USD65b in 2025 for robotics and AI infrastructure investments.
	2026	Declared software a current bottleneck; shifted focus from building robots in-house to developing a robotics software platform for third-party adoption. Acquired Assured Robot Intelligence, a startup developing foundational robot AI models, in May.
Apple	2024	Redirected focus from electric vehicle development to home robotics; targeting release of mobile robots and tabletop home devices.
	2025	Developing tabletop robot under project 'J595', targeting a 2027 launch with a price goal of USD1,000.

Source: Company data, Samsung Securities

HMG aims to cultivate the mobility value chain

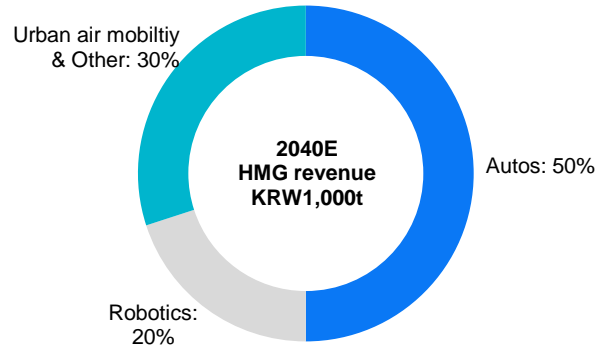
Initial revenue from supplying components for Boston Dynamics' Spot and Atlas and Robotics Lab's MobED is expected to remain modest, at less than 5% of consolidated sales. However, HMG's long-term vision, articulated by Chairman Chung Eui-sun, is far more ambitious: 50% of sales from automobiles, 20% from robotics, and 30% from urban air mobility (UAM) by 2040. As of 2024, HMG's automotive business generated roughly KRW380t in sales. Assuming annual growth of 2-3%, automotive revenue could reach KRW500t by 2040. To achieve its 20% robotics target, the group would need to generate KRW200t in robotics revenue. If robot ASPs eventually converge with vehicle ASPs—around USD30,000—annual sales of roughly 4m units would be required. In effect, HMG is targeting a 100-fold increase in Atlas-related robotics volume.

Hyundai Motor Group: Revenue breakdown (2025)



Source: Bloomberg, Samsung Securities

Hyundai Motor Group: Revenue breakdown (2040E)



Source: Samsung Securities

The group aims to build its robotics value chain on the foundation of Korea’s existing automotive ecosystem. Zack Jackowski, lead engineer at Boston Dynamics, stated at CES that, in commercializing Atlas, the company sharply reduced the number of unique parts and designed every component to be compatible with automotive supply chains. In subsequent engineering talks on YouTube, he detailed key design principles: actuator commonality, with variants reduced from eight to three; symmetrical left-right components; modular architecture; lower part count; and field replaceability. While Boston Dynamics developed the actuator in-house, Hyundai Mobis is deeply involved in designing it for mass-production. This is less about Hyundai Mobis entering an unfamiliar market than robotics adopting automotive manufacturing practices. Many technologies already familiar to automotive suppliers have been incorporated.

Ahead of our global investors conference, Robotics Lab confirmed during its pre-conference tour (May 11) that it is internalizing actuator and sensor design to improve cost competitiveness, while outsourcing manufacturing to Korean suppliers. The company sources the AI inference chips it needs from Korea’s DeepX. Robotics Lab’s engineers pushed back against the market perception that China leads in hardware technology, noting that sourcing actuators and sensors that meet their performance and quality standards costs roughly the same in China as in Korea. They emphasized that true cost competitiveness is driven not by in-house design capability alone, but by mass-production scale.

Boston Dynamics: Robot value chain

Product	Component	Company	Notes	
E-Atlas	Actuator	Hyundai Mobis	Sub-component sourcing status is undecided	
	Head module	Hyundai Mobis		
	Body module, arm, leg	Hwashin		
	Battery	LG Energy Solution		
	Smart lighting	n/a		Bidding in progress
	SI / Control system	Hyundai AutoEver		
Spot	Actuator	HL Mando	2nd generation release planned for 2027	
	Leg Module	SL Corp		
Stretch (Logistics Robot)	Turn Signal	SL Corp		

Source: Company data, Samsung Securities

Robotics Lab: MobED value chain

Component	Company	Remarks
Lidar	SOS Lab	2 units per robot / Supplied as a module by SL Corp
Battery	Samsung SDI	Cylindrical
Edge chip	DeepX	DX-M1 NPU / Computing power: 30 FPS / Power consumption: 5 W
Actuator	Gyeyang Electric	12 units per robot
Contract manufacturing	SL Corp	Includes battery pack

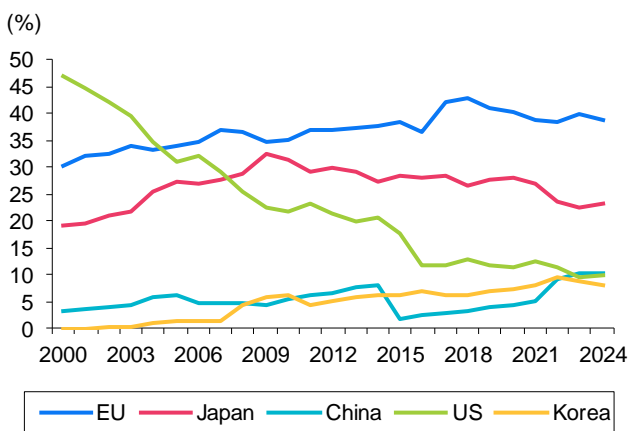
Note: The target is to sell 10,000 to 15,000 units over the next three years.

Source: HMC, Samsung Securities

Companies with US-based operations to become central pillars of US robotics supply chain

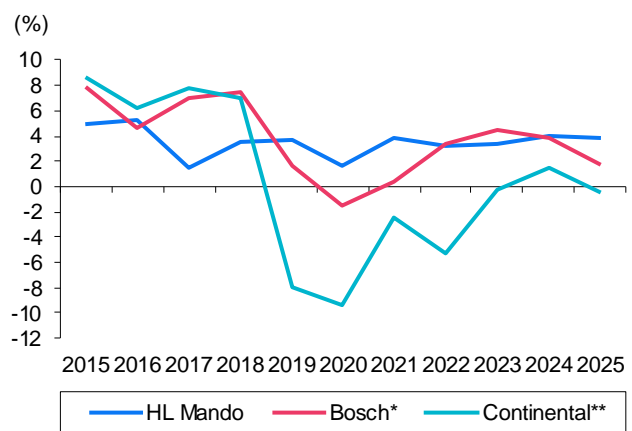
For Korean suppliers that have already entered the US market alongside HMG, securing a reference customer such as Boston Dynamics could open the door to additional business opportunities. As noted earlier, every major US technology company is now investing in robotics, while US manufacturing has remained in a prolonged vacuum since 2009. The European value chain, which once dominated the US automotive supply chain, is undergoing restructuring amid weak earnings at European automakers. Meanwhile, Japan's value chain, which previously dominated industrial robotics, faces limited growth opportunities due to Toyota's conservative investment stance and weak earnings at Honda and Nissan.

Global top 100 parts makers: M/S, by supplier nationality



Source: Automotive news, Samsung Securities

Global chassis companies: Operating margin



Note: *Automotive division;
**Automotive Group division (~2022), Aumovio (2023~)
Source: Bloomberg, Samsung Securities

The US is actively decoupling its supply chain from China, creating significant opportunities for Korean companies that compete with Chinese manufacturers. The US is likely to impose stricter restrictions on Chinese companies' entry into robotics—an intelligent device category—than it has in the EV sector. In Mar 2026, Senator Tom Cotton (R-Arkansas) and Senator Chuck Schumer (D-New York) jointly introduced the American Security Robotics Act of 2026. The bill aims to protect US data privacy and prevent adversarial nations—including China, Russia, North Korea, and Iran—from embedding robotic technologies into critical US infrastructure and national-security systems, thereby preserving the US's technological edge.

The proposed regulation covers: 1) system-level robots, including unmanned ground vehicles, autonomous patrol systems, mobile robots, and humanoids; 2) critical components, including not only finished robots but also key subsystems such as cameras, sensors, and controllers that enable data collection and control; and 3) covered entities, including companies headquartered in adversarial nations—or subject to their ownership, control, or significant influence—as well as their subsidiaries.

The bill is expected to move through the Senate Committee on Homeland Security and Governmental Affairs by late Mar 2026, attract bipartisan support, and be enacted in 2H, with implementation targeted for early 2027.

In early June, US Representative Moolenaar, chair of the House Select Committee on China, spearheaded the introduction of the Guarding the US Against Adversarial Robotics Dominance

(GUARD) Act. The bill would require national security reviews of robots from adversarial nations such as China and authorize import bans. The committee has also added Chinese robotics firm Unitree and EV manufacturer BYD to the list of Chinese military companies.

Separately, the US administration is expected to announce targeted incentives for robotics manufacturing. A robotics executive order, led by the US Secretary of Commerce, is under review and may include tax incentives, federal funding, and trade measures against China. The order is expected to be signed in 2H, following the conclusion of the Middle East war. If production subsidies similar to those under the Inflation Reduction Act (IRA) are introduced for core components such as actuators, Hyundai Mobis and HL Mando stand to benefit significantly.

Comparison of Security Robotics Legislation, Drone regulations, and the Inflation Reduction Act (IRA)

Aspect	Security Robotics Bill	Drone regulations	Inflation Reduction Act (IRA)
Implementation	Expected to be introduced in Mar 2026; implementation anticipated in 2027	Implemented in 2024	Implemented in Aug 2024
Primary targets	Chinese and Russian-made humanoids and UGVs (Unmanned ground vehicles)	Chinese-made small and commercial drones (eg, DJI)	Electric vehicles containing Chinese batteries and critical minerals
Incentive approach	No incentives — pure regulatory restriction	Indirect support: Subsidies funded by customs revenue; large-scale procurement contracts with domestic firms (eg, Anduril)	Direct financial support: Consumer tax credits, production tax credits, and manufacturing subsidies
Production location requirements	Nationality-based: Manufacturer's country of origin is more important than production location	Component-level regulation: Mandatory phased US localization of parts	Final assembly must occur in North America; key minerals must originate from approved sources
Impact on Korean companies	Expanded export opportunities for finished products and components	Benefits for small drone components and defense-grade drone suppliers	Mandatory local factory investment in North America; eligibility for government subsidies

Source: Congress.Gov, Samsung Securities

Major countries' policy support: EVs vs robotics

	EVs	Robotics
US	<ul style="list-style-type: none"> • USD30.7b in total support through the <i>Inflation Reduction Act</i> • USD7,500 subsidy for EVs manufactured in the US, set to end on Sep 30, 2025 	<ul style="list-style-type: none"> • Focus on AI infrastructure and robot intelligence development • USD500b allocated (including to projects like StarGate) • Reviewing a robotics executive order
China	<ul style="list-style-type: none"> • USD230.9b cumulative support over 15 years—subsidies for vehicle replacement and NEV purchases 	<ul style="list-style-type: none"> • Estimated investment in the tens of billions of yuan • Part of the 'Made in China 2025' extension • Creation of a robot fund worth around KRW1.8t in Shanghai alone
Germany	<ul style="list-style-type: none"> • EUR3b total (policy reintroduced in 2026) • Up to EUR6,000 subsidy for low-income / multi-child households 	<ul style="list-style-type: none"> • n/a
Korea	<ul style="list-style-type: none"> • KRW1.6t in 2026 • Reduction in per-unit subsidy amounts, but beneficiaries expanded to 300,000 units 	<ul style="list-style-type: none"> • Budget of around KRW1.1t (Industrial AI transformation and robotics) • KRW157.5b newly allocated for commercialization of AI applications (including robots) • Includes KRW150t in financial support over five years under the "advanced strategic industry" policy
Japan	<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • Approximately JPY200b annually (KRW1.8t) • 2026 budget increase under the 'New Robot Strategy' • Support for physical AI and next-generation robot semiconductors

Source: Media, Samsung Securities

Air cooling remains the basis of robot thermal management

Key differences in thermal management between Atlas and Optimus

In our 2H outlook report published on May 27, we argued that the key bottleneck in humanoid robot hardware today is not dexterity, but thermal management.

For humanoid robots—most of which operate indoors, where charging is readily available—thermal management, rather than battery size, will likely determine operating hours. We have updated our analysis to address the questions most frequently raised in numerous recent seminars and provide a comparative view of thermal management in Optimus and Atlas.

EVs and humanoid robots both rely on high-power motors and inverters, but their distinct spatial constraints and operational mechanisms demand fundamentally different approaches to thermal management. In EVs, heat is concentrated primarily in the battery and motor. The vehicle's underbody and front end provide ample space for coolant lines, making liquid cooling the dominant solution. Cooling plates are positioned between hundreds of battery cells to conduct heat away efficiently, then channel it via pumps and piping to a front-mounted radiator, where airflow generated during driving dissipates the heat. The design incorporates air-cooling at the end stage.

In humanoid robots, in contrast, heat sources are distributed across dozens of joints, each housing an actuator. While heat output at any single joint is modest, the cumulative effect of continuous operation creates persistent thermal buildup. The space available for joint-level cooling is extremely limited, with additional requirements for weight reduction at the gram level. Routing coolant lines through moving joints is not practical, as repeated movement would increase the risk of fatigue or rupture, compromising durability. Boston Dynamics' Atlas, for instance, prioritizes a cable-free design to reduce weight and simplify maintenance, making liquid cooling impractical. Instead, thermal management relies primarily on passive, air-cooled designs that dissipate heat into the surrounding air. Selective liquid cooling is added only to high-heat areas.

Even in robots that use liquid cooling, small joints, sensors, and batteries rely on passive heat dissipation, while heat carried by the liquid loop is ultimately released into ambient air—especially in environments without self-generated airflow. Regardless of the architecture, the foundation of humanoid thermal management remains the same: suppress heat generation at the source and allow components to conduct and dissipate heat naturally through thoughtful actuator thermal design and capacitors that smooth out peak current surges. This highlights the pivotal role of Boston Dynamics and Tesla in defining overall humanoid robot architecture, while also elevating the strategic importance of actuator suppliers such as Hyundai Mobis and HL Mando, as well as MLCC manufacturers such as

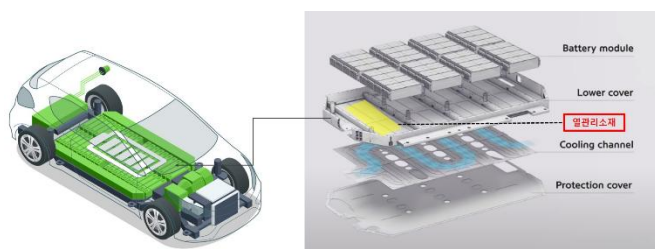
Samsung Electro-mechanics and Samwha Capacitor, which could extend capacitor applications beyond EVs and into robotics.

Difference in heat generation structure: EVs vs humanoid robots

Category	EV	Humanoid robot
Primary heat sources	Battery, drive motor	Actuators, inference chips
Heat distribution	Concentrated (clear thermal path from fixed components to cooling jacket)	Distributed (3+ heat sources coexist within a single joint)
Dominant cooling method	Liquid cooling (water jacket), oil cooling	Natural convection (no fan), indirect conductive cooling
Operating temperature range	-40°C to 120°C (engine compartment baseline)	0°C to 45°C (indoor factory environment), with cumulative thermal stress under high-cycle operation
Space constraints	Relatively ample (dedicated cooling jacket space available)	Extremely limited (must be integrated within joint housing)
Weight sensitivity	Low	Very high (gram-level weight optimization required)
Coolant circulation	External pump and radiator loop	No external loop possible → passive heat dissipation prioritized

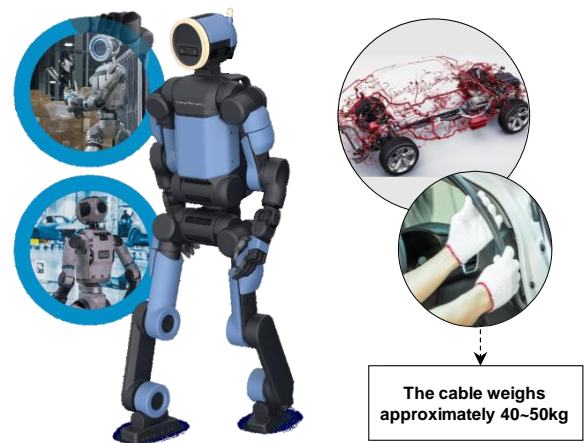
Source: Samsung Securities

Battery thermal management for EVs



Source: Samyang Corporation

Atlas (3rd generation): Employs cableless actuator structure



Source: Company data

Atlas and Optimus take different approaches to thermal management based on their target markets. Optimus is engineered as a general-purpose robot. Atlas, by contrast, is designed for manufacturing environments such as automotive factories, where work patterns involve intermittent high-load cycles. Heat generation spikes briefly when lifting components weighing more than 15 kg, but sufficient time is available during movement and idle phases for natural heat dissipation.

Atlas’s thermal strategy is built on three complementary layers.

- **Structural passive cooling (heat-sink enclosure):** The actuator housing is precision-machined with dense, comb-like cooling fins to maximize surface area exposed to air. Heat generated within the motor is conducted through the housing into the robot’s aluminum outer shell, where airflow generated during movement dissipates it.
- **Phase-change material (PCM) integration:** During high-stress maneuvers—such as lifting a refrigerator or performing a backflip—joint temperatures can rise rapidly. Tiny PCM inserts within the actuators absorb these heat spikes through solid-to-liquid phase transitions, leveraging latent heat to delay thermal peaks and prevent system-level overheating.

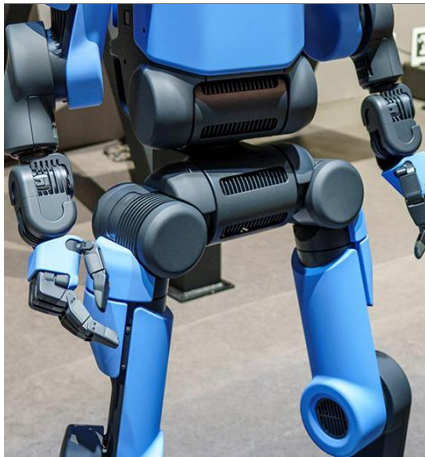
- **Localized cooling for the main computer (the “brain”):** The head unit, which processes vast amounts of sensor data and runs end-to-end AI models, generates significant heat. While the joints do not use fans, Atlas incorporates a hybrid cooling chamber in the head, combining high-performance fans with waterproofing to prevent thermal throttling.

Atlas: Thermal management technology

Location	Cooling method	Operating principle	Atlas implementation
Battery	Battery thermal management system (BTMS)	Keeps cell temperature uniform via cooling plates	Removable battery pack design (marathon pit-stop style)
Inverter & driver	PCB thermal spreading + GaN low-loss	GaN reduces switching loss to 1/3-1/5 compared to Si	Driver ICs directly mounted onto joint housing
Motor windings	Thermally conductive epoxy potting	Epoxy fills gaps between windings and housing, eliminating thermal resistance	-
Motor housing	Aluminum fins with natural convection	Maximizes surface area to enhance convective heat transfer	Atlas outer profile features integrated fin structure
Reducer	Lubricant thermal conduction + housing conduction	Gear friction heat → lubricant → housing → ambient air	High-viscosity, heat-resistant grease used
System-wide	AI thermal duty cycle control	Real-time joint temperature monitoring → automatic power reduction at thermal thresholds	Software layer compensates for hardware thermal limits

Source: Boston Dynamics, Samsung Securities

Atlas: Hips and waist



Source: Boston Dynamics

Atlas: Knees and ankles



Source: Boston Dynamics

Atlas: Gripper



Source: Boston Dynamics

Liquid cooling pipelines in Tesla’s Optimus are only 2-3 mm in diameter and use an aluminum-alloy microchannel cold-plate design. The flow channels are integrated directly into the stator core, allowing the liquid cooling system to be tightly integrated with the joint motor. This design not only avoids occupying additional space but also minimizes the distance between heat sources and the cooling path. Optimus uses 28 proprietary actuators—22 rotational units based on harmonic drives and six linear units based on planetary roller screws—each paired with an algorithm that dynamically adjusts coolant flow based on real-time monitoring of joint temperature and load.

Principle of air-cooled base layers also valid for Optimus: Small joints and sensors—such as those in the fingers and forearm, which include 25 actuators in the third generation—rely on passive cooling because physical routing of coolant channels is impossible. Heat collected by the liquid cooling loop is

ultimately released into the air through a body-mounted radiator, without relying on self-generated airflow.

Although both systems use software-based thermal management, their operating philosophies differ. Atlas uses duty-cycle control to reduce output as it approaches thermal limits, focusing on protection. Optimus, by contrast, uses dynamic flow control to increase coolant supply and sustain performance. Optimus delivers strong cooling performance and excellent sustained high-load capability, but it faces drawbacks including the difficulty of sealing coolant channels routed through rotating joints, leak risk, increased weight, and greater maintenance and servicing complexity.

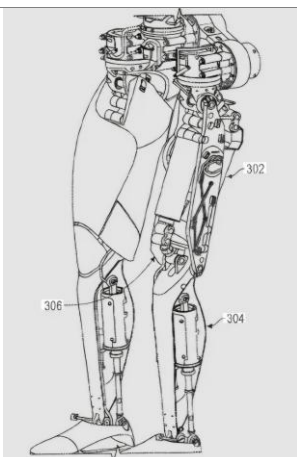
The actuators and thermal management components in Optimus are sourced mainly from Chinese suppliers, including Sanhua (known for electronic expansion valves) and Ymlun (a liquid-cooling technology specialist). Although reports in Oct 2025 claimed Tesla had placed a USD685m linear-actuator order with Sanhua, the Chinese company has since denied the report, and the claim remains unverified.

Thermal architecture comparison: Atlas vs Optimus

Category	Boston Dynamics Atlas	Tesla Optimus
Target market	Manufacturing facilities; intermittent high-load operations	Continuous operation; complex and diverse tasks
Thermal architecture	Passive air-cooled (no liquid cooling layer)	Integrated liquid cooling (air-cooled base + liquid cooling layer)
Joint actuator cooling	Housing heat sink (integrated fins) + PCM for peak heat absorption	Integrated stator core with 2-3 mm micro-channels + aluminum microchannel cold plate
Software thermal management	AI-driven duty cycle control with automatic power throttling at thermal thresholds	Real-time dynamic coolant flow adjustment linked to temperature and load
Compute cooling	Localized head fan + waterproof hybrid cooling chamber	Onboard AI chip: presumed linked to liquid cooling loop (unconfirmed)
Final heat dissipation	Natural convection from surface to air	Body radiator to air
Passive cooling dependency	All joints, sensors, and battery (replaceable packs)	Fingers and forearm joints (25 units), sensors, and battery
Strengths	Lightweight, durable, easy maintenance, zero leakage risk	Superior continuous high-load performance, higher thermal performance ceiling
Risks	Thermal accumulation under sustained high load	Sealing and leakage in rotating joints, increased weight, complex servicing

Source: Company data, Media, Samsung Securities

Optimus: Hip and waist



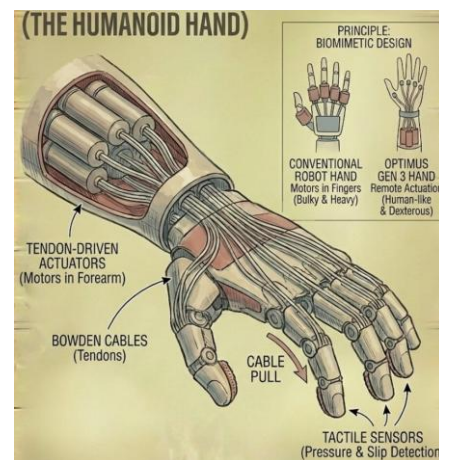
Source: Media

Optimus: Knees and ankles



Source: Media

Optimus: Dexterous hand



Source: Media, X

Actuators and MLCCs central to robot thermal management

In an air-cooled thermal architecture, thermal management functions are embedded in the components themselves—such as actuators and body structures—rather than handled by a separate cooling system. While some robots do employ dedicated cooling systems, their role is far more limited than in EVs. In liquid-cooled robots, thermal management value is dispersed across cooling-loop components, including pumps, cold plates, and tubing. In air-cooled robots, however, there is no external heat-rejection system, so the actuator must handle the full thermal management process: suppressing heat generation through low-friction gears and GaN devices, conducting heat through winding potting and thermal interface materials, and dissipating heat through integrated housing-fin designs. Under Atlas’s design philosophy, actuator suppliers are not merely providers of motion components, but *de facto* thermal management component vendors. Since the continuous torque rating of humanoid actuators is dictated by thermal, not electrical, limits, thermal design capability becomes the defining axis of product performance and cost differentiation.

Role of actuator manufacturers in thermal management: Actuator makers are responsible for thermal isolation and low-friction engineering.

- **Separating gear heat from motor heat:** Frictional heat from meshing planetary and cycloidal gears can combine with electrical heat from the motor, leading to magnet demagnetization and torque loss. Actuator makers mitigate this risk by applying advanced low-friction coatings, such as diamond-like carbon (DLC), to gear surfaces.
- **Integrating thermal interface materials (TIMs):** At the actuator assembly stage, manufacturers such as Hyundai Mobis embed high-conductivity thermal pads or gels to accelerate heat transfer from motor windings to external cooling fins.
- **Optimizing power devices:** Replacing conventional silicon MOSFET with gallium nitride (GaN) power transistors in motor drivers increases switching speed by 10-100x, substantially reducing overall heat generation.

HL Mando is embedding thermal management directly into actuator design. Robot-generated heat is addressed across four layers: mechanical, electrical, software, and system. Instead of adding separate cooling units, this approach focuses on reducing heat generation at the source and optimizing passive heat dissipation, making thermal management an intrinsic part of actuator design.

Role of thermal management in robot actuator systems

Design item	Thermal management requirements	Hyundai Mobis’s capabilities
Motor housing material & geometry	Use of Al-SiC composite or high-purity aluminum alloy; integrated fin design to minimize thermal resistance	Proven experience in designing and machining housings for EV drive motors
Winding potting	Epoxy with thermal conductivity ≥ 3 W/m·K to fully fill windings; application of vacuum pressure impregnation (VPI) process	Currently applying VPI process in drive motor production
Reducer lubrication & Sealing	Selection of high-temperature grease; leak-proof sealing design with compensation for thermal expansion	Experience in lubrication design for EPS and e-Axle reducers
Driver IC integration	Direct thermal path design from GaN chip to housing for efficient heat dissipation	Requires co-design with power electronics partners
Thermal simulation	Preemptive elimination of hotspots via FEM-based thermal-fluid analysis; application of DFMEA	Standardized design process aligned with automotive component development
Durability validation	High-temperature cycling tests (-40°C to 130°C); MTBF verification under continuous operation	Robust reliability testing system compliant with IATF 16949

Source: Boston Dynamics, Samsung Securities

In robotics, capacitors serve as critical buffers that prevent electrical heat generation at its source.

- **Peak current buffering:** When robots lift heavy loads, sudden power demands can cause massive current spikes from the battery to the joint. Capacitors supply instantaneous power to actuators, preventing excessive power from flowing directly through wiring and circuits—where resistance would otherwise generate exponential heat. By delivering on-demand power locally, capacitors act as a first line of thermal defense that fundamentally suppresses the system’s total electrical heat generation.
- **MLCC adoption expanding amid shift in power devices:** Replacing the motor driver IC for actuators with gallium nitride (GaN) power devices creates a cascade of improvements: the inverter runs cooler, enabling smaller capacitors, which frees up space in the joint and simplifies thermal design. MLCCs benefit from this structural transition.

Role of capacitors in robotics thermal management

Component	Type	Thermal management role	Supply chain relevance
Main DC bus	Film or high-capacity electrolytic	Absorbs regenerative energy surges to prevent battery overcharge/overheating; reduces inverter heat by suppressing voltage spikes	Samsung Condenser DC-link; high voltage/temperature tolerance is critical
Joint driver DC link	MLCC (ceramic)	Filters high-frequency ripple current from GaN switching; improves inverter efficiency and lowers system heat	Samsung Electro-mechanics, TDK, Murata, Samsung Condenser; trend shifting from electrolytic to ceramic for GaN systems
AI computing board	Polymer tantalum + MLCC	Delivers instant current to CPU/GPU; suppresses power noise to prevent thermal miscalculation	Low-ESL, low-ESR high-capacity MLCCs

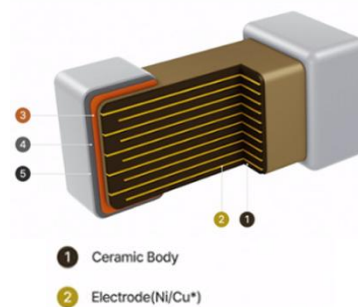
Source: Media, Samsung Securities

Robot actuator



Source: Hyundai Mobis

Multi-layer ceramic capacitor (MLCC)



Source: Samsung Electro-mechanics

The precise number of capacitors in humanoid robots remains undisclosed, but subsystem-level estimates suggest joint actuator drivers account for the largest share. Each joint integrates a motor-driver board that houses gate drivers, DC-link decoupling, an MCU/encoder, and EMI filters—with each compact servo-driver board containing 30-80 MLCCs. In Optimus-style designs featuring 28 body actuators and 25 hand/forearm actuators, the total actuator count exceeds 50, implying 1,500-4,000 capacitors. The second major contributor is the AI compute board used for inference. Server boards equipped with AI accelerators typically carry up to 2.5 times the number of MLCCs as standard servers, according to Samsung Electro-mechanics. Similarly, robot inference boards, which require multiple low-ESL decoupling capacitors for high-current transient supply, are estimated to contain 500-1,500 capacitors each. Including sensors, communications, and power systems, each humanoid

robot is estimated to use 3,000-6,000 capacitors. This is three to five times the count in a smartphone, at around 1,000, and roughly one-quarter to one-sixth of the count in an EV, at 18,000-20,000.

Humanoid Robot: Estimated MLCC count

Category	Components	Number of MLCC (units)	Rationale
Joint actuator drivers	Motor driver boards 50+ units* x 30-80 MLCCs per board	1,500-4,000	Composition of industrial-grade small servo driver boards
AI compute board	FSD/Thor-class inference boards with multiple low-ESL, high-capacity decoupling capacitors	500-1,500	AI server boards contain up to 2.5x more MLCCs than general-purpose server boards (Samsung Electro-mechanics)
Sensors & Communication	Camera modules, IMUs, force/torque sensors, wireless modules	100-300	
Power & Battery	BMS, DC-DC converters, power distribution (1-2 DC-link film capacitors separate)	100-300	
Total		Approximately 3,000-6,000	

Note: * 50+ units include 28 for body, 25 for hands/forearms, based on Optimus

Source: Media, Samsung Electro-mechanics, Samsung Securities estimates

MLCC population by device type

Category	Smartphone	Humanoid Robot	Electric Vehicle
MLCC population	~1,000 units	~3,000 - 6,000 units (Samsung estimate)	18,000-20,000 units
Device weight	~0.2 kg	60-90 kg	~2,000 kg
MLCC density per kg (IT devices)	~50-80 units/kg	~10 units/kg	-
Required specifications (Mix)	General IT-grade	Automotive-grade high-reliability + high-capacity, low-ESL (higher ASP)	Automotive-grade high-reliability

Sources: Media reports, Samsung Electro-mechanics, Samsung Securities

COMPANY UPDATE

2026. 5. 29

EV/Mobility Team

Esther Yim

Team Leader

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Hyunji Kim

Research Associate

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▶ AT A GLANCE

BUY

Target price **KRW950,000** 38.5%

Current price **KRW686,000**

Market cap	KRW62.2t/USD41.4b
Shares (float)	89,602,640 (65.2%)
52-week high/low	KRW688,000/KRW246,500
Avg daily trading value (60-day)	KRW268.6b/ USD178.9m

▶ ONE-YEAR PERFORMANCE

	1M	6M	12M
Hyundai Mobis (%)	53.5	121.6	170.1
Vs Kospi (%pts)	24.5	6.3	-11.9

▶ KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	BUY	BUY	
Target price	950,000	720,000	31.9%
2026E EPS	47,711	47,469	0.5%
2027E EPS	55,283	55,027	0.5%

▶ SAMSUNG vs THE STREET

No of estimates	25
Target price	632,400
Recommendation	4.0

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL



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Hyundai Mobis (012330)

2H outlook: Robotics fever puts spotlight on actuator tech

- The key bottleneck in humanoid robot hardware today is not dexterity, but thermal management.
- Effective thermal control depends on air-cooled designs, in which actuators and capacitors play central roles. Actuator manufacturers are responsible for thermal isolation and low-friction engineering.
- Atlas's commercialization strategy centers on compatibility with the automotive supply chain. Hyundai Mobis, already a key player in this ecosystem, is now expanding its role into thermal management. The company is our top pick for 2H.

WHAT'S THE STORY?

Raising target price by 32% to KRW950,000: Actuators supplied by Hyundai Mobis account for 50-60% of a humanoid robot's hardware cost and serve as critical components in thermal management.

- **Applying a target P/E of 18.4x, in line with Hanon Systems' historical average:** We previously valued Hyundai Mobis using a blend of P/E and P/B. To better reflect its expanded role in robotics, we now apply P/E alone. We raise our target P/E by 34.3% from 13.7x (the upper end of the firm's historical range) to 18.4x and apply this to the average of our EPS forecasts for 2026 and 2027 to derive a target price of KRW950,000. The 18.4x multiple reflects Hanon Systems' average P/E from Apr 2016, when Tesla's Model 3 kicked off the EV wave, to 2024, before Hanon Systems fell into losses. As a key thermal management supplier for EVs, Hanon Systems historically commanded a valuation premium. Hyundai Mobis will supply 100% of the actuators for Atlas and is also expanding into thermal management.

SUMMARY FINANCIAL DATA

(Continued on the next page)

(KRWb)	2025	2026E	2027E	2028E
Revenue	61,118	65,144	68,938	72,997
Operating profit	3,357	3,920	4,627	5,194
Net profit (adj)	3,665	4,314	4,962	5,466
EPS (adj) (KRW)	39,682	47,711	55,283	60,898
EPS (adj) growth (% y-y)	-8.7	20.2	15.9	10.2
EBITDA margin (%)	7.4	8.0	8.7	9.1
ROE (%)	7.7	8.4	9.0	9.1
P/E (adj) (x)	9.4	14.4	12.4	11.3
P/B (x)	0.7	1.1	1.0	1.0
EV/EBITDA (x)	7.2	11.5	9.6	8.3
Dividend yield (%)	1.7	0.9	1.1	1.2

Source: Company data, Samsung Securities estimates

- **Humanoid robots' key hardware challenge—thermal management:** Heat is generated mainly by joint actuators. Individually, the heat load is modest, but it becomes meaningful under continuous 24/7 operation. Given cable-free designs and tight spatial constraints, liquid cooling is not feasible. Effective thermal control therefore depends on air-cooled architectures, careful material selection, and the thermal performance of actuators and capacitors.

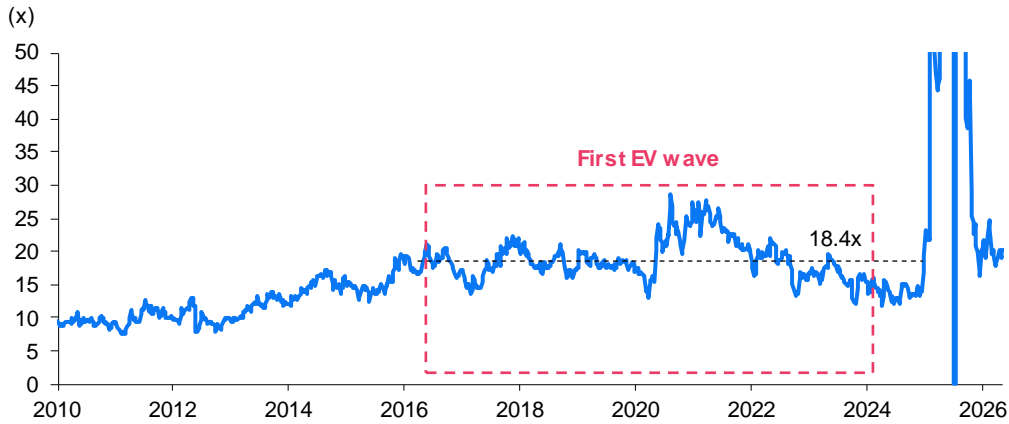
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- **Integrating thermal interface materials (TIMs):** At the assembly stage, manufacturers such as Hyundai Mobis embed high-conductivity thermal pads or gels to accelerate heat transfer from motor windings to external cooling fins.
- **Optimizing power semiconductors:** Replacing conventional silicon MOSFETs with gallium nitride (GaN) components in motor drivers increases switching speed by 10-100x, substantially reducing overall heat generation.

Atlas's core design principle—compatibility with the automotive supply chain: The same technologies and manufacturing processes used in Hyundai Mobis's automotive components are applied directly to Atlas actuators. This minimizes R&D investment, enables the reuse of existing production lines, and supports profitability from the earliest stages of volume production.

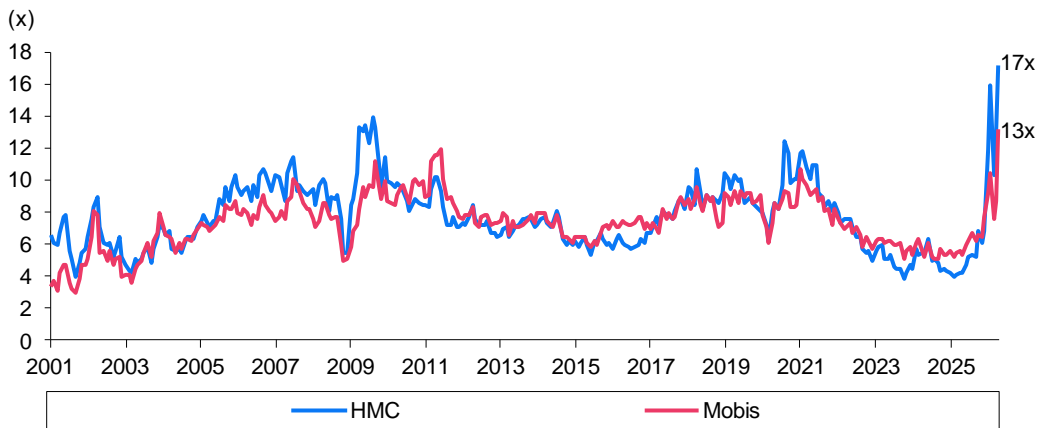
- **Mobis participates in Atlas production design:** Automotive parts typically weigh more than 15 kg, while Atlas's maximum payload is 45 kg. The key challenge is withstanding impact loads during movement. For high-stress zones—the hips and waist—Hyundai Mobis employs a hybrid planetary-cycloidal gear system. For the knees and ankles, which absorb ground impact, planetary gears are used for their shock-damping properties.
- **Planetary gears—a mature automotive technology:** Planetary gears are widely used in automatic transmissions, EV reduction gears, electric power steering, and hybrid power-split systems.
- **Scalable production:** Hyundai Mobis can ramp up actuator gear production without new greenfield investment, as its existing CNC hobbing, grinding, and heat-treatment lines, originally designed for automotive gears, are directly adaptable to robot actuator manufacturing.

Hanon Systems: Valuation premium as a thermal management company amid the EV wave



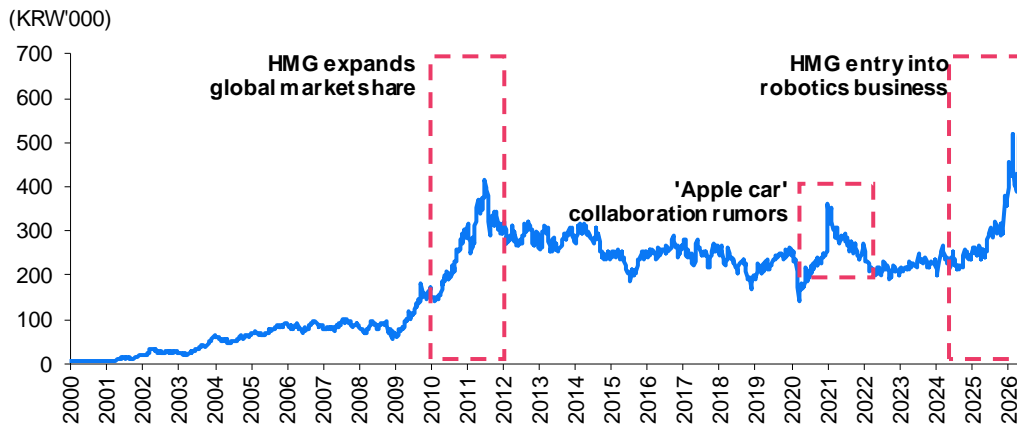
Source: Bloomberg, Samsung Securities

Hyundai Motor vs Hyundai Mobis: 12-month forward P/E valuation



Source: QuantiWise, Samsung Securities

Hyundai Mobis: Long-term share-price performance



Source: QuantiWise, Samsung Securities

Atlas: Thermal management technology

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Battery	Battery thermal management system (BTMS)	Keeps cell temperature uniform via cooling plates	Removable battery pack design (marathon pit-stop style)
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Source: Boston Dynamics, Samsung Securities

Role of thermal management in robot actuator systems

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Reducer lubrication & Sealing	Selection of high-temperature grease; leak-proof sealing design with compensation for thermal expansion	Experience in lubrication design for EPS and e-Axle reducers
Driver IC integration	Direct thermal path design from GaN chip to housing for efficient heat dissipation	Requires co-design with power electronics partners
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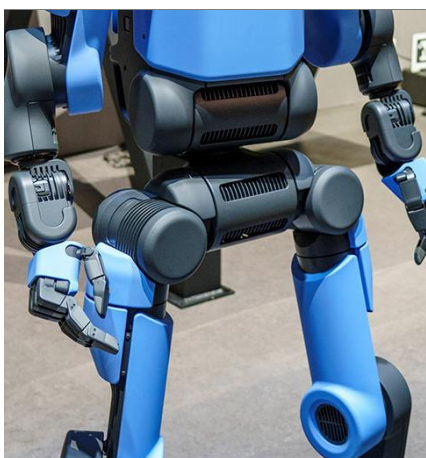
Source: Boston Dynamics, Samsung Securities

Atlas: Actuator configuration

Location	Actuator type	Core reduction mechanism	Rationale
Hips, waist, neck	Rotary	Planetary + cycloidal hybrid	Requires 360° rotation range and high torque density
Shoulders, elbows	Rotary	Custom high-torque electric actuator	Needs multi-axis rotation and flexible manipulation
Knees, ankles	Linear	Planetary roller screw (PRS)	Distributes impact loads and supports lower-body weight loads
Fingers, grippers	Micro linear	Ball screw or lead screw	Enables precise grasping in confined spaces

Source: Boston Dynamics, Samsung Securities

Atlas: Hips and waist



Source: Boston Dynamics

Atlas: Knees and ankles



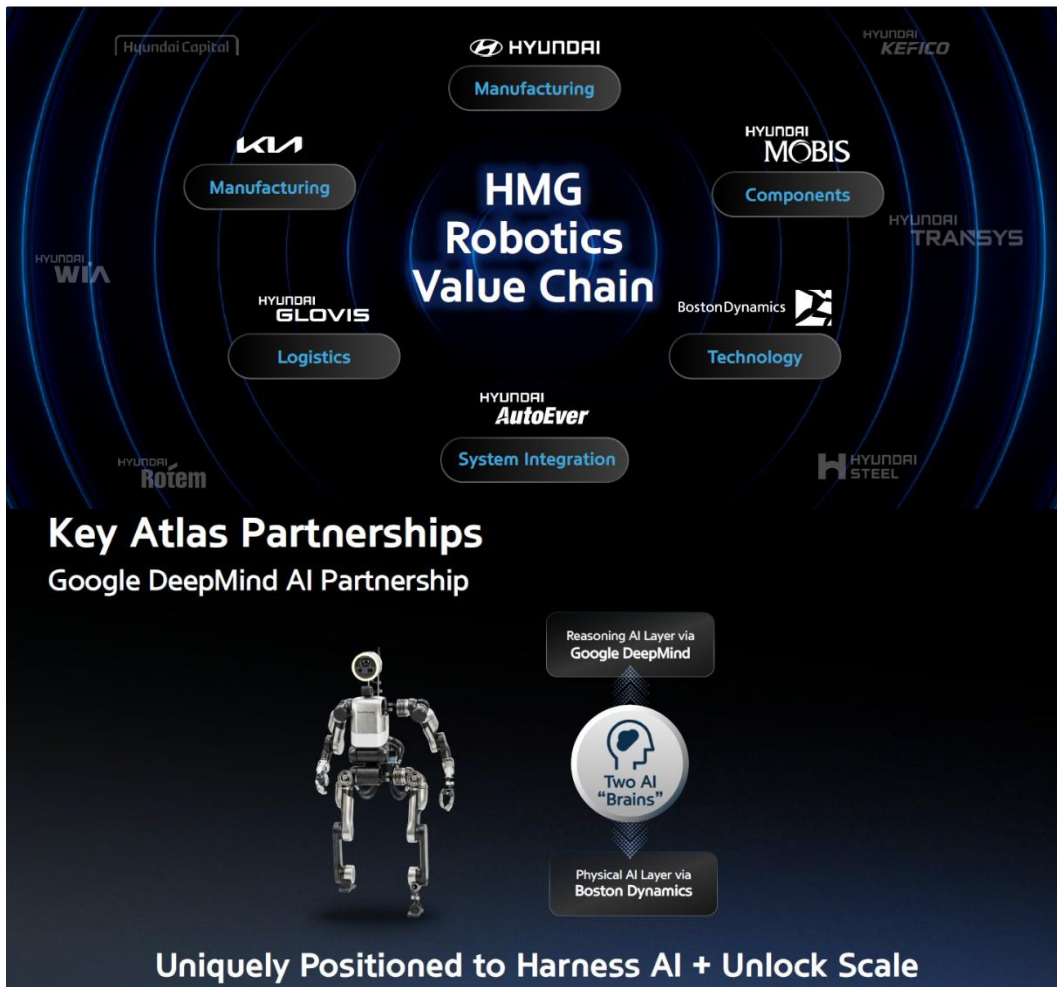
Source: Boston Dynamics

Atlas: Gripper



Source: Boston Dynamics

HMG: Robotics value chain



Source: Company data

HMC's role: Manufacturing



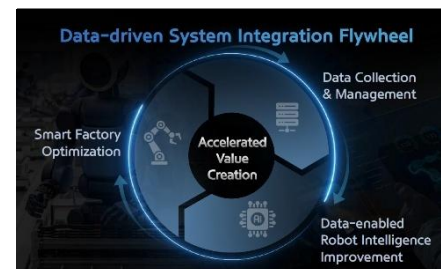
Source: Company data

Mobis's role: Core components partner



Source: Company data

AutoEver's role: System integration



Source: Company data

HMG: Global robotics ecosystem



Source: Company data

RA (Robotics America): Robot manufacturing facility 2028 targets (initial capacity of 30,000 units)

Mass Production Platform with Flexible Manufacturing

Robot Friendly Engineering

- Design for Manufacturing
- Advanced Manufacturing Partnership
- Operational Efficiency

Robot by Robot Production

Mass Production Facility for Diverse Robots

Planned Launch: 2028
Initial Capacity: 30,000 units/year

Source: Company data

RMAC (Robot Metaplant Application Center): Robot training center to be established by summer 2026

Real-World Training Hub

Continuous Workflow for Advancing Robot Physical AI

Millions of Hours of Data Accumulation

- Simulated Environment
- Physical Data Collection
- Verification of Application

Advanced Physical AI

Data collection, learning center for AI

Planned Launch: 2026 Summer
Located within HMG Metaplant America, GA

Source: Company data

Hyundai Mobis: Parts manufacturing facility 2028 targets (initial capacity of 350,000 units)

Core Component Internalization

- Lowering core component supply risk
- Cost and Quality Direct Management
- Future Component Scale-up

Actuator E2E Value Chain Completion
From Parts Development to Final Supply

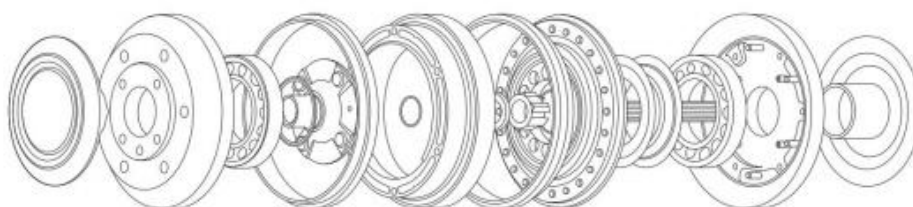
- R&D
- Production
- Supply

Core Component Manufacturing Plant

Planned Launch: 2028
Capacity: 350,000 + units/year

Source: Company data

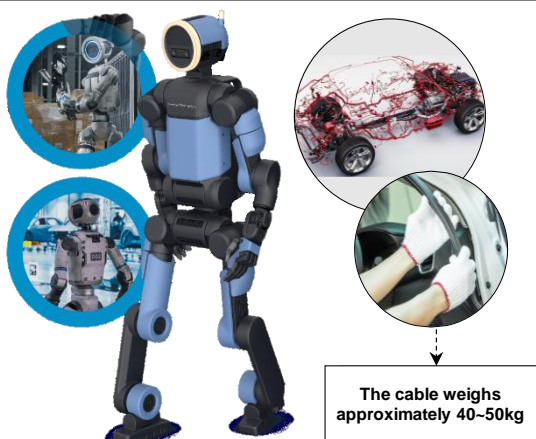
Hyundai Mobis: Cableless actuator structure



* Concept image of Mobis actuator

Source: Company data

Atlas Gen3: Employs cableless actuator structure



Source: Company data

Atlas: Cost breakdown (estimates)

Item	Unit cost (USD)	Quantity	Total cost (USD)
Rotary actuator	561	31	17,391
Vision sensor	41	3	123
Nvidia Thor chip	800	1	800
Gripper	800	2	1,600
Battery pack	200	4 kWh	200
Body			2,000
Subtotal			22,114
Data center depreciation*			26,666
Factory depreciation			442
Other operating costs			1,769
Total			50,991

Note: Assumes 10,000 units produced;

*Assumes usage of one-third of 50,000 Blackwell GPUs

Source: Samsung Securities estimates

Hyundai Mobis: Estimated revenue from Boston Dynamics Atlas

Timeline	Volume (units)	Production cost (each, USD)	Mobis manufacturing portion	Unit cost (USD)	Mobis sales* (USDm)	Mobis sales** (KRWb)
2027	5,000	130,000	60%	78,000	425	617
2028	10,000	50,992	60%	30,595	321	466
	20,000	37,659	60%	22,595	475	688
2029	30,000	33,214	60%	19,929	628	910
	40,000	30,992	60%	18,595	781	1,132
2030	50,000	29,659	60%	17,795	934	1,355

Note: *Sales figures inflated by 5% to account for aftermarket services revenue;

**Assumes exchange rate of USD/KRW1,450

Source: Samsung Securities estimates

Mobis: Results and forecasts

(KRWb)	1Q25	2Q25	3Q25	4Q25	1Q26	2Q26E	3Q26E	4Q26E	2024	2025	2026E	2027E
KRW/USD (avg)	1,453	1,401	1,387	1,452	1,467	1,450	1,430	1,420	1,365	1,423	1,442	1,390
Revenue	14,752	15,936	15,032	15,398	15,561	16,834	16,430	16,320	57,237	61,118	65,144	68,938
Chg (% y-y)	6.4	8.7	7.4	4.7	5.5	5.6	9.3	6.0	-3.4	6.8	6.6	5.8
Simple modules	6,799	7,403	6,849	7,181	7,149	7,948	7,691	7,182	25,633	28,232	29,970	31,546
Core parts & electrification	4,675	5,204	4,826	4,863	4,892	5,303	5,147	5,375	19,518	19,568	20,718	22,288
After-sales service	3,278	3,330	3,357	3,354	3,519	3,583	3,591	3,763	12,085	13,318	14,456	15,104
Gross profit	2,062	2,198	2,129	2,440	2,149	2,117	2,194	2,410	8,063	8,830	8,871	9,866
Operating profit	777	870	780	930	803	922	1,028	1,167	3,073	3,357	3,920	4,627
Chg (% y-y)	43.1	36.8	-14.1	-5.6	3.3	6.0	31.7	25.4	33.9	9.2	16.7	18.0
Modules	-100	42	-37	171	-121	-11	100	195	-42	76	164	732
After-sales service	877	828	817	760	924	933	927	972	3,116	3,282	3,756	3,895
Net profit	1,032	934	931	768	883	1,046	1,091	1,295	4,060	3,665	4,314	4,962
Controlling profit	1,031	932	929	763	882	1,044	1,089	1,292	4,056	3,656	4,307	4,954
Chg (% y-y)	19.7	-6.4	1.1	-40.3	-14.5	11.9	17.2	69.4	18.5	-9.9	17.8	15.0
Margins (%)												
Gross profit	14.0	13.8	14.2	15.8	13.8	12.6	13.4	14.8	14.1	14.4	13.6	14.3
Operating profit	5.3	5.5	5.2	6.0	5.2	5.5	6.3	7.2	5.4	5.5	6.0	6.7
Modules	-0.9	0.3	-0.3	1.4	-1.0	-0.1	0.8	1.6	-0.1	0.2	0.3	1.4
After-sales service	26.7	24.9	24.3	22.7	26.3	26.0	25.8	25.8	25.8	24.6	26.0	25.8
Net profit	7.0	5.9	6.2	5.0	5.7	6.2	6.6	7.9	7.1	6.0	6.6	7.2
Controlling net profit	7.0	5.9	6.2	5.0	5.7	6.2	6.6	7.9	7.1	6.0	6.6	7.2

Source: Company data, Samsung Securities

Income statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Sales	57,237	61,118	65,144	68,938	72,997
Cost of goods sold	49,174	52,288	56,273	59,072	62,255
Gross profit	8,063	8,830	8,871	9,866	10,742
Gross margin (%)	14.1	14.4	13.6	14.3	14.7
SG&A expenses	4,989	5,472	4,951	5,239	5,548
Operating profit	3,073	3,357	3,920	4,627	5,194
Operating margin (%)	5.4	5.5	6.0	6.7	7.1
Non-operating gains (losses)	2,191	1,758	2,138	2,265	2,398
Financial profit	812	606	456	508	595
Financial costs	486	355	167	154	154
Equity-method gains (losses)	1,788	1,400	1,750	1,870	1,965
Other	78	107	98	41	-8
Pre-tax profit	5,264	5,115	6,057	6,892	7,592
Taxes	1,204	1,450	1,743	1,930	2,126
Effective tax rate (%)	22.9	28.4	28.8	28.0	28.0
Profit from continuing operations	4,060	3,665	4,314	4,962	5,466
Profit from discontinued operations	0	0	0	0	0
Net profit	4,060	3,665	4,314	4,962	5,466
Net margin (%)	7.1	6.0	6.6	7.2	7.5
Net profit (controlling interests)	4,056	3,656	4,307	4,954	5,457
Net profit (non-controlling interests)	5	9	7	8	9
EBITDA	4,058	4,525	5,200	6,004	6,628
EBITDA margin (%)	7.1	7.4	8.0	8.7	9.1
EPS (parent-based) (KRW)	43,480	39,682	47,711	55,283	60,898
EPS (consolidated) (KRW)	43,528	39,779	47,792	55,377	61,002
Adjusted EPS (KRW)*	43,480	39,682	47,711	55,283	60,898

Cash flow statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Cash flow from operations	4,253	4,473	3,776	4,405	4,867
Net profit	4,060	3,665	4,314	4,962	5,466
Non-cash profit and expenses	625	1,841	318	417	488
Depreciation	903	1,065	1,193	1,303	1,371
Amortization	82	102	87	74	63
Other	-360	674	-962	-961	-946
Changes in A/L from operating activities	-822	-708	-68	-64	-68
Cash flow from investments	-4,589	-3,234	-2,100	-2,100	-1,900
Change in tangible assets	-2,088	-1,281	-2,100	-2,100	-1,900
Change in financial assets	65	1	-0	-0	-0
Other	-2,566	-1,953	-0	-0	-0
Cash flow from financing	-255	-1,205	-1,088	-570	-658
Change in debt	804	114	-511	0	0
Change in equity	4	10	0	0	0
Dividends	-406	-583	-577	-570	-658
Other	-657	-745	0	0	0
Change in cash	-291	134	801	2,135	2,701
Cash at beginning of year	5,079	4,788	4,922	5,724	7,859
Cash at end of year	4,788	4,922	5,724	7,859	10,560
Gross cash flow	4,685	5,506	4,632	5,379	5,955
Free cash flow	2,049	3,125	1,676	2,305	2,967

Note: *Excluding one-off items;

**Fully diluted, excluding one-off items;

***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

Balance sheet

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Current assets	28,424	30,366	32,390	35,677	39,610
Cash & equivalents	4,788	4,922	5,724	7,859	10,560
Accounts receivable	9,914	10,221	10,894	11,529	12,208
Inventories	6,763	6,862	7,314	7,740	8,196
Other current assets	6,958	8,361	8,458	8,549	8,647
Fixed assets	38,173	40,034	42,414	44,607	46,645
Investment assets	23,438	24,789	26,349	27,819	29,392
Tangible assets	12,003	12,347	13,254	14,051	14,580
Intangible assets	1,167	1,266	1,178	1,104	1,041
Other long-term assets	1,564	1,633	1,633	1,633	1,633
Total assets	66,597	70,401	74,804	80,284	86,256
Current liabilities	12,745	13,058	13,321	14,051	14,831
Accounts payable	6,748	6,691	7,132	7,548	7,992
Short-term debt	648	796	796	796	796
Other current liabilities	5,350	5,570	5,393	5,707	6,043
Long-term liabilities	7,733	8,130	8,510	8,868	9,251
Bonds & long-term debt	1,927	1,819	1,819	1,819	1,819
Other long-term liabilities	5,806	6,311	6,691	7,049	7,432
Total liabilities	20,479	21,188	21,831	22,919	24,082
Owners of parent equity	46,081	49,168	52,920	57,304	62,103
Capital stock	491	491	491	491	491
Capital surplus	1,367	1,377	1,377	1,377	1,377
Retained earnings	42,911	45,225	48,954	53,338	58,137
Other	1,311	2,075	2,098	2,098	2,098
Non-controlling interests' equity	37	45	53	61	70
Total equity	46,118	49,213	52,973	57,365	62,173
Net debt	-1,236	-1,256	-2,568	-4,704	-7,405

Financial ratios

Year-end Dec 31	2024	2025	2026E	2027E	2028E
Growth (%)					
Sales	-3.4	6.8	6.6	5.8	5.9
Operating profit	33.9	9.2	16.7	18.0	12.3
Net profit	18.6	-9.7	17.7	15.0	10.2
Adjusted EPS**	19.6	-8.7	20.2	15.9	10.2
Per-share data (KRW)					
EPS (parent-based)	43,480	39,682	47,711	55,283	60,898
EPS (consolidated)	43,528	39,779	47,792	55,377	61,002
Adjusted EPS**	43,480	39,682	47,711	55,283	60,898
BVPS	509,212	551,325	603,473	653,462	708,189
DPS (common)	6,000	6,500	6,500	7,500	8,000
Valuations (x)					
P/E***	5.4	9.4	14.4	12.4	11.3
P/B***	0.5	0.7	1.1	1.0	1.0
EV/EBITDA	5.1	7.2	11.5	9.6	8.3
Ratios (%)					
ROE	9.4	7.7	8.4	9.0	9.1
ROA	6.5	5.4	5.9	6.4	6.6
ROIC	11.3	10.7	11.8	13.3	14.3
Payout ratio	13.3	15.9	13.2	13.3	12.9
Dividend yield (common)	2.5	1.7	0.9	1.1	1.2
Net debt to equity	-2.7	-2.6	-4.8	-8.2	-11.9
Interest coverage (x)	23.8	19.0	23.5	30.0	33.7

COMPANY UPDATE

2026. 6. 17

EV/Mobility Team

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▶ AT A GLANCE

BUY

Target price **KRW95,000** 34.6%

Current price **KRW70,600**

Market cap KRW3.3t/USD2.2b

Shares (float) 46,957,120 (68.3%)

52-week high/low KRW71,400/KRW32,650

Avg daily trading value (60-day) KRW37.5b/USD24.8m

▶ ONE-YEAR PERFORMANCE

	1M	6M	12M
HL Mando (%)	14.4	34.7	113.3
Vs Kospi (%pts)	0.3	-35.5	-27.8

▶ KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	BUY	BUY	
Target price	95,000	80,000	18.7%
2026E EPS	5,118	5,118	0.0%
2027E EPS	6,869	6,869	0.0%

▶ SAMSUNG vs THE STREET

No of estimates	21
Target price	76,200
Recommendation	3.9

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL



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HL Mando (204320)

Actuators with thermal management and the second EV wave

- Robot thermal management is based on air-cooled designs, with actuators and capacitors playing critical roles. HL Mando embeds thermal management functionality within its actuators through a multi-layered structural design.
- HL Mando supplies actuators for use in a quadruped robot and is a leading supplier of steering and IDB actuators for leading North American EV maker. Significant opportunities in the actuator domain are expected to emerge as robot mass-production is scaled up.
- US-Chinese supply chains are decoupling and earnings growth at HL Mando's global competitors is underperforming. In the smart chassis and robotic actuator markets, HL Mando possesses clear growth visibility.

WHAT'S THE STORY?

Raising target price: We raise our 12-month target price by 18.7% to KRW95,000. Robotic actuators not only enable mobility (of the robot) but also play a critical role in the robot's thermal management. HL Mando integrates advanced thermal management technologies directly into the design of its actuators.

- **HL Mando, alongside Hyundai Mobis, to stand at forefront of robotic thermal management value chain:** We raise our target P/E by 22% from 13.5x to 16.5x, based on the average of our 2026 and 2027 EPS forecasts. The 16.5x multiple reflects a 10% discount to Hanon Systems' 2016-2024 average P/E (18.4x; Hanon Systems is a leading supplier of EV thermal components). The discount stems from HL Mando having yet to confirm humanoid robot-related orders.

(Continued on the next page)

SUMMARY FINANCIAL DATA

	2025	2026E	2027E	2028E
Revenue (KRWb)	9,455	9,926	10,556	11,284
Operating profit (KRWb)	357	424	501	557
Net profit (adj) (KRWb)	123	256	343	388
EPS (adj) (KRW)	2,130	5,118	6,869	7,777
EPS (adj) growth (% y-y)	-23.0	140.2	34.2	13.2
EBITDA margin (%)	7.6	7.6	7.4	7.1
ROE (%)	3.8	8.5	10.5	10.9
P/E (adj) (x)	27.6	13.8	10.3	9.1
P/B (x)	1.0	1.1	1.0	0.9
EV/EBITDA (x)	5.8	5.8	4.9	4.2
Dividend yield (%)	1.3	1.7	2.0	2.0

Source: Company data, Samsung Securities estimates

Both HL Mando and Hyundai Mobis possess core automotive technologies (motors, sensors, steering, and gearboxes), which technologies are directly transferable to robotic actuators. With a manufacturing facility in the US, HL Mando is well-placed to supply robotic actuators to more US-based robotics companies.

- **Thermal management—key hardware bottleneck for humanoid robots:** The primary heat sources in robots are the actuators (which are located at each joint). While heat output per actuator is limited, continuous 24/7 operations lead to cumulative thermal buildup. Due to cable-free designs and confined internal spaces, liquid cooling (which requires piping) is impractical. Effective thermal dissipation relies on air-cooled designs, advanced materials, and optimized actuator-capacitor integration to enable sufficient passive heat release.

Actuator manufacturers' role in robotic thermal management: For robotic thermal management, actuator makers play a critical role through thermal isolation and low-friction designs.

- **Separation of gear heat and motor heat:** Frictional heat generated by meshing planetary or cycloidal gears, when combined with electric heat from the motor, can raise robot core temperatures to a point where magnets become demagnetized, leading to irreversible torque loss. Actuator suppliers mitigate this by applying advanced surface treatments such as diamond-like carbon (DLC) coatings to gear surfaces, significantly reducing friction and localized heat generation.
- **Integration of thermal interface materials (TIM):** At the actuator assembly stage, HL Mando systematically integrates high-conductivity thermal pads or gels to ensure rapid heat transfer from the motor windings to external cooling fins.
- **Selection of power semiconductor devices:** The thermal performance of motor driver ICs is optimized through component selection. Replacing conventional silicon MOSFETs with gallium nitride (GaN)-based power devices lifts switching speeds 10-100x, reducing overall heat generation.

Confident in attracting customers for robot actuator business: HL Mando should differentiate itself from Chinese competitors by leveraging its strengths in durability, quality, sourcing capabilities, North American manufacturing, and established customer relationships.

- **Humanoid robot market outlook:** The global humanoid robot market is projected to grow from KRW2t in 2025 to KRW445t by 2035. Actuators are estimated to account for 44% of total manufacturing costs. HL Mando aims to capture a 10% share of the robotic actuator segment, achieving KRW2.3t in annual sales.
- **Roadmap:** 2024-2025: Complete development of three master models and nine product-line specifications.
2026: Conduct technical validation (proof of concept) and pilot evaluations with key customers, internalize core technologies, and pursue M&As and JVs to secure foundational technologies.
2027-2028: Secure orders domestically and overseas, and begin pilot production in North America.
2029: Scale up mass-production in North America and Korea.
- **Weaknesses of Chinese actuators:** While Chinese actuators offer cost advantages, they suffer from lower durability and high component fatigue. They may be suitable for early-stage humanoid

robot prototypes, but mass-production should require tier-1 suppliers with comprehensive system-integration capabilities.

- **Competitive advantages:** We highlight four of HL Mando's major competitive advantages. First, six decades of experience in automotive control systems have established deep trust in the durability and quality of its products. Second, the firm has fully internalized core technologies for motors and sensors. For gearboxes, design capabilities are in-house, while high-precision harmonic drives are currently sourced from Japan's Harmonic Drive Systems—strategic M&As and JVs are underway to achieve full technology ownership. Third, the firm boasts strong, long-term partnerships with leading physical-AI pioneers, including a top North American EV manufacturer (13 years) and a leading Chinese SDV innovator (6 years), ensuring close alignment with customer roadmaps and technical requirements. Fourth, localized production and supply chain infrastructure in North America provide a strategic advantage in an era of escalating geopolitical risks.
- **Internalization of actuator thermal management:** The key to dealing with heat generation in robots at the actuator level lies in a multi-design approach encompassing mechanical, electric, software, and system engineering. Rather than adding separate cooling devices, the structure focuses on reducing the heat source and optimizing heat dissipation, thereby internalizing thermal management within the actuator design itself.

Second wave of EV adoption gaining momentum: EV demand is growing across all markets worldwide—except the US, where demand is likely to recover after September. Among global mobility suppliers, HL Mando has the highest exposure to the EV value chain and the firm is well positioned to capitalize on this structural shift from ICE autos to EVs.

- **Autonomous driving is accelerating the next EV wave:** The auto industry is entering a new phase, with Level 2+ and higher autonomous systems increasingly integrated into mainstream consumer vehicles, while robotaxis expand rapidly in some major cities. A North American EV manufacturer is seeing consistent quarterly growth in subscription additions for autonomy features. GM also reported a 40% adoption rate for its highway-level driver assistance in North America.

EVs are uniquely inherently suited for advanced autonomy, offering superior energy efficiency and faster real-time response to AI-driven controls. As consumer demand for these capabilities grows, it should further drive EV adoption.

- **Smart chassis sales and orders expanding:** Higher utilization at HL Mando's Mexico plant, which produces IDB systems, is boosting profitability. The company has also secured orders to supply steer-by-wire (SbW) products for robotaxi systems. It is now outpacing global tier 1 suppliers Bosch and Continental in terms of winning IDB and X-by-Wire contracts.
- **Bosch and Continental face profitability challenges:** In 2025, Bosch recorded automotive parts sales of USD63.1b, up 4.6% y-y, ranking as the world's largest parts maker, while Continental (Aumovio) posted sales of USD21b, down 1.3% y-y, ranking eighth globally. Bosch and Continental were both leaders in electrified braking and steering systems for ICE vehicles. Since the pandemic, however, their earnings have declined in tandem with those of their key European automotive customers, and they are losing their once-leading technological positions. Bosch's operating margin fell to 1.8% in 2025, roughly half its pre-pandemic level. Continental spun off its automotive parts

division into a sperate entity, Aumovio, and continues to restructure, yet Aumovio remains loss-making.

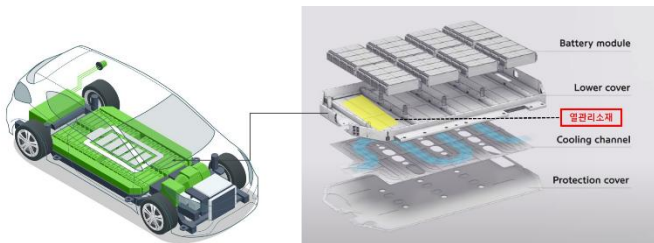
- **ADAS sales growing:** HL Mando's ADAS sales to Hyundai Motor Group, which had slowed amid competition from Hyundai Mobis, have returned to an uptrend on rising demand from India since 2025.

Difference in heat generation structure: EVs vs humanoid robots

Category	EV	Humanoid robot
Primary heat sources	Battery, drive motor	Actuators, inference chips
Heat distribution	Concentrated (clear thermal path from fixed components to cooling jacket)	Distributed (3+ heat sources coexist within a single joint)
Dominant cooling method	Liquid cooling (water jacket), oil cooling	Natural convection (no fan), indirect conductive cooling
Operating temperature range	-40°C to 120°C (engine compartment baseline)	0°C to 45°C (indoor factory environment), with cumulative thermal stress under high-cycle operation
Space constraints	Relatively ample (dedicated cooling jacket space available)	Extremely limited (must be integrated within joint housing)
Weight sensitivity	Low	Very high (gram-level weight optimization required)
Coolant circulation	External pump and radiator loop	No external loop possible → passive heat dissipation prioritized

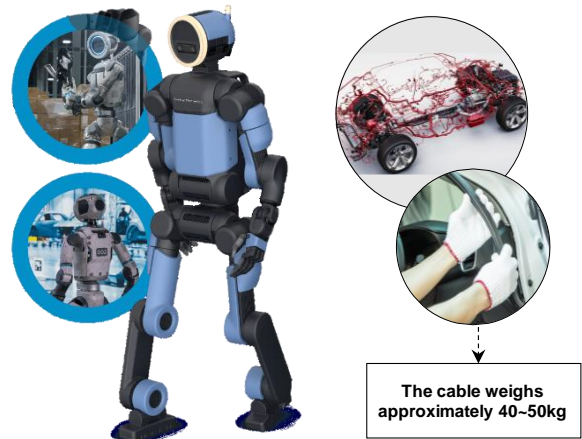
Source: Samsung Securities

Battery thermal management for EVs



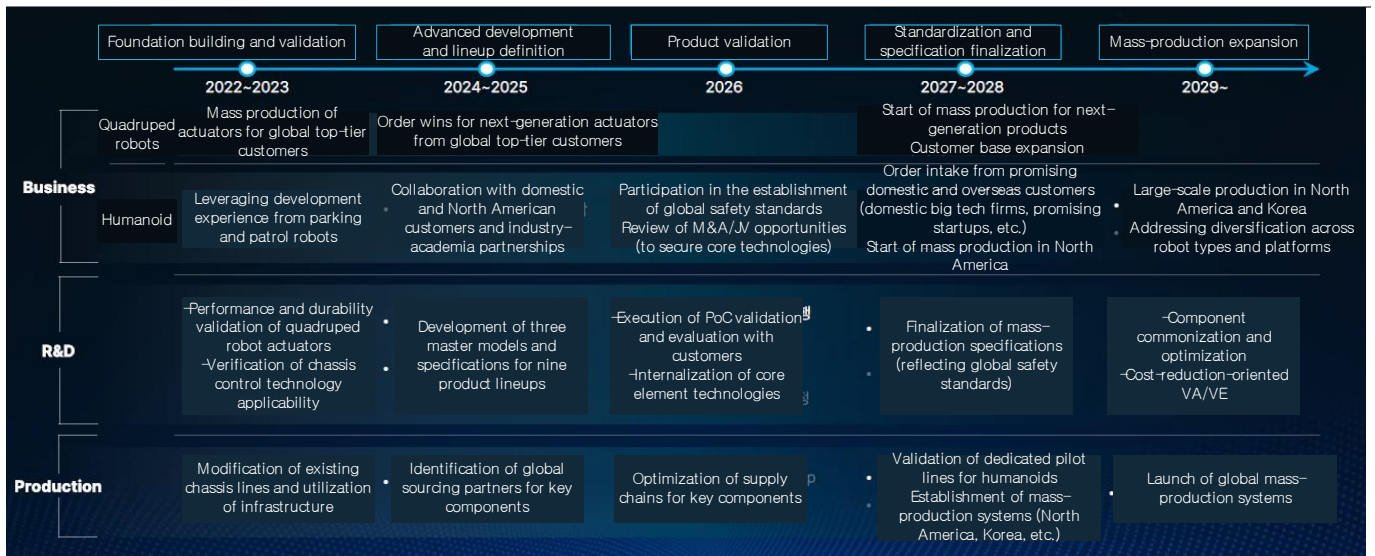
Source: Samyang Corporation

Atlas (3rd generation): Employs cableless actuator structure



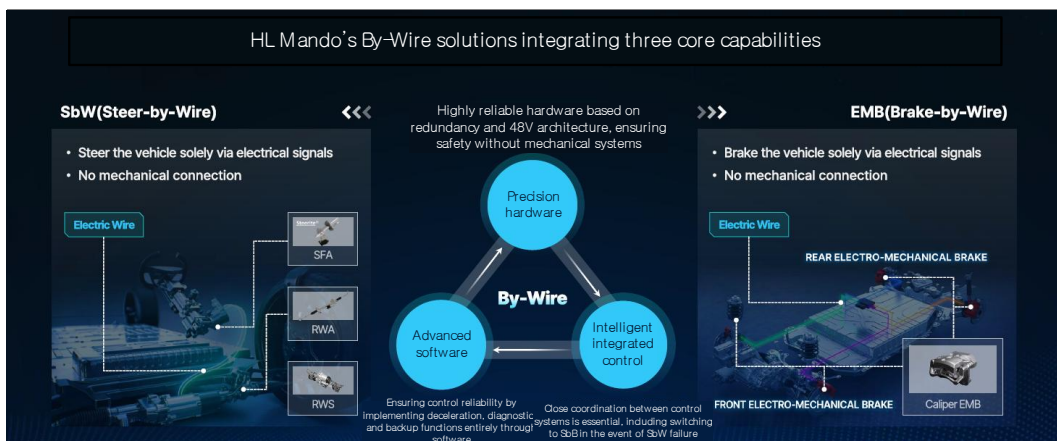
Source: Company data

HL Mando: Robot actuator business roadmap



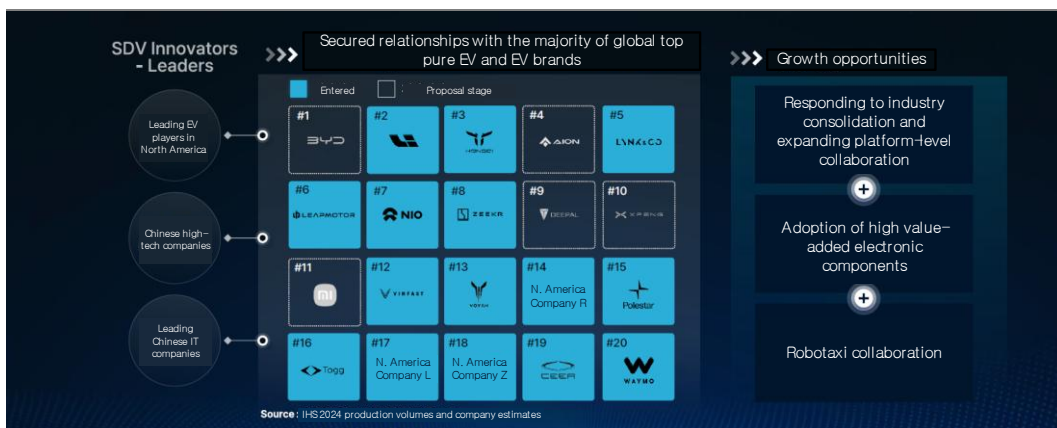
Source: Company data

HL Mando: By-wire solutions



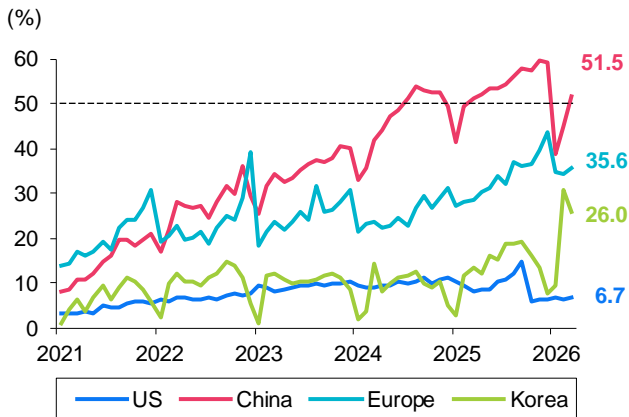
Source: Company data

HL Mando: SDV ecosystem and customer landscape



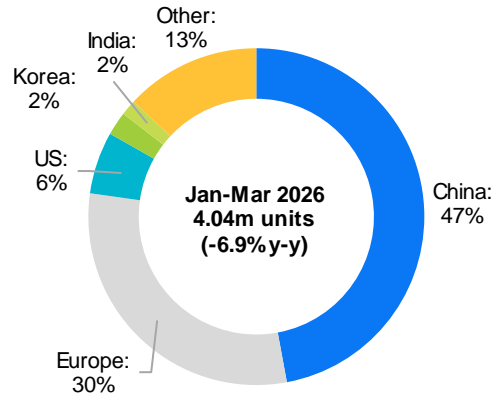
Source: Company data

EV penetration, by country and region



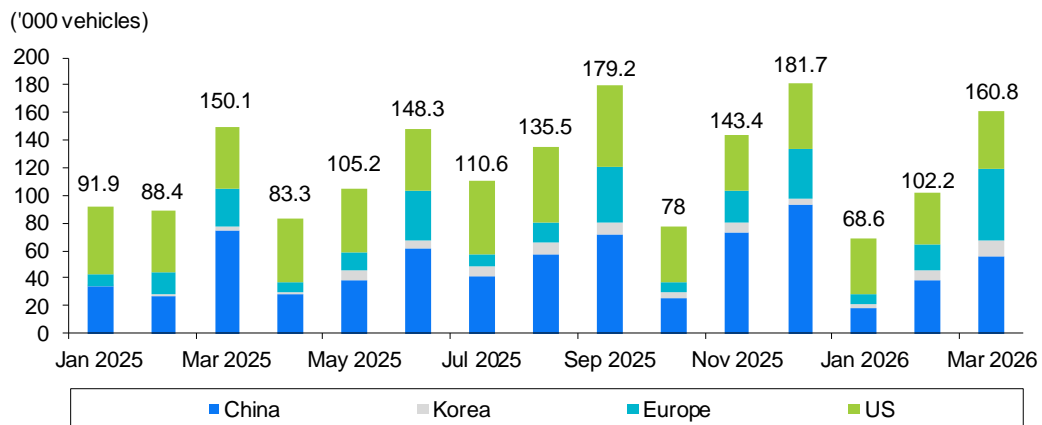
Source: EV-Volumes, Samsung Securities

Global EV demand portion, by country



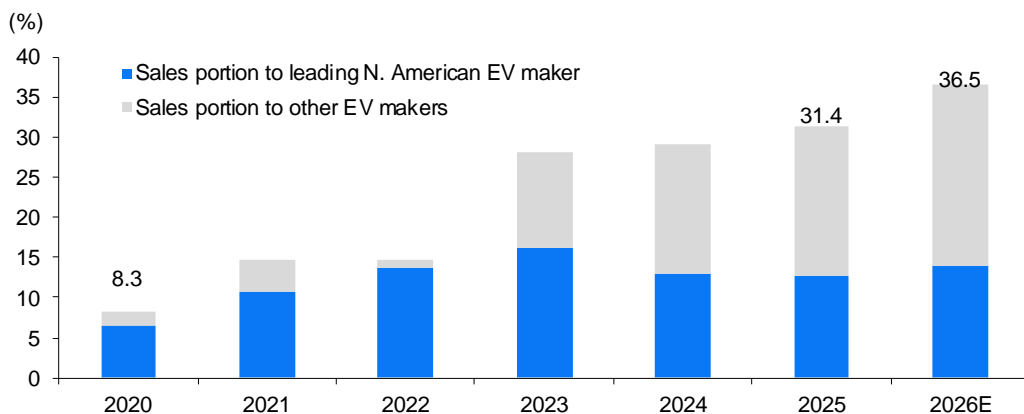
Source: EV-Volumes, Samsung Securities

Leading North American EV maker: Sales volume, by region



Source: CPCA, ACEA, KAIDA, Wards, Samsung Securities

HL Mando: EV component sales as portion of total



Source: Company data, Samsung Securities

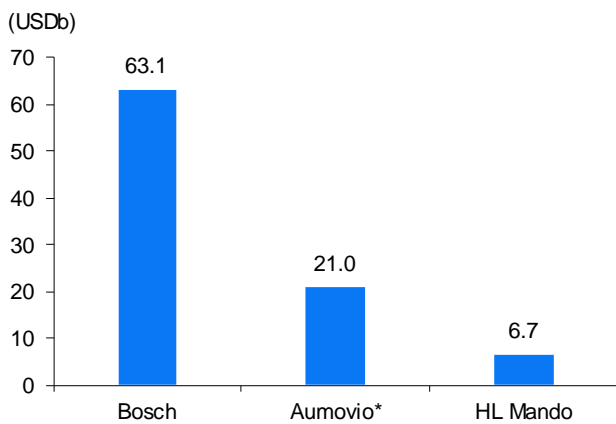
HL Mando: Robotaxi customer portfolio

		Brake	Steering	Suspension
China	Leading Chinese IT firm	✓	✓ (SbW; orders taken)	✓ (first order landed in Apr 2026)
	Leading Chinese IT company (B)		✓	✓
US	Leading N. American EV maker	✓	✓	✓
	N. American Big-Tech subsidiary (A)	✓	✓ (SbW)	
	Waymo	✓	✓	✓

Note: As of 1Q26

Source: Company data, Samsung Securities

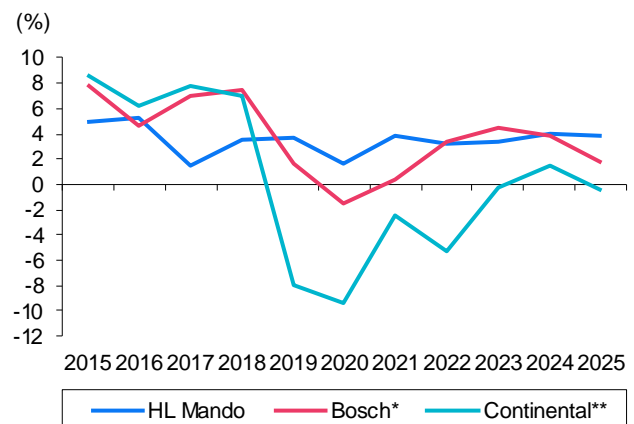
Global chassis companies: Revenue (2025)



Note: *Spun off from Continental's automotive unit in 2025

Source: Bloomberg, Samsung Securities

Global chassis companies: Operating margin

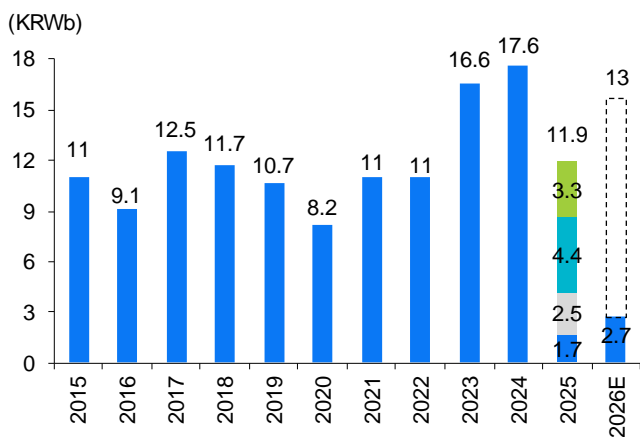


Note: *Automotive division;

**Automotive Group division (~2022), Aumovio (2023~)

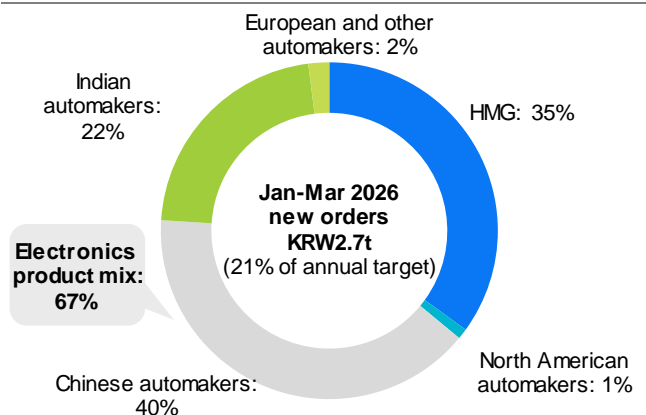
Source: Bloomberg, Samsung Securities

HL Mando: New orders vs guidance



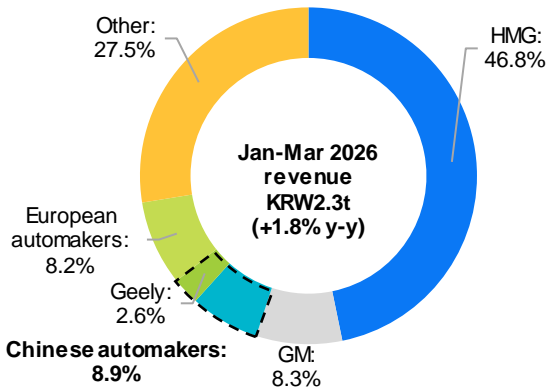
Source: Company data, Samsung Securities

HL Mando: New orders, by client



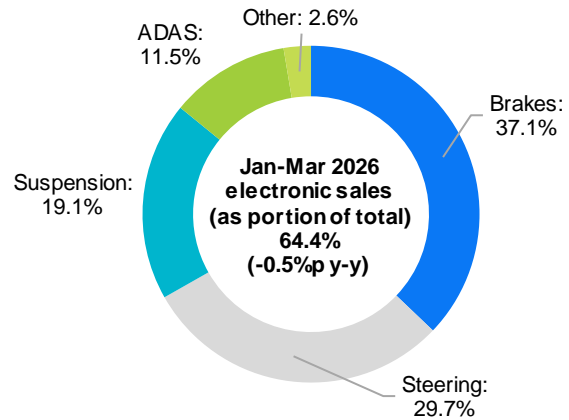
Source: Company data, Samsung Securities

HL Mando: Sales, by client



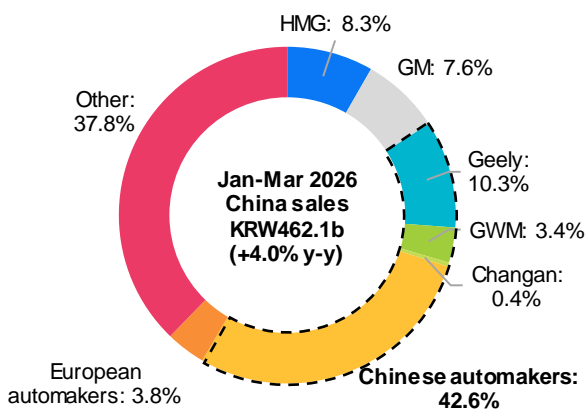
Source: Company data, Samsung Securities

HL Mando: Sales, by product



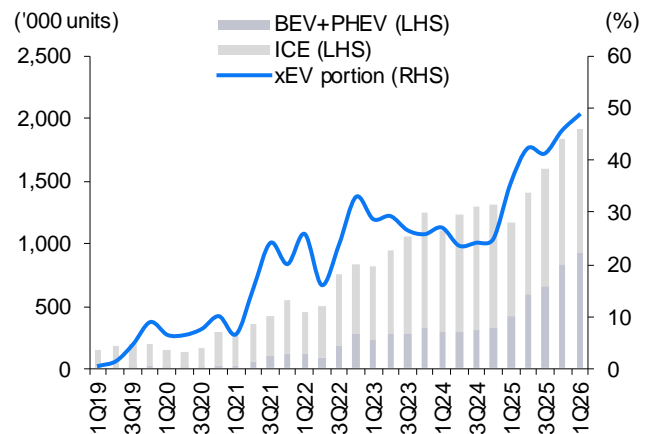
Source: Company data, Samsung Securities

HL Mando China: Sales, by client



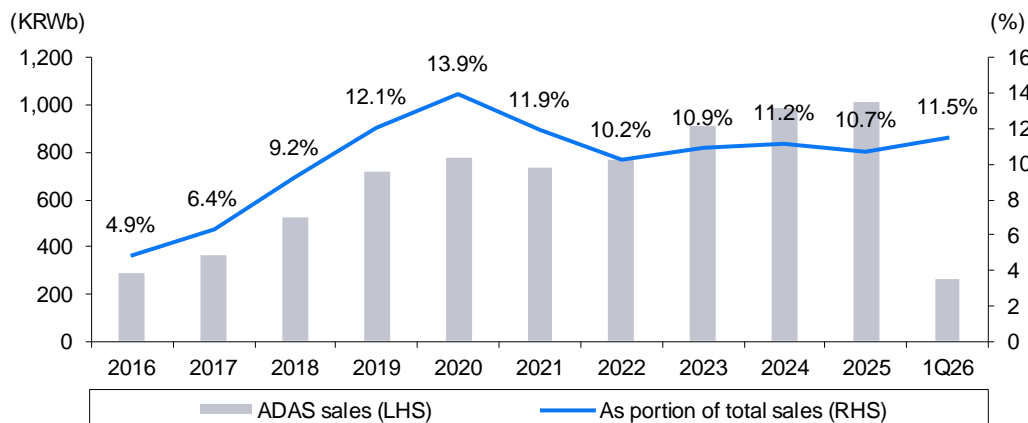
Source: Company data, Samsung Securities

China: Auto exports



Source: Company data, Samsung Securities

HL Mando: ADAS sales



Source: Company data, Samsung Securities

HL Mando: Result and forecasts

(KRWb)	1Q25	2Q25	3Q25	4Q25	1Q26	2Q26E	3Q26E	4Q26E	2024	2025	2026E	2027E
KRW/USD (avg)	1,453	1,401	1,387	1,452	1,467	1,450	1,430	1,420	1,365	1,423	1,442	1,390
Sales	2,271	2,401	2,321	2,462	2,312	2,484	2,546	2,585	8,848	9,455	9,926	10,556
Chg (% y-y)	7.8	11.8	6.9	1.6	1.8	3.4	9.7	5.0	5.4	6.9	5.0	6.3
Gross profit	320	365	362	397	361	338	357	584	1,323	1,444	1,641	1,799
Operating profit	79	104	94	80	94	105	116	109	359	357	424	501
Chg (% y-y)	4.7	16.2	14.1	-28.2	18.2	0.8	22.8	37.2	28.5	-0.5	18.6	18.2
Operating profit	62	34	66	56	86	85	100	86	265	218	356	458
Net profit	35	10	49	29	53	64	75	64	158	123	256	343
Controlling profit	28	4	44	24	48	60	70	60	130	100	240	323
Margins (%)												
Gross profit	14.1	15.2	15.6	16.1	15.6	13.6	14.0	22.6	15.0	15.3	16.5	17.0
Operating profit	3.5	4.3	4.1	3.2	4.0	4.2	4.5	4.2	4.1	3.8	4.3	4.7
Net profit	1.5	0.4	2.1	1.2	2.3	2.6	2.9	2.5	1.8	1.3	2.6	3.3
Controlling profit	1.2	0.2	1.9	1.0	2.1	2.4	2.8	2.3	1.5	1.1	2.4	3.1

Source: Company data, Samsung Securities estimates

Income statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Sales	8,848	9,455	9,926	10,556	11,284
Cost of goods sold	7,525	8,011	8,285	8,756	9,336
Gross profit	1,323	1,444	1,641	1,799	1,949
Gross margin (%)	15.0	15.3	16.5	17.0	17.3
SG&A expenses	964	1,087	1,217	1,299	1,392
Operating profit	359	357	424	501	557
Operating margin (%)	4.1	3.8	4.3	4.7	4.9
Non-operating gains (losses)	-93	-139	-67	-43	-39
Financial profit	56	51	19	22	37
Financial costs	138	145	87	71	71
Equity-method gains (losses)	-5	-3	4	5	5
Other	-6	-42	-3	0	-10
Pre-tax profit	265	218	356	458	518
Taxes	107	95	100	114	129
Effective tax rate (%)	40.4	43.6	28.2	25.0	25.0
Profit from continuing operations	158	123	256	343	388
Profit from discontinued operations	0	0	0	0	0
Net profit	158	123	256	343	388
Net margin (%)	1.8	1.3	2.6	3.3	3.4
Net profit (controlling interests)	130	100	240	323	365
Net profit (non-controlling interests)	28	23	15	21	23
EBITDA	694	718	753	782	797
EBITDA margin (%)	7.8	7.6	7.6	7.4	7.1
EPS (parent-based) (KRW)	2,767	2,130	5,118	6,869	7,777
EPS (consolidated) (KRW)	3,370	2,615	5,445	7,308	8,273
Adjusted EPS (KRW)*	2,767	2,130	5,118	6,869	7,777

Cash flow statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Cash flow from operations	435	721	548	579	572
Net profit	158	123	256	343	388
Non-cash profit and expenses	532	632	491	435	395
Depreciation	302	323	298	255	218
Amortization	33	38	32	27	22
Other	197	271	161	154	154
Changes in A/L from operating activities	-163	67	-34	-41	-52
Cash flow from investments	-397	-364	-153	-4	-4
Change in tangible assets	-307	-333	-150	0	0
Change in financial assets	12	28	-3	-4	-4
Other	-103	-59	-0	0	0
Cash flow from financing	-177	-96	-693	-56	-66
Change in debt	10	-129	-658	0	0
Change in equity	0	0	0	0	0
Dividends	-51	-52	-35	-56	-66
Other	-136	85	-0	0	0
Change in cash	-79	264	-287	522	505
Cash at beginning of year	615	536	800	513	1,035
Cash at end of year	536	800	513	1,035	1,540
Gross cash flow	690	755	747	778	783
Free cash flow	125	377	398	579	572

Note: *Excluding one-off items

**Fully diluted, excluding one-off items

***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

Balance sheet

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Current assets	3,677	3,719	3,578	4,291	5,021
Cash & equivalents	536	800	513	1,035	1,541
Accounts receivable	2,020	1,859	1,952	2,076	2,219
Inventories	838	804	845	898	960
Other current assets	283	256	269	282	301
Fixed assets	3,375	3,417	3,240	2,962	2,727
Investment assets	235	222	225	229	233
Tangible assets	2,410	2,560	2,412	2,157	1,940
Intangible assets	220	229	197	170	148
Other long-term assets	510	406	406	406	406
Total assets	7,052	7,137	6,818	7,253	7,747
Current liabilities	2,900	3,047	2,492	2,629	2,788
Accounts payable	1,449	1,399	1,468	1,562	1,669
Short-term debt	233	331	331	331	331
Other current liabilities	1,218	1,317	693	736	787
Long-term liabilities	1,479	1,214	1,222	1,233	1,246
Bonds & long-term debt	1,176	966	966	966	966
Other long-term liabilities	303	248	256	267	280
Total liabilities	4,379	4,261	3,714	3,862	4,033
Owners of parent equity	2,519	2,714	2,927	3,193	3,493
Capital stock	47	47	47	47	47
Capital surplus	603	603	603	603	603
Retained earnings	1,237	1,311	1,516	1,782	2,082
Other	631	752	760	760	760
Non-controlling interests' equity	154	162	177	198	221
Total equity	2,673	2,876	3,104	3,391	3,714
Net debt	1,585	1,218	846	323	-184

Financial ratios

Year-end Dec 31	2024	2025	2026E	2027E	2028E
Growth (%)					
Sales	5.4	6.9	5.0	6.3	6.9
Operating profit	28.5	-0.5	18.6	18.2	11.3
Net profit	2.4	-22.4	108.2	34.2	13.2
Adjusted EPS**	-4.2	-23.0	140.2	34.2	13.2
Per-share data (KRW)					
EPS (parent-based)	2,767	2,130	5,118	6,869	7,777
EPS (consolidated)	3,370	2,615	5,445	7,308	8,273
Adjusted EPS**	2,767	2,130	5,118	6,869	7,777
BVPS	53,635	57,793	62,333	68,002	74,379
DPS (common)	700	750	1,200	1,400	1,400
Valuations (x)					
P/E***	14.7	27.6	13.8	10.3	9.1
P/B***	0.8	1.0	1.1	1.0	0.9
EV/EBITDA	5.3	5.8	5.8	4.9	4.2
Ratios (%)					
ROE	5.5	3.8	8.5	10.5	10.9
ROA	2.4	1.7	3.7	4.9	5.2
ROIC	5.7	5.1	7.9	10.2	12.0
Payout ratio	25.3	35.2	23.4	20.4	18.0
Dividend yield (common)	1.7	1.3	1.7	2.0	2.0
Net debt to equity	59.3	42.4	27.3	9.5	-5.0
Interest coverage (x)	3.2	3.3	4.8	7.1	7.9

COMPANY UPDATE

2026. 5. 26

EV/Mobility Team

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Team Leader

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Research Associate

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▶ AT A GLANCE

BUY

Target price **KRW93,000** **22.7%**

Current price **KRW75,800**

Market cap KRW3.5t/USD2.3b

Shares (float) 46,448,520 (36.2%)

52-week high/low KRW75,800/KRW30,050

Avg daily trading value (60-day) KRW16.5b/
USD10.9m

▶ ONE-YEAR PERFORMANCE

	1M	6M	12M
SL Corporation (%)	18.4	110.0	149.3
Vs Kospi (%pts)	-3.1	3.1	-17.6

▶ KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	BUY	BUY	
Target price	93,000	93,000	0.0%
2026E EPS	8,459	8,459	0.0%
2027E EPS	9,382	9,283	1.1%

▶ SAMSUNG vs THE STREET

No of estimates	8
Target price	89,750
Recommendation	4.0

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL



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SL Corporation (005850)

NDR takeaways: Doubling down on robot orders

- Strong sales of the Palisade (HMC) and Telluride (Kia) helped SL Corp record an operating margin of 10.4% in 1Q. The ASP for lamps used in large SUVs is in the KRW0.4m-0.5m range, which is 60% higher than the price of lamps used in the Tucson. SL Corp also supplies lamps for Genesis models.
- SL Corp took orders of KRW477.3b over January-April, achieving 30% of its full-year target of KRW1.6t. It has secured contracts to supply lamps to GM, provide battery management systems (BMS) for four new Hyundai Motor and Kia EV models, and perform contract manufacturing for the PluD mobile robot (which is made by Hyundai Motor Group Robotic Lab).
- SL Corp provides the battery packs, lidar modules, and contract manufacturing for PluD, just as it does for MobED. Negotiations related to component orders for Atlas are currently underway.

WHAT'S THE STORY?

LED lamps and enhanced functions support margins: Hyundai Motor (HMC) and Kia have adopted LED lamps across all of their models. By adding daytime running lights, turn signals, multi-focus reflectors (MFR), and projection functions, lamp ASPs have risen 40-60% vs previous generation lamps.

- **ASP of headlamps used in second-generation Palisade and Telluride KRW430,000:** These are projection-type LED lamps (using a combination of reflectors and condenser lenses to focus the light forwards), incorporating daytime running lights and turn-signal functions. The ASP is 40% higher than that of headlamps used in the first-generation Palisade and Telluride models and 60% higher than that of the equivalent headlamp used in the Tucson.

With the addition of hybrid trims, the sales volume of the second-generation Palisade and Telluride is likely to rise 50% vs sales of the first-generation models.

(Continued on the next page)

SUMMARY FINANCIAL DATA

	2025	2026E	2027E	2028E
Revenue (KRWb)	5,240	5,712	6,226	6,661
Operating profit (KRWb)	407	461	519	560
Net profit (adj) (KRWb)	321	404	448	478
EPS (adj) (KRW)	6,692	8,459	9,382	10,021
EPS (adj) growth (% y-y)	-15.6	26.4	10.9	6.8
EBITDA margin (%)	10.9	10.9	10.9	10.8
ROE (%)	12.8	14.6	14.8	14.4
P/E (adj) (x)	6.4	9.0	8.1	7.6
P/B (x)	0.8	1.2	1.1	1.0
EV/EBITDA (x)	3.4	5.2	4.5	4.0
Dividend yield (%)	6.5	4.6	4.9	4.9

Source: Company data, Samsung Securities estimates

- **Highest sustainable profitability within value chain:** As SL Corp also supplies headlamps for all HMC Genesis models, its ASP is likely to continue rising.

Diversification of order portfolio: SL Corp took orders of KRW477.3b over January-April, achieving 30% of its full-year target.

- **Increased orders from GM:** SL Corp has won orders from GM to supply head lamps and rear lamps for the Enclave (a large SUV) as well as mirrors for the Camaro and CT5. GM is currently reorganizing its ICE vehicle lineup following the cancellation of its EV projects.
- **Lamps for HMC SDVs:** SL Corp has secured orders to provide head lamps and rear lamps for HMC's SDVs that will be sold in Korea and Europe, which SDVs are set to be launched in 2028.
- **BMS orders:** SL Corp should supply battery management systems (BMS) for the second-generation Casper EV (HMC; to hit the market in 2028) and three upcoming Kia EV models. Under Hyundai Motor Group's (HMG) dual-sourcing policy, both SL Corp and Hyundai Mobis provide BMS and side-body control modules to the group. SL Corp began to supply BMS for use in Kia's EV3 and EV4 in 2024. It also provides BMS for HMG Robotics Lab's mobile robots.

Robot sales to begin from Jul 2026: The company's robot-related sales portion should reach 3% in 2027 and 5% in 2028.

- **Involved in MobED and PluD production:** HMG Robotics Lab aims to produce 10,000-15,000 MobED mobile robots over the next three years. It will likely manufacture a similar amount of PluD (a modular, service-oriented mobile robot with customizable components) and should leverage much of MobED's existing supply chain. SL Corp supplies lidar modules and battery packs for use in the MobED, and serves as the contract manufacturer for MobED and PluD, customizing each unit (including modules mounted on top) to meet specific customer requirements. Mass-production of: 1) MobED should start in Aug 2026; and 2) PluD should commence in Mar 2027. Together, the two robots are expected to add KRW250b-400b to SL Corp's annual sales (or 4.5-7% of its 2026 sales).
- **Participating in Atlas component bidding:** SL Corp is already supplying the leg modules for quadruped robot Spot and the signal lamps for Stretch. Sales related to Spot should begin in Jul 2026. Having a production base in North America and sufficient financial resources needed to develop new technologies, it is well positioned to win additional orders.

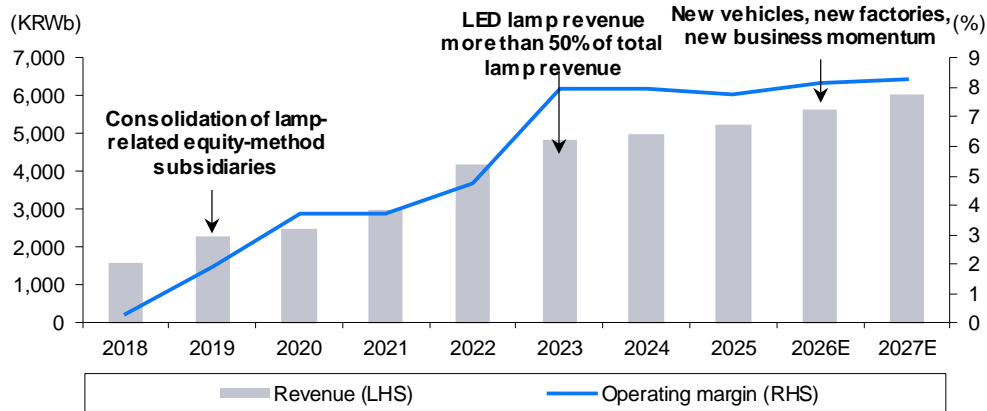
2026 earnings momentum: Benefiting from HMC and Kia's model launches and plant startups, SL Corp's sales are likely to grow at a CAGR of 8% through 2028.

- **2026 outlook:** We expect SL Corp to post 2026 sales of KRW5.7t (up 9%) and an operating profit of KRW460.8b (up 13.2%), for an operating margin of 8.1%. Sales should pick up as HMG launches new models, HMG's global plant utilization rises, and the robotics market expands. Higher lamp ASPs and a recovery of tariff costs should further improve its profitability.
- **New-car momentum from HMC and Kia in 2026:** SL Corp's orders began to surge in 2023, and the impact of this on earnings should be seen from 2026. The firm supplies headlamps and rear lamps for the Ioniq 9; headlamps for the EV4; and headlamps and rear lamps for the Kia Telluride.

For the Palisade Hybrid that is assembled at Hyundai Motor Group Metaplant America (HMGMA), it supplies headlamps, grille lamps, and rear lamps.

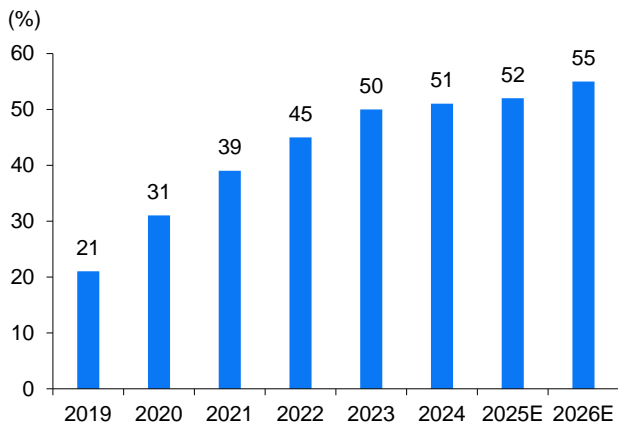
- **HMGMA ramping up utilization; HMC's plant in India comes online:** We see several catalysts that should drive SL Corp's sales higher: 1) HMGMA assembles HMC and Kia hybrids, and it is planning to ramp up output from 60,000 units in 2025 to 200,000 units in 2026; 2) HMC's third plant in India came online in Oct 2025 (capacity: 250,000 units); and 3) a Kia PBV plant came online in Jun 2025 (capacity: 150,000 units). SL Corp supplies all of the lamps for HMG's vehicles in North America and India. It should also provide headlamps, BMS, and side-body control modules for vehicles produced at Kia's PBV plant.
- **Robot sales momentum to offset weak results in 2H:** SL Corp has repeatedly seen strong results in 1H followed by sluggish numbers in 2H. In 2H26, however, such weakness should be counterbalanced by sales related to: 1) Spot (from July); and 2) MobED (from August).

SL Corp: Sales and operating margin



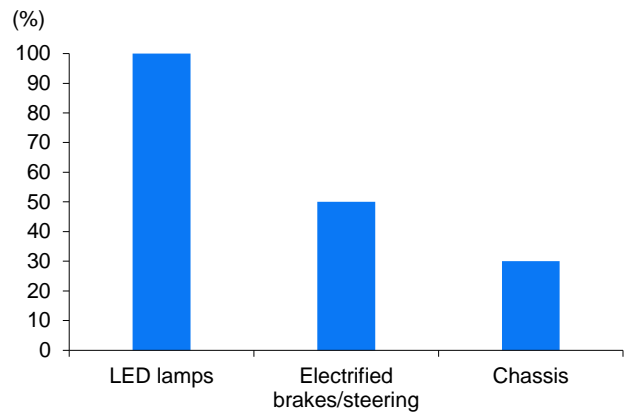
Source: Company data, Samsung Securities

SL Corp: LED lamp sales as portion of total lamp sales



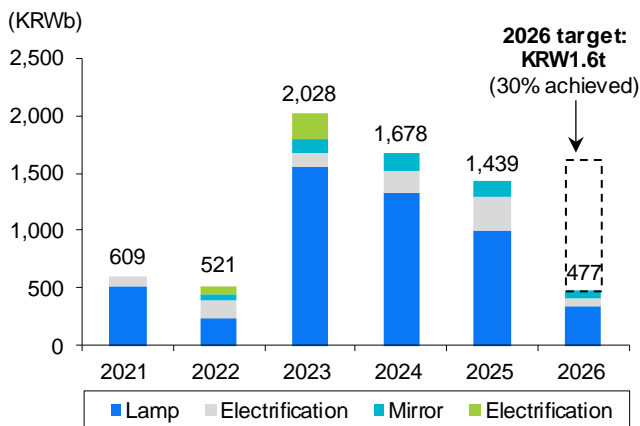
Source: Company data, Samsung Securities

SL Corp: Changes in ASPs for main products



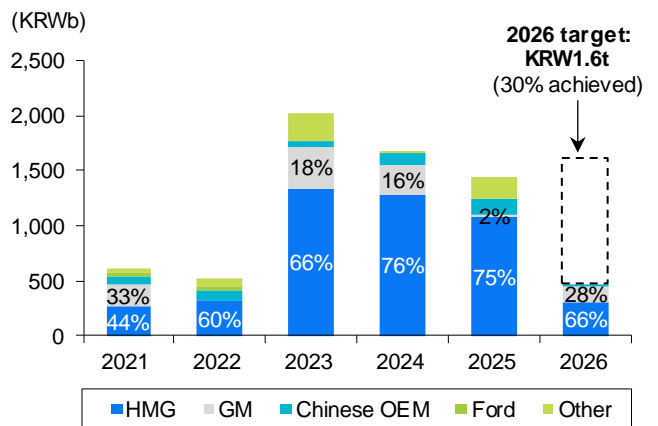
Source: Company data, Samsung Securities estimates

SL Corp: Orders taken, by product



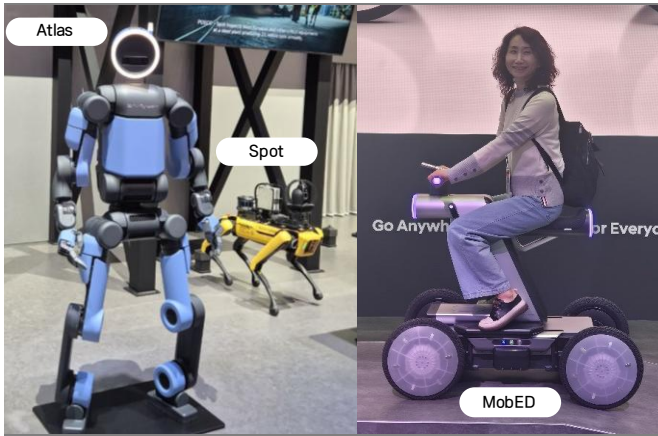
Note: 2026 figures cover Jan-Apr
Source: Company data, Samsung Securities

SL Corp: Orders taken, by client



Note: 2026 figures cover Jan-Apr
Source: Company data, Samsung Securities

Atlas/Spot/MobED



Source: Samsung Securities

SL Corp: HMG's robotics business's core value chain

Company	Product	Supplied by SL Corp
Robotics LAB	MobED	Lidar module
		Battery pack
		Mobile robot production
Boston Dynamics	Stretch	Direction indicator
	Spot	Leg module
	Atlas	Bidding

Source: Samsung Securities

Robotics LAB: PnD (Plug & Drive)



Source: Company data

Robotics LAB: PnD (Plug & Drive)



Source: Company data

SL Corp: Results and forecasts

(KRWb)	1Q25	2Q25	3Q25	4Q25	1Q26	2Q26E	3Q26E	4Q26E	2024	2025	2026E	2027E
KRW/USD (average)	1,453	1,401	1,387	1,452	1,467	1,450	1,430	1,420	1,365	1,423	1,442	1,390
Revenue	1,234	1,295	1,303	1,409	1,388	1,429	1,402	1,492	4,973	5,240	5,712	6,226
Chg (% y-y)	-1.0	-0.3	9.3	13.9	12.5	10.4	7.7	5.9	2.8	5.4	9.0	9.0
Lamp	943	1,043	1,080	1,117	1,088	1,113	1,124	1,150	3,961	4,183	4,475	4,744
Chassis	173	134	163	158	178	161	175	177	543	628	691	726
Other	118	117	60	112	121	156	104	165	470	407	545	756
Gross profit	192	180	150	211	224	215	187	180	689	733	807	897
Operating profit	119	106	68	114	144	137	98	82	395	407	461	519
Chg (% y-y)	-14.1	-28.3	0.9	178.0	20.5	28.9	43.9	-27.7	2.3	3.0	13.2	12.7
Equity method profit	3.8	5.0	2.6	6.3	5.8	6.0	3.4	3.4	16.8	17.7	18.6	18.8
Before tax profit	137	92	94	124	181	141	104	112	487	446	538	597
Net profit	104	70	70	77	136	105	78	84	382	321	404	448
Chg (% y-y)	-14.3	-43.3	21.3	-3.4	30.6	50.2	11.8	9.8	9.4	-16.0	25.8	10.9
Controlling profit	100	69	68	73	132	103	76	82	368	311	393	436
Chg (% y-y)	-14.2	-41.7	21.6	-4.6	32.3	48.3	11.5	11.6	9.8	-15.6	26.4	10.9
Margins (%)												
Gross profit	15.6	13.9	11.5	15.0	16.2	15.0	13.3	12.1	13.8	14.0	14.1	14.4
Operating profit	9.7	8.2	5.2	8.1	10.4	9.6	7.0	5.5	7.9	7.8	8.1	8.3
Before tax profit	11.1	7.1	7.2	8.8	13.1	9.8	7.4	7.5	9.8	8.5	9.4	9.6
Net profit	8.4	5.4	5.4	5.4	9.8	7.4	5.6	5.6	7.7	6.1	7.1	7.2

Source: Company data, Samsung Securities estimates

Income statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Sales	4,973	5,240	5,712	6,226	6,661
Cost of goods sold	4,285	4,507	4,905	5,329	5,692
Gross profit	689	733	807	897	969
Gross margin (%)	13.8	14.0	14.1	14.4	14.5
SG&A expenses	294	326	346	377	409
Operating profit	395	407	461	519	560
Operating margin (%)	7.9	7.8	8.1	8.3	8.4
Non-operating gains (losses)	92	39	78	78	78
Financial profit	33	34	37	44	53
Financial costs	21	15	13	12	12
Equity-method gains (losses)	17	18	19	19	19
Other	63	1	34	27	18
Pre-tax profit	487	446	538	597	638
Taxes	105	125	135	149	160
Effective tax rate (%)	21.6	28.0	25.0	25.0	25.0
Profit from continuing operations	382	321	404	448	478
Profit from discontinued operations	0	0	0	0	0
Net profit	382	321	404	448	478
Net margin (%)	7.7	6.1	7.1	7.2	7.2
Net profit (controlling interests)	368	311	393	436	465
Net profit (non-controlling interests)	14	10	11	12	13
EBITDA	559	570	623	679	717
EBITDA margin (%)	11.2	10.9	10.9	10.9	10.8
EPS (parent-based) (KRW)	7,930	6,692	8,459	9,382	10,021
EPS (consolidated) (KRW)	8,223	6,906	8,690	9,637	10,294
Adjusted EPS (KRW)*	7,930	6,692	8,459	9,382	10,021

Cash flow statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Cash flow from operations	482	509	482	517	556
Net profit	382	321	404	448	478
Non-cash profit and expenses	300	388	230	234	233
Depreciation	153	151	151	151	151
Amortization	11	12	11	9	7
Other	136	225	67	74	76
Changes in A/L from operating activities	-122	-157	-65	-71	-60
Cash flow from investments	-334	-296	-160	-150	-150
Change in tangible assets	-214	-181	-150	-150	-150
Change in financial assets	0	0	0	0	0
Other	-120	-115	-10	0	0
Cash flow from financing	-127	-81	-166	-159	-172
Change in debt	-39	-16	-38	0	0
Change in equity	0	0	0	0	0
Dividends	-46	-60	-128	-159	-173
Other	-41	-5	0	0	0
Change in cash	35	129	156	212	239
Cash at beginning of year	314	348	478	634	845
Cash at end of year	348	478	634	845	1,085
Gross cash flow	681	708	633	681	711
Free cash flow	244	320	332	367	406

Note: *Excluding one-off items

**Fully diluted, excluding one-off items

***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

Balance sheet

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Current assets	2,346	2,634	2,948	3,332	3,718
Cash & equivalents	348	478	634	845	1,085
Accounts receivable	960	984	1,072	1,169	1,250
Inventories	416	436	475	518	554
Other current assets	622	737	767	801	829
Fixed assets	1,353	1,363	1,376	1,382	1,388
Investment assets	233	245	260	276	289
Tangible assets	861	871	870	869	869
Intangible assets	37	41	39	30	24
Other long-term assets	221	207	207	207	207
Total assets	3,699	3,997	4,324	4,715	5,106
Current liabilities	1,142	1,170	1,210	1,295	1,368
Accounts payable	511	560	610	665	712
Short-term debt	275	261	261	261	261
Other current liabilities	357	349	339	369	395
Long-term liabilities	159	175	190	207	221
Bonds & long-term debt	0	0	0	0	0
Other long-term liabilities	159	175	190	207	221
Total liabilities	1,302	1,345	1,400	1,502	1,589
Owners of parent equity	2,300	2,553	2,814	3,090	3,383
Capital stock	23	23	23	23	23
Capital surplus	460	460	460	460	460
Retained earnings	1,783	2,045	2,310	2,587	2,880
Other	34	25	20	20	20
Non-controlling interests' equity	97	99	110	122	134
Total equity	2,397	2,652	2,923	3,212	3,518
Net debt	-24	-170	-364	-575	-815

Financial ratios

Year-end Dec 31	2024	2025	2026E	2027E	2028E
Growth (%)					
Sales	2.8	5.4	9.0	9.0	7.0
Operating profit	2.3	3.0	13.2	12.7	7.8
Net profit	9.4	-16.0	25.8	10.9	6.8
Adjusted EPS**	9.8	-15.6	26.4	10.9	6.8
Per-share data (KRW)					
EPS (parent-based)	7,930	6,692	8,459	9,382	10,021
EPS (consolidated)	8,223	6,906	8,690	9,637	10,294
Adjusted EPS**	7,930	6,692	8,459	9,382	10,021
BVPS	49,934	55,423	61,092	67,103	73,460
DPS (common)	1,200	2,770	3,450	3,750	3,750
Valuations (x)					
P/E***	3.8	6.4	9.0	8.1	7.6
P/B***	0.6	0.8	1.2	1.1	1.0
EV/EBITDA	2.6	3.4	5.2	4.5	4.0
Ratios (%)					
ROE	17.4	12.8	14.6	14.8	14.4
ROA	11.0	8.3	9.7	9.9	9.7
ROIC	17.4	15.2	17.2	18.7	19.4
Payout ratio	15.0	41.0	40.4	39.6	37.1
Dividend yield (common)	4.0	6.5	4.6	4.9	4.9
Net debt to equity	-1.0	-6.4	-12.5	-17.9	-23.2
Interest coverage (x)	21.7	29.3	36.3	43.8	47.2

COMPANY UPDATE

2026. 6. 18

EV/Mobility Team

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Hyunji Kim

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▶ AT A GLANCE

BUY

Target price **KRW45,000** 46.6%

Current price **KRW30,700**

Market cap KRW814.79b/USD539.02m

Shares (float) 26,540,272 (43.5%)

52-week high/low KRW39,450/KRW26,950

Avg daily trading value (60-day) KRW2.7b/
USD1.8m

▶ ONE-YEAR PERFORMANCE

	1M	6M	12M
SNT Motiv (%)	-7.4	-9.0	-5.1
Vs Kospi (%pts)	-20.5	-58.3	-68.0

▶ KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	BUY	BUY	
Target price	45,000	45,000	0.0%
2026E EPS	3,948	3,948	0.0%
2027E EPS	4,392	4,392	0.0%

▶ SAMSUNG vs THE STREET

No of estimates	6
Target price	45,500
Recommendation	4.0

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL



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SNT Motiv (064960)

Earnings, momentum, and 2H shareholder returns

- SNT Motiv has bought 100% of SNT Robotics from SNT Holdings, along with a 20.5% stake in SMEC. It is also renovating a component plant in Louisiana, which it acquired in Sep 2025.
- SNT Motiv is now positioned as a hub for SNT Group's robotics businesses. Hyundai Motor Group's Robotics Lab operations and production of the Atlas open up a significant opportunity for Korean auto parts suppliers to integrate their businesses into the robotics value chain.
- We foresee visible progress in defense contracts and robotics in 2H26.

WHAT'S THE STORY?

Now a hub for group's robotics business: SNT Group's robotics-related subsidiaries are being brought together under SNT Motiv.

- **Acquires SMEC shares:** SNT Motiv has completed its acquisition of SMEC shares (disclosed Mar 23), acquiring a 13.5% stake from SNT Holdings and a 7% stake from Group Chairman Choi Pyeong-gyu, for a total of KRW60.5b.

SMEC is Korea's third-largest machine tool manufacturer and holds a 34.8% stake in what was Hyundai Wia's machine tool business. In addition to its machine tool technology, SMEC also possesses collaborative and industrial robot technologies. SNT Motiv may acquire more SMEC shares over time, but nothing has been decided or announced.

(Continued on the next page)

SUMMARY FINANCIAL DATA

(KRWb)	2025	2026E	2027E	2028E
Revenue	1,006	1,079	1,196	1,308
Operating profit	103	114	132	142
Net profit (adj)	70	105	116	123
EPS (adj) (KRW)	2,623	3,948	4,392	4,655
EPS (adj) growth (% y-y)	-33.3	50.5	11.3	6.0
EBITDA margin (%)	13.2	12.9	12.8	12.2
ROE (%)	7.0	10.0	10.5	10.5
P/E (adj) (x)	13.2	7.8	7.0	6.6
P/B (x)	0.8	0.7	0.6	0.6
EV/EBITDA (x)	3.5	2.3	1.8	1.5
Dividend yield (%)	4.9	7.2	7.8	7.8

Source: Company data, Samsung Securities estimates

- **Acquires 100% of SNT Robotics from holding company (Mar 23):** SNT Motiv has regained control of the robotics business, a unit that had previously been transferred to the holding company. The transaction involved a cash payment of KRW30b for full ownership.
- **To bring US plant online in 2026:** In Sep 2025, SNT Motiv acquired a component plant in Louisiana, which it is now renovating. The plant will house equipment that was previously installed at the firm's Busan plant. The US plant is set to begin operations this year. In response to US tariffs, the plant will initially produce water pumps and gear motors—products that were previously exported directly from Korea.
- **Seeking a place in HMG's robotics value chain:** SNT Motiv has set its sights on supplying actuator motors and robotic modules to Hyundai Motor Group (HMG). Currently, it operates as a tier-2 supplier, providing steering system motors through Hyundai Mobis. It also supplies starter motors for Hyundai Motor (HMC)/Kia hybrid vehicles, and it is set to supply electric water pumps for Genesis models from 2H.

Major opportunity opening up for Korean suppliers: Korean auto parts suppliers now have an opportunity to enter the Korean and US robotics value chains.

- **HMG looking to center robotics value chain on Korean firms:** HMG's robotics business has two pillars: Boston Dynamics and HMG Robotics Lab. While HMG leads the production of the Atlas, HMG Robotics Lab plans to expand its lineup to 14 models in the coming years. This should create a significant opportunity for Korean auto parts suppliers to enter the robotics value chain.
- **HMG—a first mover in robotics:** Korean automakers were late to enter the auto industry, and despite rapidly catching up with their global rivals (in sales volume), they have always traded at a discount. But in robotics, HMC has emerged as an early mover, and its strong execution has sparked an ongoing rerating. Suppliers who secure early positions in this value chain can expect to rerate as semiconductor materials, parts, or equipment companies.
- **Suppliers following HMG into US have real shot at winning more clients:** The US is pushing hard to rebuild a domestic manufacturing ecosystem, so suppliers with US production facilities should hold a decisive edge in securing contracts with Boston Dynamics. A proven track record with Boston Dynamics would be a powerful credential to unlocking future opportunities with other robotics firms such as Tesla, Figure AI, and Agility.

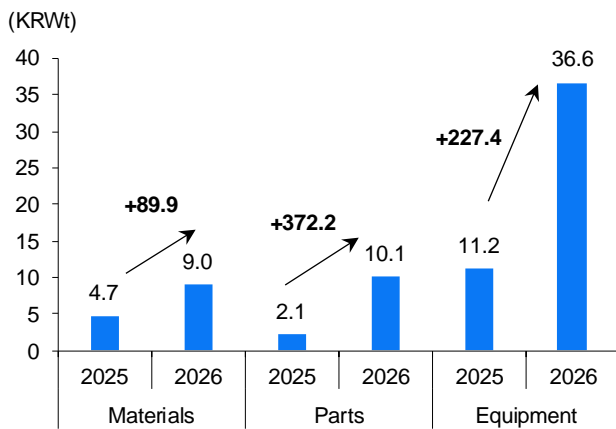
2Q preview—in line with consensus: We expect SNT Motiv to post 2Q results showing sales up 25% q-q and 4.9% y-y to KRW270b and a operating profit up 37.5% q-q and 10.9% y-y to KRW29.5b, for an operating margin of 10.9%. The launch of Kia's second-generation Seltos is likely to drive SNT Motiv's sales growth. FnGuide consensus has 2Q sales reaching KRW282.4b and operating profit KRW30.9b, for an operating margin of 10.9%.

- **Oil pump sales to expand:** From 2H, SNT Motiv should supply electronic oil pumps to HMC's Genesis brand, adding an estimated KRW20b to annual sales.
- **Defense sales to grow 5% y-y to KRW160b in 2026:** Overseas orders totaling KRW300b, previously delayed due to budget constraints and instability in the Middle East, are now expected to be secured in 2H.

Net cash position and auto sector's highest dividend payout ratio

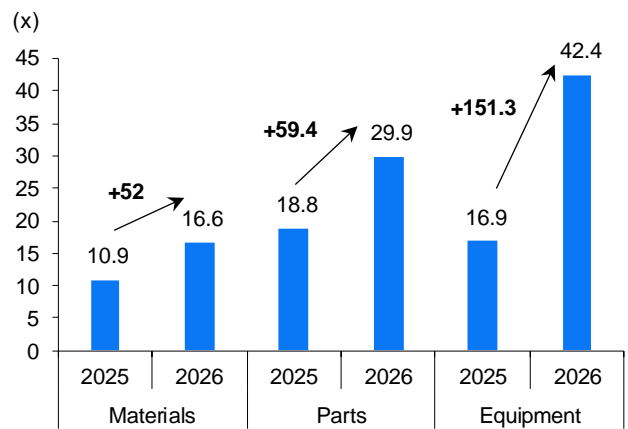
- **Quarterly dividend payments start in 2025:** SNT Motiv paid a 2025 DPS of KRW1,700 (up 81% y-y) for a dividend payout ratio of 58.2%. We expect the firm to pay a 2026 DPS of KRW2,200, with a dividend payout ratio of 50% and a dividend yield of 7.5%.
- **10.2% of outstanding shares held in treasury:** SNT Motiv is 40.9% owned by SNT Holdings and 1% by a scholarship foundation. The Commercial Code requires cancellation of all treasury shares, and we believe SNT Motiv will be fully compliant with this by Sep 2027.
- **Solid financials:** At end-1Q26, SNT Motiv had net cash of KRW402.5b (equating to 50.7% of its market cap) and a debt ratio of 23.7%. Its annual free cash flow is in the KRW80b-100b range. These solid financials bolster the firm's payout ratio.

Semiconductor MPE* firms: 1-year market cap change



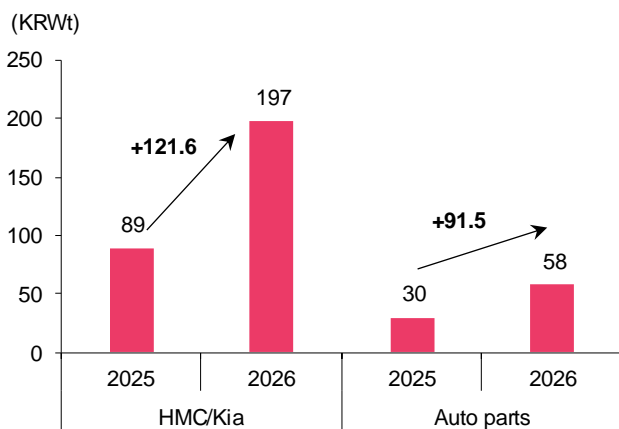
Note: *Materials = Soulbrain, Dongjin Semichem, and Hansol Chemical;
*Parts = ISC, TLB, and Simmtech;
*Equipment = Hanmi Semiconductor, HPSP, and PSK
Source: QuantiWise, Samsung Securities

Semiconductor MPE* firms: 1-year fwd P/E multiple change



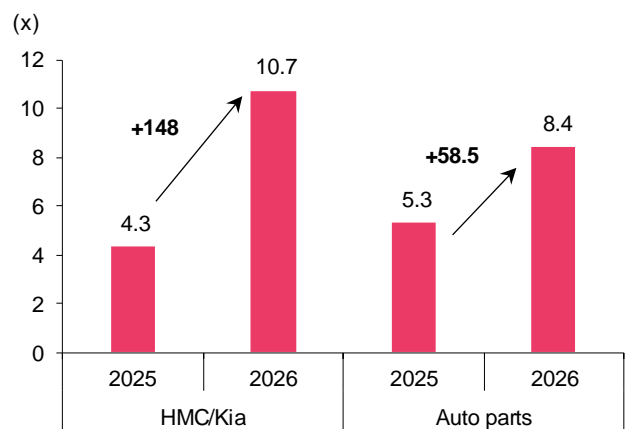
Note: *Materials = Soulbrain, Dongjin Semichem, and Hansol Chemical;
*Parts = ISC, TLB, and Simmtech;
*Equipment = Hanmi Semiconductor, HPSP, and PSK
Source: QuantiWise, Samsung Securities

Mobility firms: 1-year market cap change



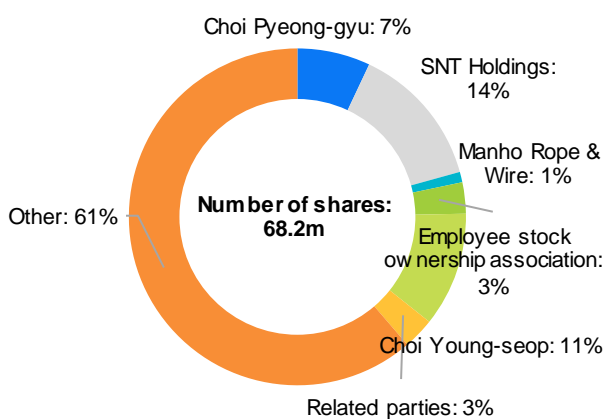
Source: QuantiWise, Samsung Securities

Mobility firms: 1-year fwd P/E multiple change



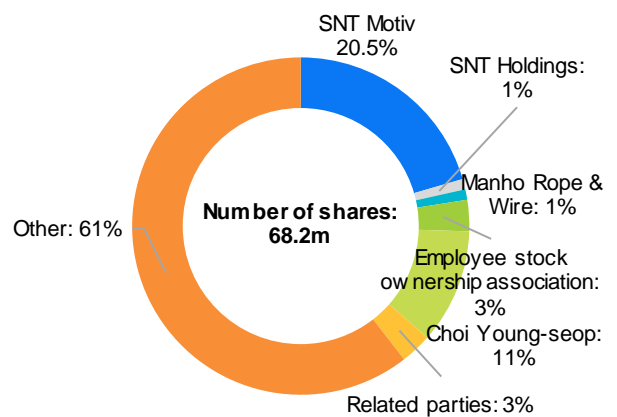
Source: QuantiWise, Samsung Securities

SMEC: Shareholders before SNT Motiv's acquisition



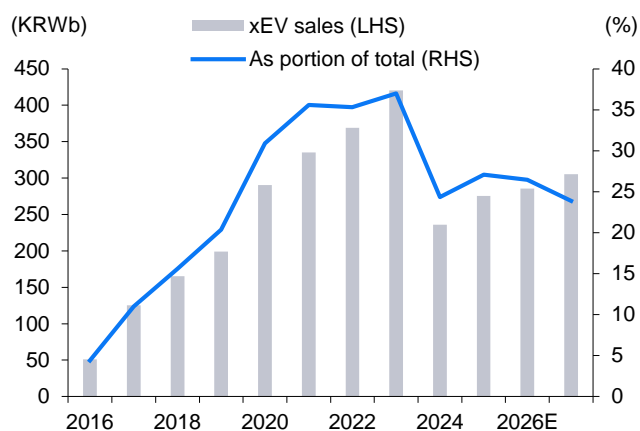
Source: Company data, Samsung Securities

SMEC: Shareholders after SNT Motiv's acquisition



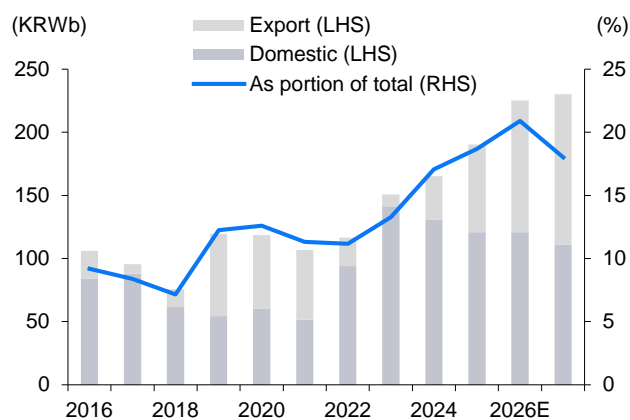
Source: Company data, Samsung Securities

xEV-related sales: Absolute and as portion of total sales



Source: Company data, Samsung Securities

Defense sales: Absolute and as portion of total sales



Source: Company data, Samsung Securities







SNT Motiv: Results and forecasts

(KRWb)	1Q25	2Q25	3Q25	4Q25	1Q26E	2Q26E	3Q26E	4Q26E	2024	2025	2026E	2027E
KRW/USD (avg)	1,453	1,401	1,387	1,452	1,467	1,450	1,430	1,420	1,365	1,423	1,442	1,390
Revenue	226.2	257.5	231.1	291.6	215.6	269.9	274.8	318.6	968.9	1,006.4	1,078.9	1,195.5
Chg (% y-y)	1.9	7.2	4.6	2.0	(4.7)	4.8	18.9	9.3	(14.7)	3.9	7.2	10.8
Auto parts	199.2	203.6	191.5	199.1	186.8	221.5	206.4	239.2	731.0	793.4	853.9	975.5
Chg (% y-y)	11.2	9.5	13.3	1.1	(6.2)	8.8	7.8	20.1	(19.4)	8.5	7.6	14.2
Motors	117.8	120.4	116.1	107.5	106.5	137.6	127.9	159.9	433.1	461.8	531.8	631.8
Chg (% y-y)	11.2	8.5	14.3	(6.2)	(9.6)	14.3	10.2	48.7	(3.7)	6.6	15.2	18.8
Other*	28.2	58.8	42.1	96.1	30.6	51.4	73.4	84.6	247.8	225.3	240.0	270.0
Internal adjustment	(1.2)	(4.8)	(2.6)	(3.6)	(1.8)	(3.0)	(5.0)	(5.2)	(9.9)	(12.3)	(15.0)	(50.0)
Gross profit	38.4	47.5	40.9	62.7	36.4	42.2	47.7	53.1	159.4	189.5	179.5	204.7
Operating profit	23.0	26.6	22.0	30.9	21.5	29.5	30.4	33.0	98.1	102.6	113.7	132.4
Chg (% y-y)	4.6	6.2	(0.1)	6.5	(6.4)	8.1	38.0	6.8	(15.9)	4.5	10.9	16.4
Auto parts	20.8	20.8	17.2	18.0	17.7	23.3	20.6	23.7	62.9	76.7	85.4	97.6
Other*	2.2	5.9	4.8	12.9	3.8	5.5	9.7	9.3	35.3	25.8	28.3	34.8
Pre-tax profit	27.8	18.8	28.8	18.2	33.2	30.4	34.4	41.5	131.7	93.6	139.5	155.2
Net profit	21.3	14.2	21.3	12.8	24.9	22.8	25.8	31.1	104.3	69.5	104.6	116.4
Controlling profit	21.3	14.2	21.3	12.9	24.9	22.8	25.8	31.1	104.3	69.6	104.6	116.4
Margins (%)												
Gross profit	17.0	18.5	17.7	21.5	16.9	15.6	17.4	16.7	16.5	18.8	16.6	17.1
Operating profit	10.2	10.3	9.5	10.6	10.0	10.9	11.0	10.4	10.1	10.2	10.5	11.1
Net profit	9.4	5.5	9.2	4.4	11.5	8.5	9.4	9.8	10.8	6.9	9.7	9.7
Controlling profit	9.4	5.5	9.2	4.4	11.5	8.5	9.4	9.8	10.8	6.9	9.7	9.7

Note: *Defense and semiconductor-manufacturing components

Source: Company data, Samsung Securities estimates

SNT Motiv: Key products

Product	Image	Description
e-Motor pump		A device that supplies oil to the vehicle's transmission. By replacing the traditional engine-driven oil supply with an electric motor-driven system, it enhances engine efficiency while precisely controlling the oil supply.
Drive unit		A core component of electric vehicles, consisting of a drive motor and a reducer. It generates torque using electric power from the battery and transmits the appropriate torque to the axle via the reducer to match the vehicle's driving conditions.
HSG motor		A power unit capable of functioning both as an electric motor and a generator. This technology is designed to replace conventional separate starter motors and alternators in vehicles.
EPS motor		A system that assists the driver's steering effort by using an electric motor for improved control and driving comfort.
Traction motor		A critical component in hybrid and electric vehicles that either supplements or replaces the internal combustion engine. Given its direct impact on vehicle performance and stability, it must meet stringent regulatory and performance standards.
Transfer case actuator		A key component in all-wheel-drive (AWD) systems, responsible for distributing engine power to all axles and wheels to ensure optimal traction and drivetrain efficiency.

Source: Company data, Samsung Securities

Income statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Sales	969	1,006	1,079	1,196	1,308
Cost of goods sold	809	817	899	991	1,087
Gross profit	159	189	179	205	220
Gross margin (%)	16.5	18.8	16.6	17.1	16.9
SG&A expenses	61	87	66	72	79
Operating profit	98	103	114	132	142
Operating margin (%)	10.1	10.2	10.5	11.1	10.8
Non-operating gains (losses)	34	-9	26	23	23
Financial profit	43	25	14	16	17
Financial costs	8	14	-11	-7	-6
Equity-method gains (losses)	0	0	0	0	0
Other	-2	-19	0	0	-0
Pre-tax profit	132	94	140	155	165
Taxes	27	24	35	39	41
Effective tax rate (%)	20.7	25.8	25.0	25.0	25.0
Profit from continuing operations	104	70	105	116	123
Profit from discontinued operations	0	0	0	0	0
Net profit	104	70	105	116	123
Net margin (%)	10.8	6.9	9.7	9.7	9.4
Net profit (controlling interests)	104	70	105	117	124
Net profit (non-controlling interests)	0	-0	-0	-0	-0
EBITDA	127	133	139	153	159
EBITDA margin (%)	13.1	13.2	12.9	12.8	12.2
EPS (parent-based) (KRW)	3,932	2,623	3,948	4,392	4,655
EPS (consolidated) (KRW)	3,932	2,619	3,941	4,384	4,647
Adjusted EPS (KRW)*	3,932	2,623	3,948	4,392	4,655

Cash flow statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Cash flow from operations	130	74	121	124	128
Net profit	104	70	105	116	123
Non-cash profit and expenses	42	44	46	44	42
Depreciation	27	28	24	20	17
Amortization	2	2	1	1	1
Other	13	14	21	23	24
Changes in A/L from operating activities	-8	-24	-8	-13	-13
Cash flow from investments	-41	-20	-46	-56	-55
Change in tangible assets	-48	-84	-30	-30	-30
Change in financial assets	-26	38	-16	-26	-25
Other	33	26	0	0	0
Cash flow from financing	-74	-45	-41	-52	-57
Change in debt	-0	-0	0	0	0
Change in equity	0	-0	0	0	0
Dividends	-20	-44	-41	-52	-57
Other	-54	-0	-0	-0	-0
Change in cash	24	10	34	16	16
Cash at beginning of year	200	223	233	267	283
Cash at end of year	223	233	267	283	299
Gross cash flow	147	114	150	160	165
Free cash flow	81	-10	91	94	98

Note: *Excluding one-off items;

**Fully diluted, excluding one-off items;

***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

Balance sheet

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Current assets	846	829	906	991	1,073
Cash & equivalents	223	233	267	283	299
Accounts receivable	170	185	199	220	241
Inventories	158	168	180	199	218
Other current assets	295	242	260	288	315
Fixed assets	395	451	456	465	477
Investment assets	7	5	5	5	5
Tangible assets	382	437	444	454	467
Intangible assets	6	5	3	2	2
Other long-term assets	1	3	3	3	3
Total assets	1,242	1,279	1,361	1,455	1,551
Current liabilities	216	218	234	259	284
Accounts payable	131	143	153	170	186
Short-term debt	0	0	0	0	0
Other current liabilities	86	75	81	90	98
Long-term liabilities	41	42	45	49	54
Bonds & long-term debt	0	0	0	0	0
Other long-term liabilities	41	42	45	49	54
Total liabilities	257	260	279	309	338
Owners of parent equity	985	1,014	1,077	1,141	1,208
Capital stock	73	133	133	133	133
Capital surplus	73	13	13	13	13
Retained earnings	923	951	1,015	1,079	1,146
Other	-85	-83	-84	-84	-84
Non-controlling interests' equity	0	6	5	5	5
Total equity	985	1,019	1,083	1,147	1,213
Net debt	-482	-455	-505	-546	-587

Financial ratios

Year-end Dec 31	2024	2025	2026E	2027E	2028E
Growth (%)					
Sales	-14.7	3.9	7.2	10.8	9.4
Operating profit	-15.9	4.5	10.9	16.4	7.0
Net profit	20.0	-33.4	50.5	11.3	6.0
Adjusted EPS**	20.0	-33.3	50.5	11.3	6.0
Per-share data (KRW)					
EPS (parent-based)	3,932	2,623	3,948	4,392	4,655
EPS (consolidated)	3,932	2,619	3,941	4,384	4,647
Adjusted EPS**	3,932	2,623	3,948	4,392	4,655
BVPS	45,531	42,534	45,195	47,885	50,669
DPS (common)	937	1,700	2,200	2,400	2,400
Valuations (x)					
P/E***	5.6	13.2	7.8	7.0	6.6
P/B***	0.5	0.8	0.7	0.6	0.6
EV/EBITDA	0.8	3.5	2.3	1.8	1.5
Ratios (%)					
ROE	10.8	7.0	10.0	10.5	10.5
ROA	8.5	5.5	7.9	8.3	8.2
ROIC	14.7	13.3	14.0	15.7	16.1
Payout ratio	19.6	58.2	50.0	49.1	46.3
Dividend yield (common)	4.2	4.9	7.2	7.8	7.8
Net debt to equity	-49.0	-44.6	-46.6	-47.6	-48.4
Interest coverage (x)	12,044.7	26,168.1	38,361.4	42,848.1	43,722.2

COMPANY UPDATE

2026. 6. 18

EV/Mobility Team

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▶ AT A GLANCE

BUY

Target price **KRW16,000** 20.2%

Current price **KRW13,310**

Market cap KRW464.79b/USD307.12m

Shares (float) 34,920,410 (49.1%)

52-week high/low KRW15,550/KRW7,550

Avg daily trading value (60-day) KRW9.5b/USD6.3m

▶ ONE-YEAR PERFORMANCE

	1M	6M	12M
Hwashin (%)	1.1	53.3	55.5
Vs Kospi (%pts)	-14.5	-29.8	-48.2

▶ KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	BUY	BUY	
Target price	16,000	16,000	0.0%
2026E EPS	2,516	2,516	0.0%
2027E EPS	2,773	2,773	0.0%

▶ SAMSUNG vs THE STREET

No of estimates	1
Target price	16,000
Recommendation	4.0

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL



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Hwashin (010690)

Second pivot offers greater opportunities

- Leveraging its chassis technology, Hwashin has successfully expanded into the battery case business and is now well positioned to win orders for robotic body modules.
- Whereas it was a latecomer to battery cases, Hwashin may enter the robot body module market early, which could lead to a high growth premium.
- Trading at just 4.1x 2026 P/E, Hwashin is the most undervalued company in the mobility value chain.

WHAT'S THE STORY?

Valuation discount reflects weak 1Q results: Trading at a mere 4.1x 2026 P/E, Hwashin is viewed by many as an auto parts supplier with no discernible growth prospects.

- **Earnings to improve from 2Q:** Depreciation cost pressures from Hwashin's new plant in the US should ease as Kia's Sportage Hybrid enters production at Hyundai Motor Group Metaplant America. Additionally, Hwashin's battery case sales should grow alongside Kia's EV sales volume.
- **First pivot to battery case business holding strong:** Hwashin started generating sales from battery cases in 3Q24. Its battery case sales rose from KRW20b in 2024 (1.2% of its total sales) to KRW58b in 2025 (3.3%) and are projected to reach KRW90b in 2026 (4%).
- **HMC/Kia diversify EV component sourcing:** In 2022, HMC and Kia together recorded more than 500,000 EV sales, leading them to broaden their supplier base for EV components.

(Continued on the next page)

SUMMARY FINANCIAL DATA

(KRWb)	2025	2026E	2027E	2028E
Revenue	1,962	2,116	2,356	2,584
Operating profit	102	96	127	138
Net profit (adj)	67	88	97	108
EPS (adj) (KRW)	1,910	2,516	2,773	3,099
EPS (adj) growth (% y-y)	24.5	31.7	10.2	11.7
EBITDA margin (%)	8.7	8.0	8.6	8.4
ROE (%)	12.3	14.4	13.9	13.8
P/E (adj) (x)	4.3	5.3	4.8	4.3
P/B (x)	0.5	0.7	0.6	0.6
EV/EBITDA (x)	4.6	5.6	4.5	4.0
Dividend yield (%)	2.0	2.3	2.6	2.6

Source: Company data, Samsung Securities estimates

- **Battery configuration design changes create opportunities for chassis and body part suppliers:** To reduce battery pack costs and improve energy density, battery designs are shifting towards cell-to-pack and cell-to-body configurations. These changes have opened up opportunities for body and chassis suppliers, firms that are familiar with the overall vehicle structure and have advanced materials technology. Donghee Auto, Hwashin, Sungwoo Hitech, and Webasto are vying for battery pack and case orders. The ASP of battery cases is estimated at KR₩0.8m-1.2m.
- **Battery case sales on high growth trajectory:** Hwashin supplies battery cases for use in HMC's Casper EV and Kia's EV4 and PV5. It is also set to supply battery cases for HMC's GV90 from Sep 2026.

Potential entry into robot body module business: Chassis manufacturers excel in designing structures that absorb shocks and vibrations, and they have expertise in handling a wide range of materials.

- **Foundational technologies and spare capacity mean new business opportunities:** Hwashin is a chassis maker and meets 57% of Hyundai Motor Group's chassis needs. The chassis serves as the vehicle frame, absorbing vibrations and shocks to maintain body stability and enhance ride comfort. Hwashin possesses expertise in hot press forming steel for lightweighting, as well as in working with aluminum and various composite materials. This technological foundation: 1) has allowed Hwashin to expand into new markets such as EV battery cases; and 2) should help it penetrate the robotic limb and body module markets. In 2024, Hwashin constructed a new plant in Georgia (US) to support Hyundai Motor Group Metaplant America, giving the parts maker additional production capacity in the US.
- **Chassis technologies applicable in robotics:** Mobile robots with wheels share structural similarities with vehicles, making it feasible to apply chassis manufacturers' expertise in underbody frames of vehicles (including materials, vibration absorption, and shock absorption), along with battery pack technologies, to robotics.

Humanoid robots require technologies to absorb shocks and vibrations from the ground when walking and moving. These robots typically weigh 60-100 kg, necessitating lightweight materials to reduce their overall weight. Also, noise needs to be minimized by minimizing friction and absorbing shock from the ground when walking or running. When observed up close, humanoid robots generate so much noise while moving (such as walking or rolling) that they seem unsuitable for indoor service applications outside of manufacturing facilities. Robotic arms and hands must also be able to tolerate friction and absorb shocks and vibrations when handling objects.

Humanoid robot bodies typically house batteries. With a track record in supplying battery cases, Hwashin is well positioned to secure orders for body modules that include batteries.

- **Humanoid robot limbs have standardized specifications:** Boston Dynamics' humanoid robots feature arms and legs, both left and right, that are designed in the same format. This means that each robot requires four identical modules. With a production target of 30,000 robots pa, this translates to demand for 120,000 limb modules pa—enabling economies of scale.
- **ASP for arm, leg, and body modules estimated to be in 6-8% range:** When it comes to arm and leg module production, actuators—which make up 60% of manufacturing costs—are likely to be supplied to the module supplier by the robot maker. The body module is likely to include a battery pack (3-4 kWh). Hyundai Mobis had accounted for the procurement of battery cells (60-80 kWh) as

direct purchases during the early stages of battery pack production, but in 3Q24 began treating these components as customer-supplied. Hwashin is likely to treat actuators and battery cells as customer-supplied, as: 1) including all components would significantly boost its sales but make the business appear less profitable; and 2) for smaller parts suppliers like Hwashin, purchasing actuators and battery packs, assembling them into modules, and delivering them would take a couple of months—as production volumes grow, this process could strain operational cash flow.

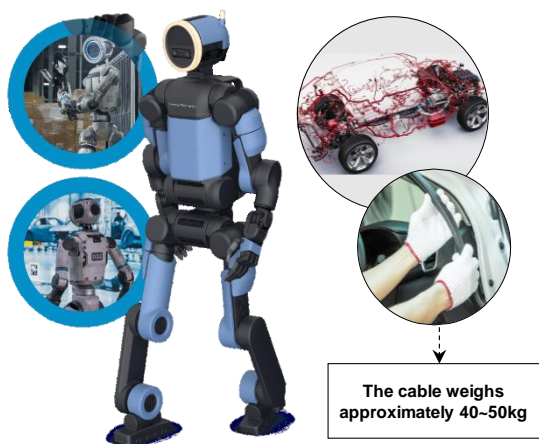
Based on the Atlas model, the combined ASP for two arms, two legs, and one body modules is estimated at USD7,000-7,300 (KRW10.0m-10.6m) during the initial production phase. However, as production scales up to more than 10,000 units, the ASP should fall to around USD3,100 (KRW2.9m-3.6m).

Companies in the mobility value chain

Company	Market cap (KRWb)	2026E P/E (x)	US plant	Automotive products	Robotics products
Hyundai Mobis	55,438	12.6	✓	Steering, braking, motors, electrification, sensors, chips	Actuators, battery modules, head modules, grippers
SL Corporation	3,149	7.8	✓	Lamps, side body modules	Indicator lights, battery packs, lidar modules, MobED and PnD production
HL Mando	3,052	12	✓	Steering, braking, motors, sensors	Actuators
SNT Motiv	796	7.9	✓	Motors (hybrid, EV, steering)	Motors
Hwashin	359	4	✓	Chassis, battery cases	Body modules, arm & leg modules
Samhyun	1,715	168.1	×	Gear reducer actuators	Actuators, motors, gear reducers
Samhwa Capacitor	1,320	55	×	DC-Link, MLCC	DC-Link, MLCC

Source: Company data, Bloomberg, Samsung Securities

Atlas Gen3: Employs cableless actuator structure



Source: Company data

Atlas: Cost breakdown (estimates)

Item	Unit cost (USD)	Quantity	Total cost (USD)
Rotary actuator	561	31	17,391
Vision sensor	41	3	123
Nvidia Thor chip	800	1	800
Gripper	800	2	1,600
Battery pack	600	4 kWh	600
Body			2,600
Subtotal			23,114
Data center depreciation*			26,667
Factory depreciation			1,156
Other operating costs			2,311
Total			53,248

Note: *Assumes usage of one-third of 50,000 Blackwell GPUs

Source: Samsung Securities estimates

Hwashin: Estimated revenue from robotics

Timeline	Volume (units)	Production cost (each, USD)	Unit cost (USD)	Hwashin sales* (USDm)	Hwashin sales** (KRWb)
2028	5,000	135,000	37	54	617
	10,000	53,248	32	46	466
2029	20,000	39,914	64	93	688
	30,000	35,470	96	139	910
2030	40,000	33,248	128	186	1,132
	50,000	31,914	160	232	1,355

Note: *Assumes exchange rate of USD/KRW1,450

Source: Samsung Securities estimates

Hwashin: Results and forecasts

(KRWb)	1Q25	2Q25	3Q25	4Q25	1Q26	2Q26E	3Q26E	4Q26E	2024	2025	2026E	2027E
KRW/USD (average)	1,453	1,401	1,387	1,452	1,467	1,450	1,430	1,420	1,365	1,423	1,442	1,390
Sales	473	491	486	512	506	530	520	560	1,712	1,962	2,116	2,356
Chg (% y-y)	13.9	14.4	16.1	14.1	6.8	7.9	7.0	9.4	-5.0	14.6	7.8	11.4
Gross profit	55	52	42	68	47	54	53	66	168	216	221	266
Operating profit	30	26	12	34	17	25	20	34	65	102	96	127
Chg (% y-y)	44.6	8.7	83.4	150.1	-44.3	-5.4	70.6	0.0	-22.0	56.9	-6.6	32.5
Pre-tax profit	35	-1	22	27	38	23	21	36	76	82	117	129
Net profit	29	0	18	19	28	17	16	27	54	67	88	97
Chg (% y-y)	-0.8	-98.3	nm	5.2	-2.8	6,691	-11.0	37.5	-30.7	24.5	31.7	10.2
Margins (%)												
Gross profit	11.5	10.7	8.6	13.2	9.3	10.2	10.3	11.8	9.8	11.0	10.5	11.3
Operating profit	6.4	5.4	2.4	6.6	3.4	4.7	3.8	6.1	3.8	5.2	4.5	5.4
Net profit	6.1	0.1	3.7	3.8	5.6	3.2	3.1	4.8	3.1	3.4	4.2	4.1
Sales, by region												
Korea	164	177	172	185	203	193	185	187	600	698	767	806
US	172	176	173	183	161	186	181	210	571	704	739	850
India	84	80	80	83	81	88	91	98	321	326	359	413
Brazil	35	36	42	41	41	42	45	40	148	154	169	186
China	18	21	19	20	18	19	16	24	70	77	77	81
Other	1	1	1	1	1	1	1	1	3	3	4	20
Sales contribution, by region (%)												
Korea	34.6	36.0	35.3	36.1	40.1	36.4	35.5	33.4	35.0	35.5	36.3	34.2
US	36.3	35.9	35.7	35.6	31.9	35.1	34.9	37.6	33.3	35.9	34.9	36.1
India	17.7	16.3	16.4	16.1	16.1	16.7	17.6	17.5	18.7	16.6	17.0	17.5
Brazil	7.4	7.3	8.6	8.0	8.2	8.0	8.7	7.1	8.6	7.8	8.0	7.9
China	3.7	4.2	3.8	4.0	3.6	3.6	3.2	4.2	4.1	3.9	3.7	3.4

Source: Company data, Samsung Securities estimates

Income statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Sales	1,712	1,962	2,116	2,356	2,584
Cost of goods sold	1,545	1,746	1,895	2,090	2,290
Gross profit	168	216	221	266	294
Gross margin (%)	9.8	11.0	10.5	11.3	11.4
SG&A expenses	102	114	125	140	156
Operating profit	65	102	96	127	138
Operating margin (%)	3.8	5.2	4.5	5.4	5.3
Non-operating gains (losses)	11	-20	21	2	6
Financial profit	70	37	12	11	13
Financial costs	63	50	29	27	27
Equity-method gains (losses)	-1	-5	-2	-2	0
Other	5	-3	40	20	21
Pre-tax profit	76	82	117	129	144
Taxes	22	15	29	32	36
Effective tax rate (%)	29.4	18.8	24.9	25.0	25.0
Profit from continuing operations	54	67	88	97	108
Profit from discontinued operations	0	0	0	0	0
Net profit	54	67	88	97	108
Net margin (%)	3.1	3.4	4.2	4.1	4.2
Net profit (controlling interests)	54	67	88	97	108
Net profit (non-controlling interests)	-0	-0	0	0	0
EBITDA	129	171	169	203	216
EBITDA margin (%)	7.5	8.7	8.0	8.6	8.4
EPS (parent-based) (KRW)	1,534	1,910	2,516	2,773	3,099
EPS (consolidated) (KRW)	1,534	1,910	2,516	2,773	3,099
Adjusted EPS (KRW)*	1,534	1,910	2,516	2,773	3,099

Cash flow statement

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Cash flow from operations	137	42	143	143	157
Net profit	54	67	88	97	108
Non-cash profit and expenses	97	109	121	126	129
Depreciation	64	68	73	76	78
Amortization	0	0	0	0	0
Other	33	41	48	50	50
Changes in A/L from operating activities	21	-92	-20	-31	-30
Cash flow from investments	-224	-173	-122	-103	-103
Change in tangible assets	-222	-170	-120	-100	-100
Change in financial assets	-3	-3	-2	-3	-3
Other	-0	0	-0	0	-0
Cash flow from financing	-7	204	-56	-10	-12
Change in debt	23	205	-50	0	0
Change in equity	0	-0	0	0	0
Dividends	-5	-5	-6	-10	-12
Other	-25	4	0	0	0
Change in cash	-80	71	-38	28	41
Cash at beginning of year	247	166	238	200	228
Cash at end of year	166	238	200	228	269
Gross cash flow	150	176	209	223	237
Free cash flow	-96	-146	23	43	57

Note: *Excluding one-off items;

**Fully diluted, excluding one-off items;

***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

Balance sheet

Year-end Dec 31 (KRWb)	2024	2025	2026E	2027E	2028E
Current assets	600	755	758	849	950
Cash & equivalents	166	238	200	228	269
Accounts receivable	203	215	232	258	283
Inventories	210	280	301	336	368
Other current assets	21	23	25	28	30
Fixed assets	722	804	852	880	905
Investment assets	32	30	32	35	38
Tangible assets	619	703	750	774	796
Intangible assets	3	5	5	5	4
Other long-term assets	68	66	66	66	66
Total assets	1,322	1,559	1,611	1,729	1,855
Current liabilities	669	653	622	651	680
Accounts payable	130	126	136	152	166
Short-term debt	290	359	359	359	359
Other current liabilities	248	167	126	140	154
Long-term liabilities	135	335	337	339	341
Bonds & long-term debt	111	308	308	308	308
Other long-term liabilities	24	27	29	31	33
Total liabilities	804	988	958	990	1,020
Owners of parent equity	517	571	652	739	835
Capital stock	17	17	17	17	17
Capital surplus	26	26	26	26	26
Retained earnings	455	519	601	687	783
Other	19	10	9	9	9
Non-controlling interests' equity	-0	-0	-0	-0	-0
Total equity	517	571	652	739	835
Net debt	356	489	477	450	408

Financial ratios

Year-end Dec 31	2024	2025	2026E	2027E	2028E
Growth (%)					
Sales	-5.0	14.6	7.8	11.4	9.7
Operating profit	-22.0	56.9	-6.6	32.5	8.8
Net profit	-30.7	24.5	31.7	10.2	11.7
Adjusted EPS**	-30.7	24.5	31.7	10.2	11.7
Per-share data (KRW)					
EPS (parent-based)	1,534	1,910	2,516	2,773	3,099
EPS (consolidated)	1,534	1,910	2,516	2,773	3,099
Adjusted EPS**	1,534	1,910	2,516	2,773	3,099
BVPS	14,891	16,443	18,771	21,258	24,021
DPS (common)	150	170	300	350	350
Valuations (x)					
P/E***	4.5	4.3	5.3	4.8	4.3
P/B***	0.5	0.5	0.7	0.6	0.6
EV/EBITDA	4.6	4.6	5.6	4.5	4.0
Ratios (%)					
ROE	11.1	12.3	14.4	13.9	13.8
ROA	4.3	4.6	5.5	5.8	6.0
ROIC	6.2	9.0	6.8	8.5	8.8
Payout ratio	9.7	8.9	11.9	12.6	11.2
Dividend yield (common)	2.2	2.0	2.3	2.6	2.6
Net debt to equity	68.8	85.7	73.2	60.9	48.9
Interest coverage (x)	2.5	4.0	3.4	4.6	5.0

COMPANY UPDATE

2026. 6. 17

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▶ AT A GLANCE

Not Rated

Target price n/a

Current price **KRW147,900**

Market Cap KRW1.5t/USD1.0b

Shares (float) 10,395,000 (71.8%)

52-week high/low KRW156,200/KRW25,300

Avg daily trading value (60-day) KRW91.7b/
USD60.7m

▶ ONE-YEAR PERFORMANCE

	1M	6M	12M
Samwha Capacitor (%)	126.8	366.6	474.4
Vs Kospi (%pts)	94.8	113.8	93.9

▶ SAMSUNG vs THE STREET

No of estimates	n/a
Target price	n/a
Recommendation	n/a

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL



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Samwha Capacitor (001820)

Why capacitors matter in robot cooling

- Samwha Capacitor derives over 50% of its sales from MLCC and 20% from DC-link products, both of which are essential components for robot thermal management.
- When actuators require instantaneous torque, capacitors deliver transient power, suppressing overall system electrical heat generation.
- With the role of capacitors continuing to expand in the AI era, Samwha Capacitor is entering a long-term growth cycle.

WHAT'S THE STORY

Growth sustainable into physical-AI era: Beyond data-center power infrastructure and EVs, capacitors are now indispensable in robotics.

- **Key functions:** Capacitors serve three key functions: 1) power stabilization—they stabilize power by delivering quick bursts of current when components like CPUs, GPUs, inverters, or industrial machines need sudden energy spikes; 2) noise filtering—they filter out electrical noise by diverting high-frequency interference to ground, leaving only clean, reliable signals; and 3) AC/DC separation—they block direct current (DC) while allowing alternating current (AC) to pass through, making them vital as filters in signal-processing circuits.
- **Expanding role of capacitors in the AI era:** Samwha Capacitor began as a manufacturer of disc ceramic capacitors (DCCs) for home appliances and has since expanded production to include multi-layer ceramic capacitors (MLCCs), automotive DC-link capacitors, and film capacitors used in factories and power plants. Its growth drivers are MLCCs and DC-link capacitors, which together account for 70% of total sales.

(Continued on the next page)

SUMMARY FINANCIAL DATA

	2022	2023	2024	2025
Revenue (KRWb)	263	281	295	294
Operating profit (KRWb)	31	24	18	13
Net Profit (KRWb)	29	21	22	13
EPS (adj) (KRW)	2,803	2,002	2,100	1,206
EPS (adj) growth (%)	2.5	(28.6)	4.9	(42.6)
EBITDA margin (%)	18.9	16.1	12.3	10.3
ROE (%)	13.7	8.9	8.6	4.6
P/E (adj) (x)	n/a	n/a	n/a	n/a
P/B (x)	n/a	n/a	n/a	n/a
EV/EBITDA (x)	(1.1)	(1.3)	(2.3)	(2.9)
Dividend yield (%)	n/a	n/a	n/a	n/a

Source: Company data, Samsung Securities estimates

- **Capacitors help manage heat in robots:** Unlike EVs, robots rely primarily on air cooling for thermal management. Actuators and capacitors are critical components—actuators are the main source of heat, while capacitors regulate instantaneous power output to control overall system heat generation. Robots incorporate 40-50% more MLCCs than smartphones do.

In robotics, capacitors serve as power dams that prevent electrical heat generation at its source.

- **Peak current buffering:** When robots lift heavy objects, capacitors supply instantaneous power to actuators, preventing excessive power from flowing directly from the battery to the joints, thereby controlling current spikes across the entire circuit. Sudden high current draw to a motor causes exponential heat generation due to resistance in wiring and circuits, placing severe strain on cooling systems. By delivering on-demand power locally, capacitors act as a first line of thermal defense that fundamentally suppresses the system's total electrical heat generation.
- **MLCC adoption expanding amid shift in power devices:** Replacing the motor driver IC for actuators with gallium nitride (GaN) power devices creates a cascade of improvements: the inverter runs cooler, enabling smaller capacitors, which frees up space in the joint and simplifies thermal design. MLCCs benefit from this structural transition.
- **Potential in robotics sales:** Samwha Capacitor's DC-link products—which it supplies for EVs and hybrid vehicles—can be adapted for robotic battery packs, while its MLCCs are applicable to actuators. Hyundai Motor Group integrated Samwha Capacitor into its value chain in 2013 when the parts maker developed DC-link technology. Approximately 30% of its MLCC sales come from EV and automotive electric/electronic (E/E) applications.

MLCCs and DC-link capacitors to drive earnings growth from 2Q

- **MLCC sales hit KRW38.7b in 1Q, up 24.2% y-y and accounting for 52% of total sales:** Driven by an ongoing boom in data-center construction investments, Samwha Capacitor has achieved strong growth in MLCC sales. Less than 5% of Samwha Capacitor's revenue comes from supplying MLCCs to data centers. However, the company is actively supplying MLCCs to the power infrastructure and inverters supporting data center operations.

To operate reliably, AI data centers require robust power infrastructure—including high-voltage transformers, uninterruptible power supplies (UPS), power distribution units (PDU), and power supply units (PSU) for server racks. MLCCs play a vital role in these systems by stabilizing power flow and absorbing voltage spikes. Samwha Capacitor supplies MLCCs specifically for these power infrastructure components.

- **Tier-1 players to mark up prices in 2Q:** Murata and Samsung Electro-Mechanics have announced ASP hikes of 5-10% starting in 2Q26, citing supply constraints—for reference, demand currently exceeds available capacity by more than two-fold. Accordingly, Samwha Capacitor's MLCC stands to benefit from this broader pricing momentum.
- **2H capacity expansion at Yongin plant could boost output by 40-50%:** Samwha Capacitor's domestic MLCC production lines ran at 85% capacity last year and are now fully up and running. Its peak MLCC sales of KRW163b occurred in 2018, during the earlier cloud data center boom—just 15% larger than its 2025 sales. Its consolidated 2018 sales and operating profit hit KRW274b and KRW81b, respectively, for an operating margin of 29.6%. The stock price hit a record high of KRW109,500 at that time.

Today's AI-driven capex cycle is five times larger—projected at USD750b-USD1t between 2025 and 2026, compared to USD130b-USD1500b in 2015-2018. To meet demand, Samwha Capacitor invested KRW14.5b in 2025 to expand and modernize its Yongin plant. The ramp-up construction is nearing completion and the newly-added production capacity should begin to generate sales from 2H26.

- **Second wave of EV adoption drives growth in DC-link and MLCC sales:** DC-link capacitors stabilize voltage fluctuations during the inverter's DC-to-AC conversion process, absorbing current ripple and buffering sudden voltage spikes that could damage semiconductor components in the inverter. Hybrids require one DC-link unit per vehicle; EVs require two. Samwha Capacitor developed DC-link technology in 2013 and supplies DC-link capacitors to HMG and European automakers (the latter via global parts makers).
- HMC and Kia are expanding their hybrid lineups and building full EV lineups in response to growing demand for EVs in Korea and Europe. In Europe, supported by the reinstatement of EV subsidies, EV sales are growing by over 30% y-y.

2026 guidance: The company targets 2026 sales growth of 5-10% y-y and operating profit growth of 40% y-y, led by higher MLCC utilization rates and ASP hikes.

- **Sales can exceed KRW300b:** FnGuide consensus has revenue of KRW331.5b (up 2.6% y-y), operating profit of KRW21b (up 62.7% y-y), and an operating margin of 6.33%. The stock is trading at 65x consensus P/E.
- **Valuation context:** During the 2015-2018 cloud/data center boom, MLCC peers traded at P/E of 20x-45x.
- **Corporate governance & financial structure:** Shareholder ownership consists of major shareholder (Chairman Oh, Young-ju and affiliates) 19.54%, Korea JCC 6.37%, and Samhwa Electric 2.24%. Circular ownership structure exists within the Samhwa Capacitor Group (capacitor, electric, electronics subsidiaries). Debt-to-equity ratio stood at 21.7% as of end-2025, and the company has transitioned to net cash position since 2018. In 2025, operating cash flow hit KRW26b, with capex of KRW17b (pointing to sustainable, self-funded investment model). R&D took up 1.19% of sales (according to annual report).
- **Dividend policy:** The company set its 2025 DPS at KRW500, for a dividend payout ratio of 41.5%. As it meets criteria for high-dividend stock status, its shareholders are eligible for separate taxation of dividend income under Korean tax law.

Role of capacitors in robotics thermal management

Component	Type	Thermal management role	Supply chain relevance
Main DC bus	Film or high-capacity electrolytic	Absorbs regenerative energy surges to prevent battery overcharge/overheating; reduces inverter heat by suppressing voltage spikes	Samsung Condenser DC-link; high voltage/temperature tolerance is critical
Joint driver DC link	MLCC (ceramic)	Filters high-frequency ripple current from GaN switching; improves inverter efficiency and lowers system heat	Samsung Electro-Mechanics, TDK, Murata, Samsung Condenser; trend shifting from electrolytic to ceramic for GaN systems
AI computing board	Polymer tantalum + MLCC	Delivers instant current to CPU/GPU; suppresses power noise to prevent thermal miscalculation	Low-ESL, low-ESR high-capacity MLCCs

Source: Media, Samsung Securities

Humanoid Robot: Estimated MLCC count

Category	Components	Number of MLCC (units)	Rationale
Joint actuator drivers	Motor driver boards 50+ units* x 30-80 MLCCs per board	1,500-4,000	Composition of industrial-grade small servo driver boards
AI compute board	FSD/Thor-class inference boards with multiple low-ESL, high-capacity decoupling capacitors	500-1,500	AI server boards contain up to 2.5x more MLCCs than general-purpose server boards (Samsung Electro-Mechanics)
Sensors & Communication	Camera modules, IMUs, force/torque sensors, wireless modules	100-300	
Power & Battery	BMS, DC-DC converters, power distribution (1-2 DC-link film capacitors separate)	100-300	
Total		Approximately 3,000-6,000	

Note: * 50+ units include 28 for body, 25 for hands/forearms, based on Optimus

Source: Media, Samsung Electro-Mechanics, Samsung Securities estimates

MLCC population by device type

Category	Smartphone	Humanoid Robot	Electric Vehicle
MLCC population	~1,000 units	~3,000 - 6,000 units (Samsung estimate)	18,000-20,000 units
Device weight	~0.2 kg	60-90 kg	~2,000 kg
MLCC density per kg (IT devices)	~50-80 units/kg	~10 units/kg	-
Required specifications (Mix)	General IT-grade	Automotive-grade high-reliability + high-capacity, low-ESL (higher ASP)	Automotive-grade high-reliability

Sources: Media reports, Samsung Electro-Mechanics, Samsung Securities

Samwha Capacitor: Product lineup



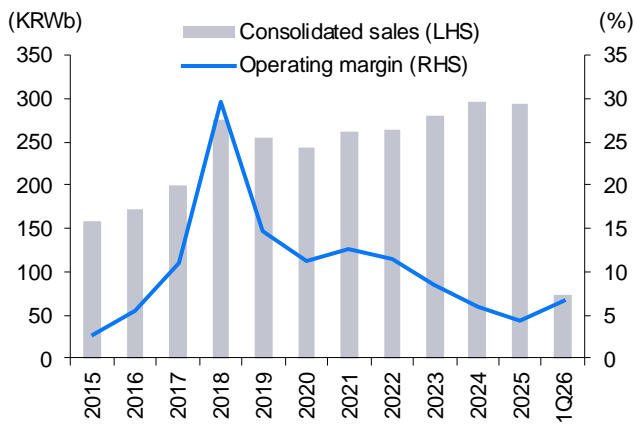
Source: Company data, Samsung Securities

Samwha Capacitor: 1Q review

(KRWm)	1Q25	Sales portion (%)	1Q26	Sales portion (%)	Chg (% y-y)
MLCC	31,221	43	38,771	53	24.2
FC	9,310	13	7,851	11	-15.7
DC-link	14,446	20	14,335	20	-0.8
DCC	7,179	10	5,705	8	-20.5
Other	10,270	14	6,191	8	-39.7
Revenue	72,426	100	72,853	100	0.6
Operating profit	4,814		4,696		-2.5
Operating margin (%)	6.6		6.4		-0.2%pts y-y

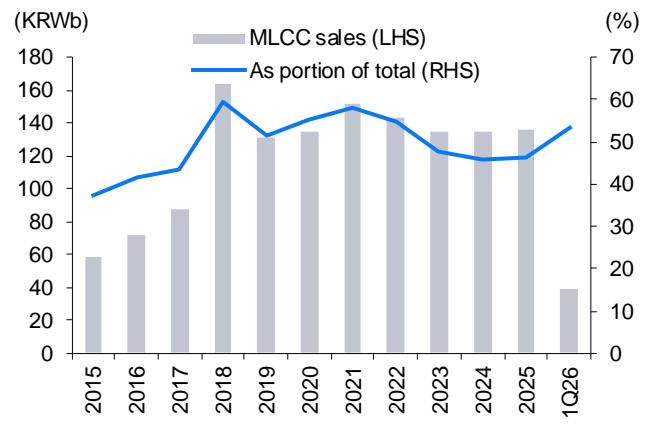
Source: Company data, Samsung Securities

Samwha Capacitor: Revenue and operating margin



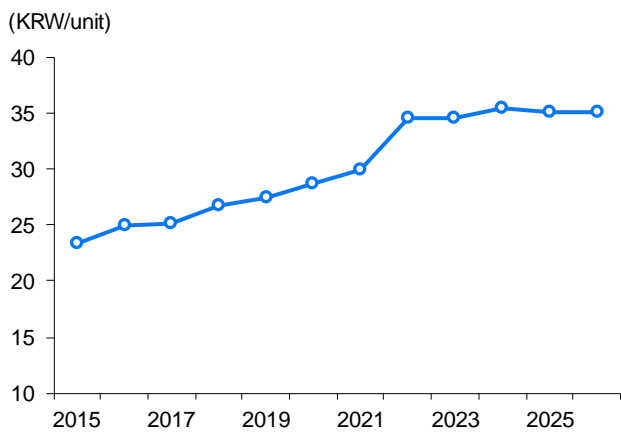
Source: Company data, Samsung Securities

Samwha Capacitor: MLCC sales



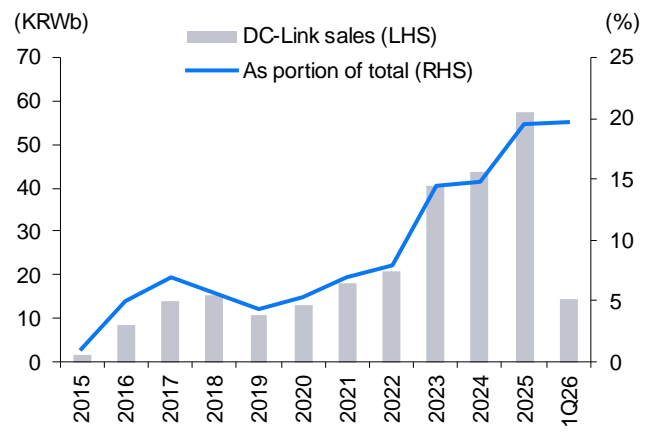
Source: Company data, Samsung Securities

Samwha Capacitor: Ceramic products' ASP



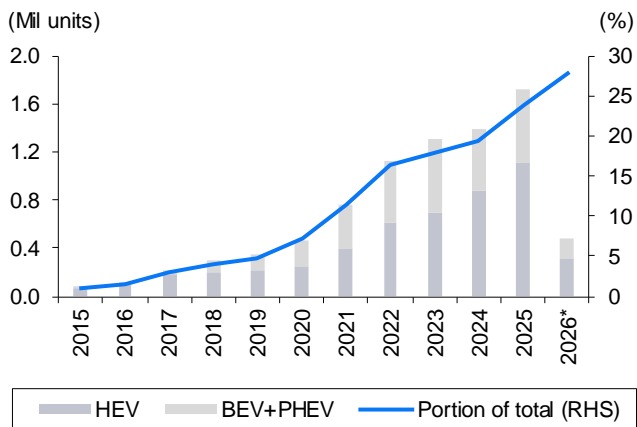
Source: Company data, Samsung Securities

Samwha Capacitor: DC-link sales



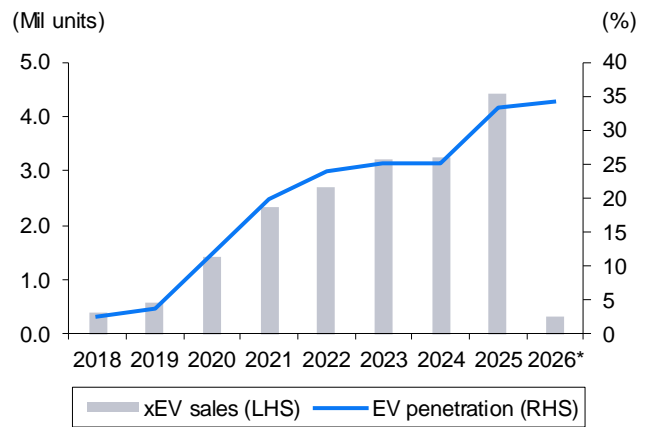
Source: Company data, Samsung Securities

HMC/Kia: HEV and EV (BEV+PHEV) sales volumes



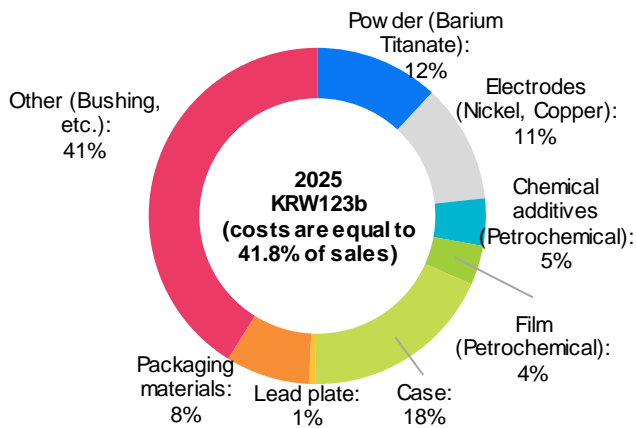
Note: *As of 1Q26
Source: Company data, Samsung Securities

Europe: EV sales volume



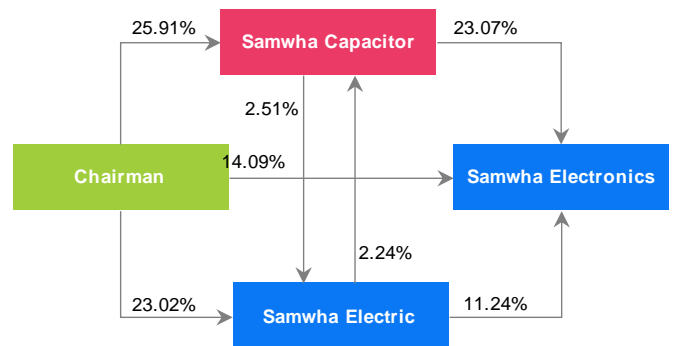
Note: *As of 1Q26
Source: ACEA, Samsung Securities

HMC/Kia: Breakdown of material costs



Source: Company data, Samsung Securities

Samwha Capacitor: Governance structure



Source: Company data, Samsung Securities

Income statement

Year-end Dec 31	2021	2022	2023	2024	2025
Sales	262	263	281	295	294
Cost of goods sold	203	206	229	248	250
Gross profit	59	58	52	47	44
Gross margin (%)	22.4	21.9	18.6	16.0	15.0
SG&A expenses	26	27	28	29	31
Operating profit	33	31	24	18	13
Operating margin (%)	12.7	11.6	8.4	6.0	4.4
Non-operating Gains(Losses)	3	3	2	9	2
Financial Profit	4	9	7	12	8
Financial Costs	3	7	6	4	7
Gains(Losses) in Equity Method	0	0	0	0	(0)
Other	2	0	1	1	1
Pre-tax profit	36	33	26	27	15
Taxes	8	4	5	5	2
Effective tax rate (%)	21.5	11.9	19.1	18.2	13.4
Profit from continuing operations	29	29	21	22	13
Profit from discontinued operations	0	0	0	0	0
Net profit	29	29	21	22	13
Net margin (%)	10.9	11.1	7.5	7.5	4.3
Net profit (Controlling Interests)	28	29	21	22	13
Net profit (Non-controlling Interests)	0	0	0	0	0
EBITDA	50	50	45	36	30
EBITDA margin (%)	19.2	18.9	16.1	12.3	10.3
EPS(parent) (KRW)	2,735	2,803	2,002	2,100	1,206
EPS(consolidated) (KRW)	2,753	2,822	2,013	2,120	1,213
Adjusted EPS (KRW)*	2,735	2,803	2,002	2,100	1,206

Cash flow statement

Year-end Dec 31	2021	2022	2023	2024	2025
Cash flow from operations	36	53	34	39	26
Net profit	29	29	21	22	13
Non-Cash Profit and Expense	29	32	28	21	20
Depreciation	17	19	21	18	17
Amortization	0	0	0	0	0
Others	11	13	7	3	3
Changes in A/L from Operating Activities	(18)	(2)	(8)	(3)	(4)
Cash flow from investments	(23)	(29)	(48)	(36)	(13)
Change in Tangible Assets	(19)	(24)	(25)	(11)	(17)
Change in Financial Assets	(4)	(3)	(23)	(25)	9
Other	(0)	(2)	(0)	0	(5)
Cash flow from financing	(4)	(11)	(8)	(10)	(3)
Change in debt	(2)	(5)	(2)	(5)	(1)
Change in equity	n/a	n/a	n/a	n/a	n/a
Dividends	(3)	(5)	(5)	(5)	(5)
Other	n/a	n/a	n/a	n/a	n/a
Change in cash	8	13	(20)	(5)	11
Cash at beginning of year	36	44	57	37	32
Cash at end of year	44	57	37	32	42
Gross cash flow	57	61	49	43	33
Free cash flow	16	29	9	28	9

Note: *Excluding one-off items

**Fully diluted, excluding one-off items

***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

Balance sheet

Year-end Dec 31	2021	2022	2023	2024	2025
Current assets	148	162	177	206	214
Cash & equivalents	44	57	37	32	42
Accounts receivable	51	54	61	70	67
Inventories	40	34	37	36	43
Other current assets	12	17	42	69	62
Fixed assets	121	125	131	122	126
Investment assets	19	15	22	21	25
Tangible assets	94	98	100	94	96
Intangible assets	1	1	1	1	1
Other long-term assets	8	12	8	7	4
Total assets	269	287	308	328	340
Current liabilities	53	54	55	54	53
Accounts payable	24	26	32	34	34
Short-term debt	11	6	4	0	0
Other current liabilities	17	21	19	20	19
Long-term liabilities	14	8	8	7	7
Bond & long-term debt	0	0	0	0	0
Other long-term liabilities	14	8	8	7	7
Total liabilities	66	62	63	61	61
Owners of parent equity	202	224	244	265	278
Capital stock	10	10	10	10	10
Capital surplus	5	5	5	5	7
Retained earnings	177	205	219	236	243
Other	10	4	10	14	17
Non-controlling interests equity	1	1	2	2	2
Total equity	203	225	245	267	280
Net debt	(37)	(58)	(62)	(87)	(90)

Financial ratios

Year-end Dec 31	2021	2022	2023	2024	2025
Growth (%)					
Sales	8.1	0.5	6.6	5.2	(0.3)
Operating profit	22.4	(8.0)	(22.4)	(24.7)	(27.9)
Net profit	22.0	2.5	(28.7)	5.3	(42.8)
Adjusted EPS**	21.9	2.5	(28.6)	4.9	(42.6)
Per share data (KRW)					
EPS(parent)	2,735	2,803	2,002	2,100	1,206
EPS(consolidated)	2,753	2,822	2,013	2,120	1,213
Adjusted EPS **	2,735	2,803	2,002	2,100	1,206
BPS	19,654	21,828	23,733	25,847	27,050
DPS (common)	n/a	n/a	n/a	n/a	n/a
Valuations (x)					
P/E***	n/a	n/a	n/a	n/a	n/a
P/B***	n/a	n/a	n/a	n/a	n/a
EV/EBITDA	(0.7)	(1.1)	(1.3)	(2.3)	(2.9)
Ratios					
ROE (%)	15.1	13.7	8.9	8.6	4.6
ROA (%)	11.4	10.5	7.0	6.9	3.8
ROIC (%)	17.4	17.2	11.9	8.9	6.7
Payout ratio (%)	n/a	n/a	n/a	n/a	n/a
Dividend yield (Common, %)	n/a	n/a	n/a	n/a	n/a
Net debt to equity (%)	(18.1)	(25.9)	(25.3)	(32.6)	(32.1)
Interest coverage (x)	69.1	66.2	45.1	67.5	63.0

COMPANY UPDATE

2026. 6. 17

EV/Mobility Team

Esther Yim

Team Leader
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Hyunji Kim

Research Associate
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▶ AT A GLANCE

Not Rated

Target price	n/a
Current price	KRW52,000
Market Cap	KRW1.6t/USD1.1b
Shares (float)	31,707,567 (35.6%)
52-week high/low	KRW73,200/KRW11,170
Avg daily trading value (60-day)	KRW15.1b/ USD10.0m

▶ ONE-YEAR PERFORMANCE

	1M	6M	12M
SAMHYUN CO.,LTD (%)	-1.3	3.2	281.0
Vs Kosdaq (%pts)	9.4	-7.2	190.7

▶ KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	Not Rated		
Target price	n/a		
2026E EPS	n/a		
2027E EPS	n/a		

▶ SAMSUNG vs THE STREET

No of estimates	n/a
Target price	n/a
Recommendation	n/a

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL



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Samhyun (437730)

Wins robot actuator prototype order

- Samhyun has secured a contract from a global robotics company for the prototype development of actuators, it has been reported by the media. Prototype development is the stage that follows design validation and involves verifying mass-production quality.
- A contract for mass-production is expected to be signed with Samhyun this year. Samhyun is expanding its scope—previously an automotive parts supplier, the firm aims to provide robotics and defense components.
- Within the mobility value chain, Samhyun commands the highest valuation (a trailing P/E of 168x). In time, other parts of the mobility value chain are also expected to trade at lofty valuations.

WHAT'S THE STORY?

On track to secure mass-production orders by year-end: Samhyun has completed design validation for its actuators and is now validating their readiness for mass-production. If related orders are secured this year, production is expected to begin in 2027 at the Changwon plant #2.

- **Robotic actuator order pipeline stages:** Prospect (company and product introduction) → Access (technical validation, design approval, and supply chain onboarding) → Spec-in (design collaboration and unit price negotiation) → Order award (finalization of volume and pricing)
- **In discussions with multiple robotics firms:** While each robotics firm is at a different stage of negotiations, Samhyun is engaging with global and Korean robotics firms to assess its potential to land orders.

(Continued on the next page)

SUMMARY FINANCIAL DATA

	2022	2023	2024	2025
Revenue (KRWb)	0	100	100	95
Operating profit (KRWb)	0	10	6	1
Net profit (KRWb)	0	9	8	10
EPS (adj) (KRW)	0	125,997	111,636	138,778
EPS (adj) growth (%)	nm	nm	(11.4)	24.3
EBITDA margin (%)	n/a	12.8	9.1	5.1
ROE (%)	n/a	38.9	10.2	8.5
P/E (adj) (x)	n/a	n/a	n/a	n/a
P/B (x)	n/a	n/a	n/a	n/a
EV/EBITDA (x)	n/a	(0.5)	(7.0)	5.3
Dividend yield (%)	n/a	n/a	n/a	n/a

Source: Company data, Samsung Securities estimates

Profit to recover in 2027: Samhyun’s core business (automotive components) is sluggish at present due to production slowdowns at its customers. Its R&D costs have expanded to as much as 25% of its sales, driven by new product development (robotic actuators and defense-related parts).

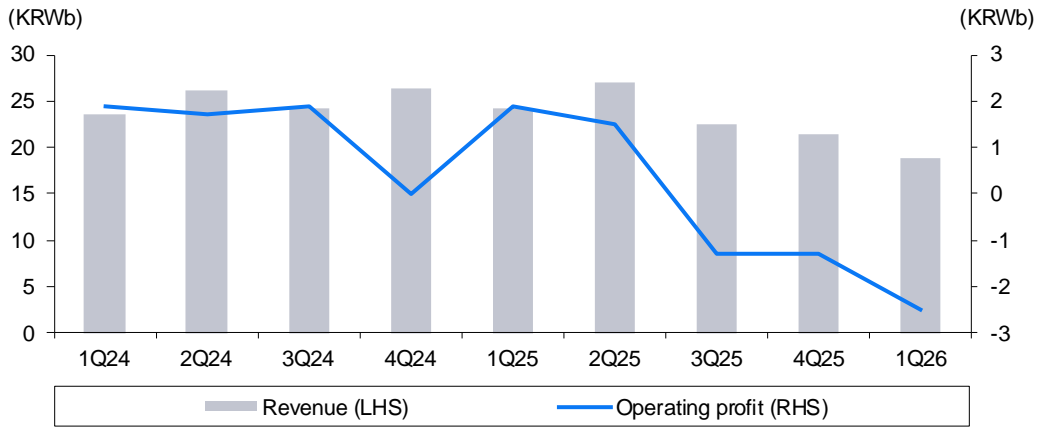
- **Turns to operating loss in 3Q25:** Its sales have stalled, and high R&D costs continue to pressure the firm’s profitability. As of 1Q26, out of its 330 total employees (including 40 contract workers), 117 or 35% are dedicated to R&D.
- **Defense and robotic sales on the rise:** Its defense and robotic sales (combined) reached KRW15.4b in 2025 (up 42.5%), accounting for 16% of its total sales. In 1Q26, its defense and robotic sales (combined) came to KRW3.2b (up 88% y-y), representing 17% of its total sales.
- **Debt ratio at 50%:** The company went public in Mar 2024, and its net borrowings stand at KRW30.5b.

Companies in the mobility value chain

Company	Market cap (KRWb)	2026E P/E (x)	US plant	Automotive products	Robotics products
Hyundai Mobis	55,438	12.6	✓	Steering, braking, motors, electrification, sensors, chips	Actuators, battery modules, head modules, grippers
SL Corporation	3,149	7.8	✓	Lamps, side body modules	Indicator lights, battery packs, lidar modules, MobED and PnD production
HL Mando	3,052	12	✓	Steering, braking, motors, sensors	Actuators
SNT Motiv	796	7.9	✓	Motors (hybrid, EV, steering)	Motors
Hwashin	359	4	✓	Chassis, battery cases	Body modules, arm & leg modules
Samhyun	1,715	168.1	×	Gear reducer actuators	Actuators, motors, gear reducers
Samhwa Capacitor	1,320	55	×	DC-Link, MLCC	DC-Link, MLCC

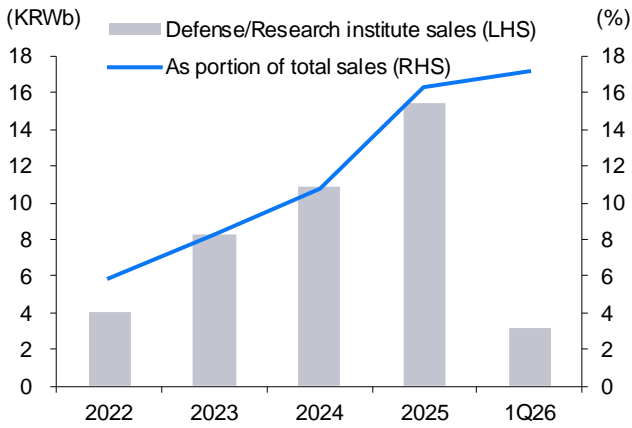
Source: Company data, Bloomberg, Samsung Securities

Samhyun: Sales and operating profit



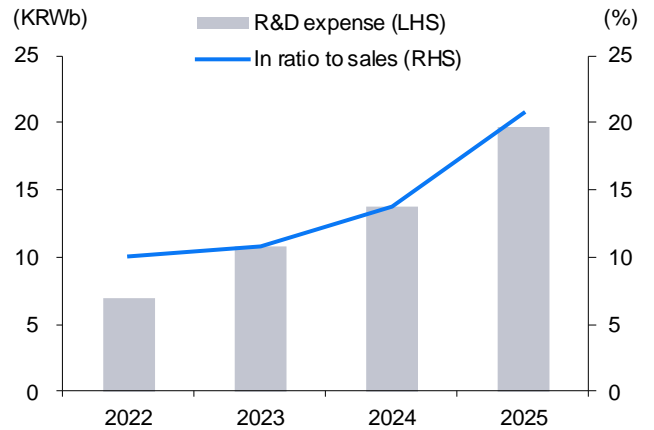
Source: Company data, Samsung Securities

Samhyun: Defense sales and as portion of total sales



Source: Company data, Samsung Securities

Samhyun: R&D expenses



Source: Company data, Samsung Securities

Samhyun: Joint module motor



Source: RoboWorld, Samsung Securities

Samhyun: Smart in-wheel drive motor



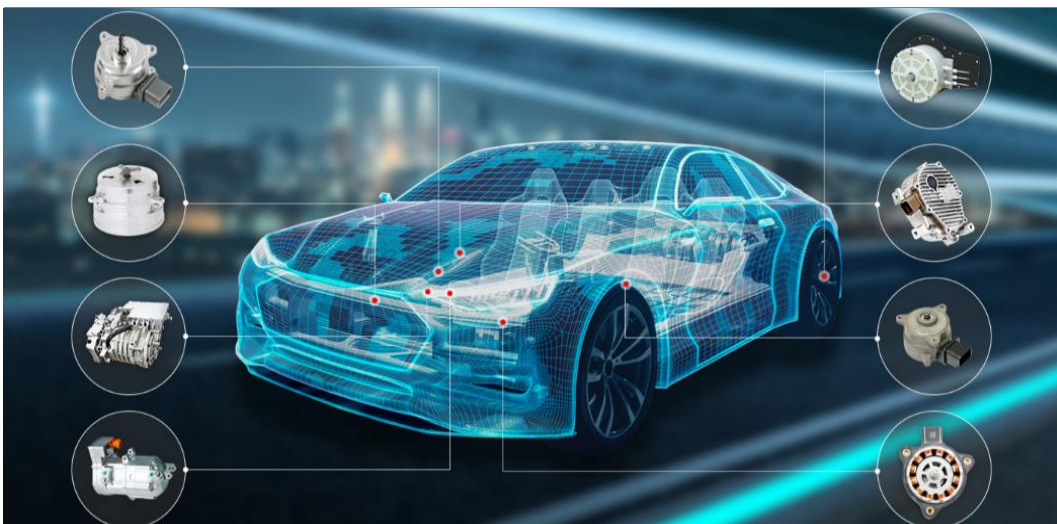
Source: RoboWorld, Samsung Securities

Samhyun: Changwon plant #2



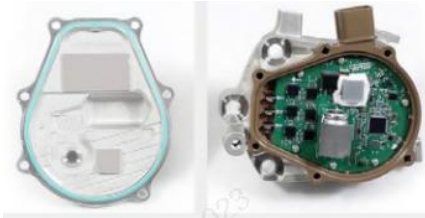
Source: Company data

Samhyun's business areas: Mobility—Electrification smart actuators



Source: Company data

CVVD actuator



Source: Company data

DCT clutch actuator (CA) motor



Source: Company data

SBW actuator



Source: Company data

Samhyun's business areas: Defense industry—High-precision control technology smart actuators, electric propulsion systems



Source: Company data

EOTS internal elevation/azimuth gimbal motor



Source: Company data

Remote controlled weapon system (RCWS) drive module



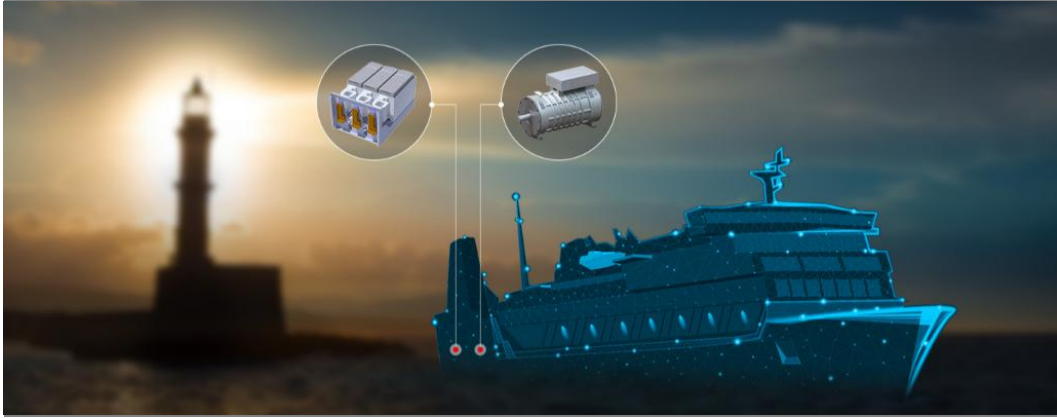
Source: Company data

Unmanned transport platform: Hoplon



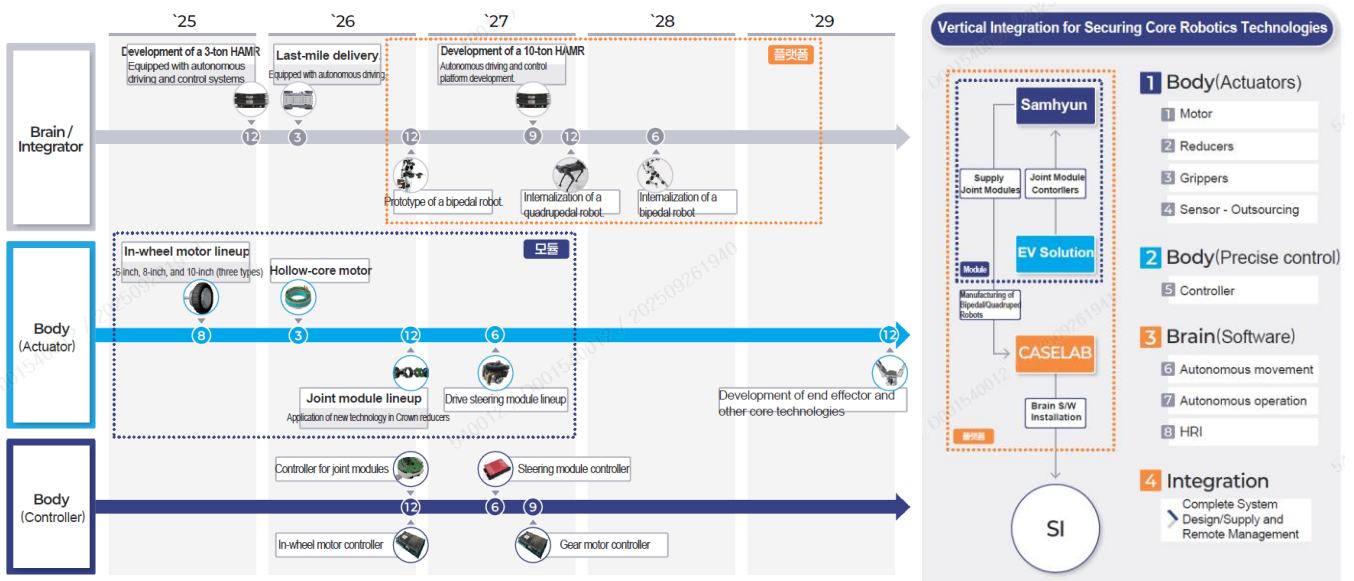
Source: Company data

Samhyun's business areas: Shipbuilding—Eco-friendly electric/hybrid electric propulsion systems for ships




Source: Company data

Samhyun's business areas: Robotics—Building full line-up of joint modules and drive modules to create robotics platform by end-2027







Source: Company data

Samhyun's business areas: Aerospace industry—Core components for AAM and hybrid drones



Infrastructure

- 1 International joint research (5 years/10 billion)

- 2 Joining the Changwon Drone/AAM Business Consortium: Provision of land, Drafting of national projects
- 3 Planned investment in Ironbird for performance verification of aviation propulsion units (EPU)

Secure references

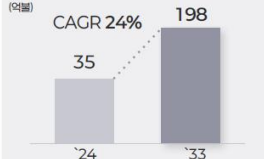
Development of core technologies

- Secured aviation manufacturing technology (HALBACH ARRAY) Hold 3
- patents related to aviation AAM

Demonstration projects

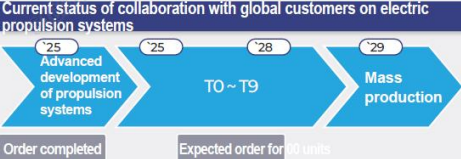
- Completed development of a 7KW high-altitude, 3-hour drone starter/generator system in 2024
- AFM technology development (4 years/KRW10b) from 2024 to 2027
- Prototype development of H company's aviation propulsion system in 2025
- Development of a 70KW electric aircraft drive motor from 2025 to 2030

Global market size
(단위: Verified Market Reports)



Year	Market Size (Billion USD)
2024	35
2033	198

Current status of collaboration with global customers on electric propulsion systems



Note: EPU; Electric Propulsion Unit, AFM; Axial Flux Motor
Source: Company data

Income statement

Year-end Dec 31	2021	2022	2023	2024	2025
Sales	0	0	100	100	95
Cost of goods sold	0	0	84	87	84
Gross profit	0	0	16	14	11
Gross margin (%)	n/a	n/a	15.7	13.8	11.7
SG&A expenses	0	0	6	8	10
Operating profit	0	0	10	6	1
Operating margin (%)	n/a	n/a	9.8	5.5	0.8
Non-operating Gains(Losses)	0	0	(0)	2	7
Financial Profit	0	0	1	3	8
Financial Costs	0	0	1	1	1
Gains(Losses) in Equity Method	0	0	0	0	0
Other	0	0	(0)	0	0
Pre-tax profit	0	0	10	7	8
Taxes	0	0	0	(1)	(2)
Effective tax rate (%)	n/a	n/a	3.3	(12.5)	(23.4)
Profit from continuing operations	0	0	9	8	10
Profit from discontinued operations	0	0	0	0	0
Net profit	0	0	9	8	10
Net margin (%)	n/a	n/a	9.5	8.3	10.2
Net profit (Controlling Interests)	0	0	9	8	10
Net profit (Non-controlling Interests)	0	0	0	(0)	(1)
EBITDA	0	0	13	9	5
EBITDA margin (%)	n/a	n/a	12.8	9.1	5.1
EPS(parent) (KRW)	0	0	125,997	111,636	138,778
EPS(consolidated) (KRW)	0	0	125,997	110,858	129,210
Adjusted EPS (KRW)*	0	0	125,997	111,636	138,778

Cash flow statement

Year-end Dec 31	2021	2022	2023	2024	2025
Cash flow from operations	0	0	12	7	0
Net profit	0	0	9	8	10
Non-Cash Profit and Expense	0	0	4	2	(4)
Depreciation	0	0	3	4	4
Amortization	0	0	0	0	0
Others	0	0	1	(2)	(8)
Changes in A/L from Operating Activities	0	0	(2)	(4)	(7)
Cash flow from investments	0	0	(9)	(45)	(37)
Change in Tangible Assets	0	0	(4)	(7)	(53)
Change in Financial Assets	0	0	(23)	(37)	41
Other	0	0	18	(2)	(25)
Cash flow from financing	0	0	(5)	42	47
Change in debt	0	0	22	(16)	47
Change in equity	n/a	n/a	n/a	n/a	n/a
Dividends	0	0	0	0	(2)
Other	n/a	n/a	n/a	n/a	n/a
Change in cash	0	0	(2)	4	11
Cash at beginning of year	0	0	8	6	10
Cash at end of year	0	0	6	10	21
Gross cash flow	0	0	14	10	6
Free cash flow	0	0	7	0	(53)

Note: *Excluding one-off items

**Fully diluted, excluding one-off items

***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

Balance sheet

Year-end Dec 31	2021	2022	2023	2024	2025
Current assets	0	0	55	94	91
Cash & equivalents	0	0	6	10	21
Accounts receivable	0	0	16	14	11
Inventories	0	0	7	6	12
Other current assets	0	0	27	64	48
Fixed assets	0	0	40	46	111
Investment assets	0	0	1	1	15
Tangible assets	0	0	37	40	87
Intangible assets	0	0	0	1	3
Other long-term assets	0	0	2	5	5
Total assets	0	0	95	140	202
Current liabilities	0	0	44	21	21
Accounts payable	0	0	17	11	7
Short-term debt	0	0	2	2	3
Other current liabilities	0	0	25	8	10
Long-term liabilities	0	0	2	4	50
Bond & long-term debt	0	0	2	3	48
Other long-term liabilities	0	0	1	1	2
Total liabilities	0	0	46	25	70
Owners of parent equity	0	0	49	115	131
Capital stock	0	0	4	16	16
Capital surplus	0	0	0	47	38
Retained earnings	0	0	44	52	81
Other	0	0	(0)	(0)	(4)
Non-controlling interests equity	0	0	0	0	1
Total equity	0	0	49	115	132
Net debt	0	0	(7)	(64)	25

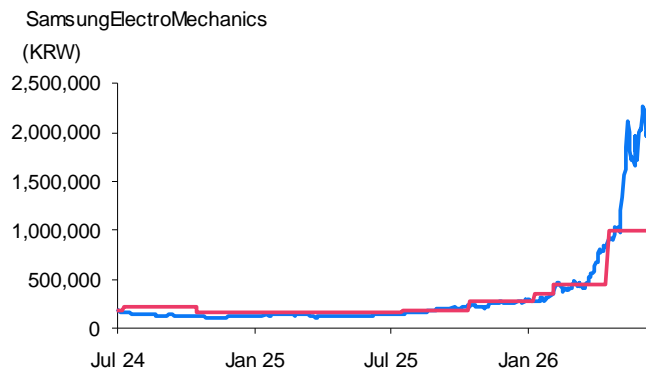
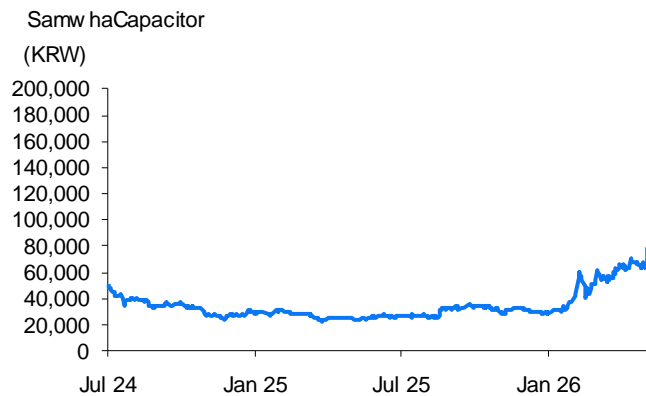
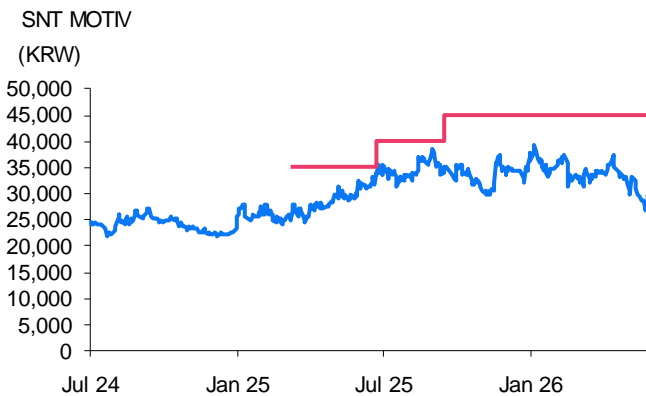
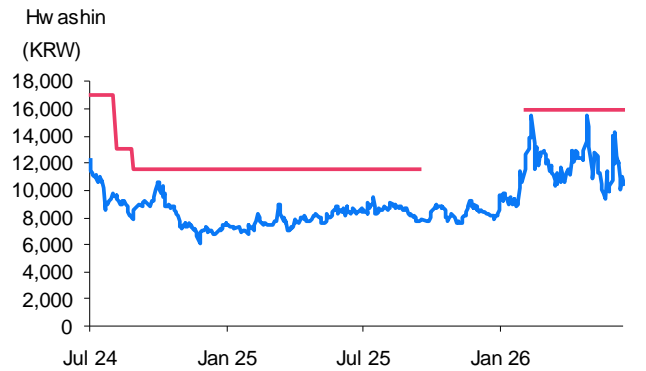
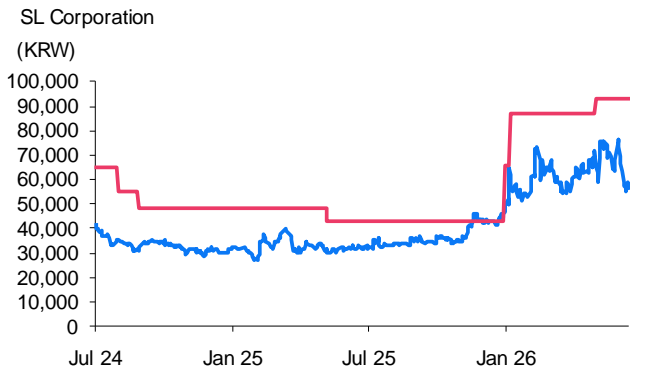
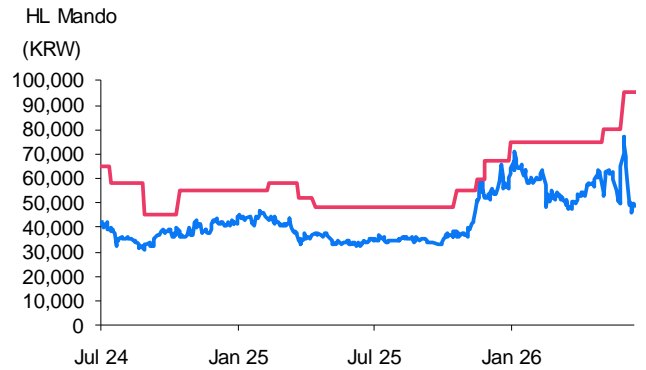
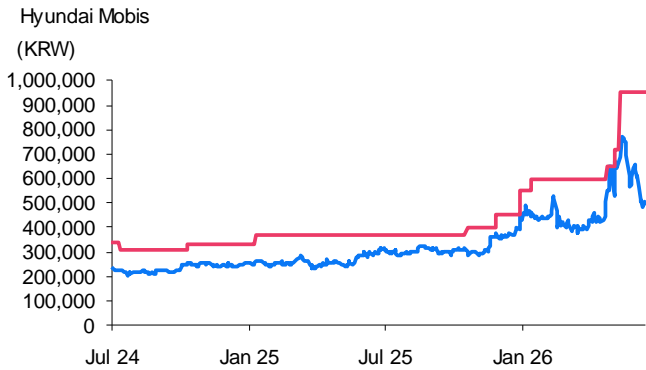
Financial ratios

Year-end Dec 31	2021	2022	2023	2024	2025
Growth (%)					
Sales	nm	nm	nm	0.6	(5.4)
Operating profit	nm	nm	nm	(43.7)	(85.4)
Net profit	nm	nm	nm	(12.0)	16.6
Adjusted EPS**	nm	nm	nm	(11.4)	24.3
Per share data (KRW)					
EPS(parent)	0	0	125,997	111,636	138,778
EPS(consolidated)	0	0	125,997	110,858	129,210
Adjusted EPS **	0	0	125,997	111,636	138,778
BPS	0	0	1,928	4,563	5,204
DPS (common)	n/a	n/a	n/a	n/a	n/a
Valuations (x)					
P/E***	n/a	n/a	n/a	n/a	n/a
P/B***	n/a	n/a	n/a	n/a	n/a
EV/EBITDA	n/a	n/a	(0.5)	(7.0)	5.3
Ratios					
ROE (%)	n/a	n/a	38.9	10.2	8.5
ROA (%)	n/a	n/a	19.9	7.1	5.7
ROIC (%)	n/a	n/a	45.9	13.6	1.0
Payout ratio (%)	n/a	n/a	n/a	n/a	n/a
Dividend yield (Common, %)	n/a	n/a	n/a	n/a	n/a
Net debt to equity (%)	n/a	n/a	(14.4)	(55.2)	19.0
Interest coverage (x)	n/a	n/a	12.3	10.8	1.1

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Target price changes in past two years



Rating changes over past two years (adjusted share prices)

Hyundai Mobis												
Date	2024/3/20	7/26	10/25	2025/1/24	11/3	12/12	2026/1/14	1/28	5/11	5/20	5/27	
Recommendation	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	
Target price (KRW)	340000	310000	330000	370000	400000	450000	550000	600000	650000	720000	950000	
Gap* (average)	-30.85	-28.56	-24.95	-24.53	-22.07	-16.66	-16.89	-28.76	-8.41	-8.33		
(max or min)**	-21.76	-19.35	-21.67	-12.30	-9.38	0.22	-11.36	-11.83	0.00	-6.94		
HL Mando												
Date	2024/7/1	7/29	9/11	10/28	2025/2/25	4/7	4/28	11/3	12/1	12/12	2026/1/14	5/19
Recommendation	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY
Target price (KRW)	65000	58000	45000	55000	58000	52000	48000	55000	60000	67000	75000	80000
Gap* (average)	-35.91	-39.90	-18.57	-24.91	-29.05	-31.59	-27.26	-29.25	-8.90	-16.17	-24.08	-27.52
(max or min)**	-32.15	-32.76	-10.67	-15.18	-23.88	-27.88	-19.69	-15.27	-1.33	-2.39	-4.80	-18.75
Date	6/15											
Recommendation	BUY											
Target price (KRW)	95000											
Gap* (average)												
(max or min)**												
SL Corporation												
Date	2024/7/1	8/16	9/11	2025/5/22	2026/1/14	1/22	5/18					
Recommendation	BUY	BUY	BUY	BUY	BUY	BUY	BUY					
Target price (KRW)	65000	55000	48000	43000	66000	87000	93000					
Gap* (average)	-41.11	-40.00	-32.28	-17.11	-19.92	-29.99						
(max or min)**	-32.08	-37.09	-17.29	7.79	-1.82	-15.63						
Hwashin												
Date	2024/6/18	8/19	9/11	2026/2/19								
Recommendation	BUY	BUY	BUY	BUY								
Target price (KRW)	17000	13000	11500	16000								
Gap* (average)	-31.40	-31.78	-29.77									
(max or min)**	-11.76	-26.08	-7.74									
SNT MOTIV												
Date	2025/3/25	7/8	10/1									
Recommendation	BUY	BUY	BUY									
Target price (KRW)	35000	40000	45000									
Gap* (average)	-17.28	-13.48										
(max or min)**	-2.86	-3.50										
SamwhaCapacitor												
Date	2026/7/1											
Recommendation	Not Rated											
Target price (KRW)	n/a											
Gap* (average)												
(max or min)**												

Rating changes over past two years (adjusted share prices)

SAMHYUN CO.,LTD

Date	2026/7/1
Recommendation	Not Rated
Target price (KRW)	n/a
Gap* (average)	
(max or min)**	

SamsungElectroMechanics

Date	2024/4/30	7/23	10/30	2025/8/1	10/30	2026/1/26	2/20	5/4
Recommendation	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY
Target price (KRW)	190000	210000	160000	185000	270000	350000	450000	1000000
Gap* (average)	-17.53	-34.60	-20.22	-0.11	-5.96	-14.30	16.52	
(max or min)**	-9.11	-24.00	-5.06	25.41	8.15	2.29	86.44	

Note: * [(average, maximum, or minimum share price over duration of target price minus target price) / target price] x 100%

** Maximum/minimum share price if new target is higher/lower than market close on the business day prior to target price change

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HOLD	Expected to increase/decrease in value by less than 15% within 12 months
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Industry

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Percentage of ratings in 12 months prior to 2026.03.31

BUY(85.5%)-HOLD(14.5%)-SELL(0%)

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