July 29, 2025

Maybank

Internet

Singapore

Grab Holdings (GRAB US)

Rides ahead in AV shift

BUY

Share Price	USD 5.27
12m Price Target	USD 5.85 (+11%)
Previous Price Target	*USD 5.85*

Early AV moves help Grab lead

Grab is well-positioned to benefit from Autonomous Vehicle (AV) adoption in Singapore. Based on a 2030 blue sky model, we estimate AV costs could fall to USD0.52/mile with tech deflation, while driver costs rise to USD0.85/mile on 4% annual inflation. Assuming 20% of Grab's Singapore fleet transitions to AVs, this implies potential annual savings of ~USD71m and a 7% uplift in NPV. With early AV partnerships (A2Z, Motional, WeRide) and operational strength via Grab Rentals, Grab is uniquely positioned to play both platform and fleet operator roles in the AV world, while its strong balance sheet supports infrastructure investment and mitigates competitive (new tech disruptor) risks. Maintain BUY on Grab.

Enablers mainly partners rather than rivals

Unlike traditional ride-hailing's asset-light model, AV ride-hailing remains infrastructure-heavy, requiring significant investment across three layers: the autonomy tech stack, ride-hailing platform integration, and fleet operations including depots, charging, and upkeep. As a result, the global AV landscape is shifting from standalone deployment to platform-led collaboration, reinforcing our view that partnerships are the fastest route to scale. In the US, Waymo integrates with Uber, and Mobileye with Lyft—pairing cutting-edge tech with fleet access. China remains the exception, with Baidu's full-stack Apollo Go surpassing 11m rides since inception, though it still lags Didi's 33m daily trips. In South Korea and the Middle East, players like Hyundai, WeRide, and Baidu are working through strategic tie-ups with ride-hailing apps and governments.

AV unit economics - costs falling; look for vision tech

AV cost/mile is already competitive but not yet superior — Waymo's estimated cost is USD2.31/mile excluding platform overheads and foundational R&D spend vs. Uber's USD1.97/mile. Including amortized R&D (~USD1.0/mile), total cost could exceed USD3.3/mile. However, vision-led systems like Tesla FSD and Baidu Apollo Go are narrowing the cost gap, with Apollo Go's RT6 priced under USD30k vs. >USD100k for Waymo's LiDAR-reliant AV. As AV BOM drops and AI-driven vision matures, cost per mile could fall below human-driven models, making the path to scalable AVs clearer. In Singapore, we estimate, AV tech stack cost per mile at ~USD0.84 at full utilization, vs. driver earnings at ~USD0.70.

Long wait before AV works in emerging ASEAN

AV economics remain unfavourable in emerging ASEAN. With driver costs at just USD0.2-0.3/mile in markets like Indonesia and Vietnam, AVs—at USD0.7-0.8/mile—are still uncompetitive. Poor road infrastructure and informal traffic patterns further raise localisation costs. Coupled with political sensitivity around driver displacement, mass deployment is unlikely in the medium term. Upside optionality exists, but timelines will be long and staggered.

FYE Dec (USD m)	FY23A	FY24A	FY25E	FY26E	FY27E
Revenue	2,359	2,797	3,446	4,106	4,775
EBITDA	(22)	313	485	770	1,058
Core net profit	(434)	(105)	235	439	702
Core EPS (cts)	(11.2)	(2.6)	5.9	11.0	17.6
Core EPS growth (%)	nm	nm	nm	86.9	59.9
Net DPS (cts)	0.0	0.0	0.0	0.0	0.0
Core P/E (x)	nm	nm	89.5	47.9	30.0
P/BV (x)	2.0	2.9	3.2	3.0	2.7
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
ROAA (%)	(4.8)	(1.2)	2.6	4.9	7.3
EV/EBITDA (x)	nm	51.8	38.9	23.7	16.3
Net gearing (%) (incl perps)	net cash	net cash	net cash	net cash	net cash

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Company Description

Grab is a leading Southeast Asian superapp with care verticals in delivery, mobility and financial services.

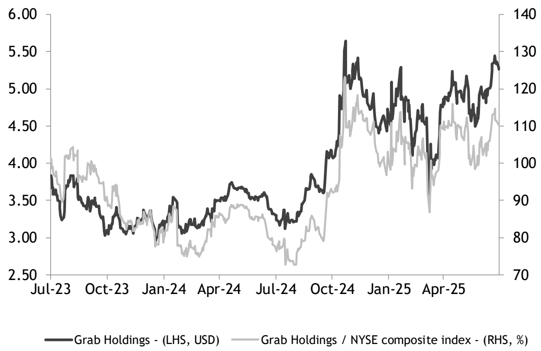
Statistics

52w high/low (USD)	5.64/3.12
3m avg turnover (USDm)	38.9
Free float (%)	75.0
Issued shares (m)	4,037
Market capitalisation	USD21.3B
	USD21.3B

Major shareholders:

Uber Technologies, Inc.	13.9%
SB Investment Advisers (UK) Ltd.	10.5%
Toyota Motor Corp.	5.8%

Price Performance



	-1M	-3M	-12M
Absolute (%)	7	10	59
Relative to index (%)	5	1	42

Source: FactSet

Companies mentioned

Baidu (BIDU US, CP: USD90.80, not rated)
Tesla (TSLA US, CP: USD316.06, not rated)
Waymo is an unlisted subsidiary of Alphabet Inc.(GOOG US, CP: USD194.08, not rated)
Didi (DIDIY US, CP: USD5.47, not rated)
Uber (UBER US, CP: USD91.29, not rated)
Mobileye (MBLY US, CP:14.82, not rated)
Lyft (LYFT US, CP: USD14.30, not rated)
ComforDelGro (CD SP, CP: SGD1.59, TP: SGD1.70, BUY)

Abbreviations in this report

AV - Autonomous Vehicles
BOM - Bill of materials
FSD - Full self-driving

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Tear Sheet Insert

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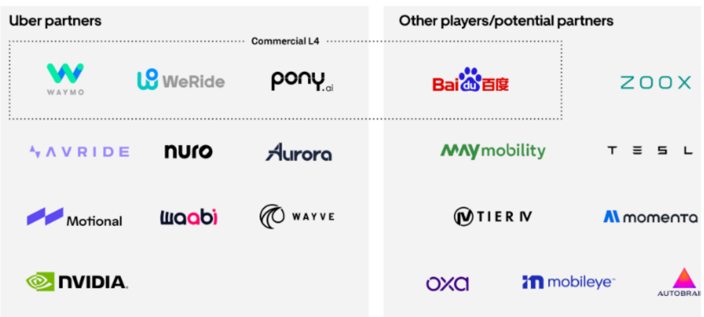
Global case studies: Enablers are mainly partners rather than rivals

US: New AV entrants are emerging, but partnerships with established players are likely the path to scale

In the US, while early AV leaders like Waymo, Cruise, and Aurora continue to lead, a new wave of entrants—AI-first startups and tech-savvy suppliers—is reinvigorating the sector. Despite technical strength in perception and simulation, scaling independently remains difficult due to capital intensity and operational hurdles.

As a result, partnerships with established mobility players are becoming the go-to strategy. Waymo now integrates its Level 4 robotaxis into Uber's app in Austin and Atlanta, while Mobileye partners with Lyft to scale its services. This shift signals a move from standalone AV models to ecosystem-led deployment, combining innovation with fleet access and user reach for faster commercialization.

Fig 1: Uber partnerships with the AV technology providers



Source: Maybank IBG Research, Uber

Fig 2: Level 4 autonomous vehicles - a brief introduction

Level 4 (L4) Commercial Autonomous Vehicles (AVs) are capable of fully autonomous operation within geofenced environments—such as specific urban zones or highways—without human intervention under predefined conditions. These vehicles rely on a fusion of LiDAR, radar, and camera sensors, supported by high-definition 3D maps, SLAM (Simultaneous Localization and Mapping) algorithms, and deep learning perception models for object detection, lane keeping, and dynamic obstacle avoidance. L4 AVs typically use redundant compute systems, like NVIDIA Drive or Mobileye EyeQ, to ensure fault tolerance, and are integrated with V2X (Vehicle-to-Everything) for real-time coordination with infrastructure. Unlike Level 3, L4 vehicles can operate safely without human oversight within their operational design domain (ODD), making them suitable for commercial robotaxi, logistics, and shuttle services, especially in cities with supportive regulatory frameworks and mapped infrastructure.

Source: Maybank IBG Research

China: AV deployment led by national champions but only a moderate risk in medium term

Unlike the US, where tech firms are leaning on platform partnerships, Chinese AV leaders like Baidu are going full-stack and fully owned, integrating software, hardware, mapping, and fleet operations. Baidu's Apollo Go robotaxi service operates driverless rides across multiple cities, including Wuhan, Chongqing, and Beijing, without third-party ride-hailing partners—handling everything from the vehicle platform (Apollo RT6) to the booking app. Apollo Go has completed over 11m robotaxi rides globally by early 2025, surpassing Waymo.

That said, China's ride-hailing is dominated by Didi with a record 33m daily transactions, while Apollo Go remains a niche player with a few thousand rides per month. Scaling to a significant national footprint would require years—Baidu itself expects gradual progress, with cash-flow positive operations projected around 2029-31. In the meantime, Didi is ramping up its AV push—partnering with GAC Aion to mass-produce L4 robotaxis by 2025 and investing in its own full-stack autonomy system—to directly compete with Baidu's Apollo Go.

Other global markets: Mainly through partnerships

South Korea. In 2022, Hyundai Motor Group launched a Level 4 "RoboRide" pilot in Seoul's Gangnam district using two IONIQ 5 EVs integrated with its in-house autonomous stack, operating via ride-hailing startup Jin Mobility's i.M app under government permit. Additionally, Kakao Mobility, dominant in Korea's taxi market via Kakao T, is in talks with Waymo and Baidu to potentially integrate driverless robotaxi services into its platform once relevant regulations allow deployment.

Middle East. The Gulf region has emerged as a global hotbed for robotaxi deployments, attracting Chinese firms and global mobility platforms alike. WeRide has partnered with Dubai's RTA and Uber to launch robotaxi trials in Abu Dhabi, aiming for full driverless service by 2026 and expansion into Saudi Arabia (Riyadh, Al-Ula) by late 2025. Pony.ai has formal agreements with Dubai's RTA and Saudi authorities to test and deploy AV services across the UAE and Saudi Arabia through 2026. Meanwhile, Baidu's Apollo Go has inked partnerships with Autogo in Abu Dhabi and Uber to deploy several hundred autonomous RT6 robotaxis between 2025-28, targeting rapid scale in supportive Middle East markets.

Fig 3: Key AV initiatives in China - not an exhaustive list

Company	AV Focus	Key Partnerships / Vehicles
Didi	Full-stack L4 robotaxi dev	GAC Aion (Andi JV), Valeo, Volvo, BAIC
Baidu (Apollo Go)	Vertically integrated AV fleet	Jidu Auto, Arcfox, Autogo, Uber
Pony.ai	Robotaxi and L4 system developer	Toyota, GAC
WeRide	Robotaxi + mini-bus AV services	Yutong (bus), Renault-Nissan, GAC
T3 Mobility	AV ride-hailing pilot	FAW, Dongfeng, Changan, Huawei (tech)

Source: Maybank IBG Research, Company

Fig 4: Key AV initiatives in Middle East - not an exhaustive list

Company	AV Focus	Key Partnerships
Cruise (GM)	Fully autonomous robotaxi	Dubai RTA, GM, Origin AVs
WeRide	Robotaxis and AV buses	Bayanat, Mubadala, RTA, Uber
Pony.ai	AV fleet expansion & ride-hailing	NEOM Investment Fund, KSA Public Transport Authority
Baidu Apollo Go	Exporting AV service model	Autogo (UAE), Uber
Bayanat (UAE)	Local AV shuttle services	WeRide, Vay (for teleoperation), RTA

Source: Maybank IBG Research, Company

AV ride-hailing vs. traditional: How the models differ?

Traditional ride-hailing platforms are asset-light and operationally lean. Their core function is to match supply (drivers) with demand (riders) through a digital platform. Once the app is built and scaled, the marginal cost of onboarding a new driver or rider is minimal. Drivers bring their own vehicles, handle their own maintenance, and only participate when it's financially worthwhile—often during peak demand hours. The platform simply facilitates transactions, routing, and payments. This model minimises capital expenditure, enabling companies like Uber and Grab to scale rapidly across markets without owning fleets, depots, or repair facilities.

In contrast, AV ride-hailing platforms are infrastructure-heavy and capital-intensive. They must build and maintain not only the digital matching platform, but also the full autonomy tech stack—covering perception, localization, planning, and control—alongside high-performance hardware (e.g., LiDARs, onboard compute, redundant systems). On top of that, operators must own or lease the vehicles themselves and invest in real-world infrastructure: charging and maintenance depots, fleet management systems, remote operation centres, and high-density data centres for training and validation. Maintaining fleet uptime and safety in the absence of drivers adds a layer of complexity and cost that traditional platforms do not face.

Fig 5: Traditional ride hailing vs. AV ride hailing operational comparison

Aspect	Traditional Ride-Hailing	AV Ride-Hailing
Core Platform	Matching & routing app	Matching app + AV software stack
Fleet Ownership	Driver-owned vehicles	Operator-owned autonomous vehicles
Labor Model	Part-time, flexible drivers	No drivers; relies on full fleet uptime
Upfront CapEx	Minimal	High (vehicles, sensors, compute, R&D)
Ongoing Ops	Driver-led	Operator-managed (charging, cleaning)
Infrastructure Needs	Virtually none	Depots, charging stations, control rooms

Source: Maybank IBG Research

That said, given the infrastructure-intensive nature of autonomous vehicle (AV) ride-hailing—requiring significant investments in mapping, edge data processing, fleet operations, and regulatory compliance—a hybrid model is likely to emerge where AV technology providers partner with traditional ride-hailing platforms. AV firms bring the core autonomy stack and vehicle integration capabilities, while incumbents like Uber, Grab, or Didi offer access to demand aggregation, fleet logistics, user bases, and localized operational know-how. This symbiotic model accelerates commercialization by leveraging each party's strengths: AV players scale deployments without building end-to-end platforms from scratch, and ride-hailing firm's future-proof their networks by integrating autonomy without heavy upfront R&D. Discuss in more detail later.

AV unit economics: Already competitive; upcoming tech leaps will drive costs even lower

Given Waymo's commercial operations, we analyse the per mile cost in US which it incurs. Based on data from TARS Group, per mile cost of operating a Waymo car is USD2.31 per mile vs. Uber at USD1.97. This is before the platform costs. For Uber, the bigger component of cost is the driver fee whereas for Waymo it is fleet operations and depreciation costs.

As noted, Waymo's cost of operating an AV fleet is more than USD2/mile. While these figures reflect Waymo's direct hardware and operational costs, they exclude the substantial upfront investments in AV R&D—spanning perception, prediction, planning, control, and full-stack integration required to ensure safe and predictable vehicle behaviour in real-world environments. Additional layers include simulation platforms for training and validation, extensive testing infrastructure, and regulatory compliance. It's not just about today's unit costs—it's about justifying the cumulative investment in years of foundational innovation.

Based on media reports, Waymo has spent USD25-30b in R&D over the years, however, we think other technology providers have spent far less than that. It is uncertain as to how these foundational costs will be recouped as Waymo, in its most established market, San Francisco, only plies 35m miles a year. Assuming that the upfront costs are expensed over 35b miles (100 city rollout over the next 10 years), we estimate R&D costs of USD1.0/mile. This takes per mile cost to USD3.31.

Fig 6: AV unit economics vs. human driven cars in US (USD/per mile)

Cost Driver	Waymo AV	UberX (Human Driver)
Vehicle Depreciation	$0.70	$0.30
Fleet Operations	$1.00	N/A (covered by driver)
Electricity/Fuel	$0.24	$0.20
Insurance	$0.15	$0.15
Maintenance/Cleaning	Included	$0.12
Driver Compensation	N/A	$1.20
Mapping	$0.18	N/A
Taxes	$0.04	N/A or minimal
Total Cost Per Mile	**$2.31**	**$1.97**

Source: Maybank IBG Research, TARS Group

This doesn't include the ride hailing platform-related costs (such as marketing, incentives, payments, customer support, other tech costs) which can be in the hundreds of millions of dollars. While a traditional ride-hailing company also incurs these costs, we note that the relatively well established companies like Uber and Grab have recouped some of the costs over the years due to the large scale of users/operations they have already garnered.

Vision-led autonomy: The scalable, cost-effective future of AV

Autonomous vehicles (AVs) built on vision-based technology stacks—like those from Tesla and Baidu Apollo Go—are proving to be significantly more cost-efficient compared to those relying heavily on expensive LiDAR and radar setups, such as Waymo. The key advantage lies in the simplification of sensor hardware and the growing maturity of AI-driven perception models that mimic human-like driving. Tesla's Full Self-Driving (FSD) system and Apollo Go's latest pure vision architecture have both shown that high-performance autonomous navigation can be achieved with camera arrays, occupancy networks, and neural nets—dramatically lowering bill-of-materials (BOM) and improving scalability.

Baidu's Apollo Go, for example, has demonstrated its sixth-gen robotaxi, the RT6, can be produced at under USD30,000, due in part to the removal of high-cost LiDAR and a shift to vision-only sensing combined with software-based redundancy. Tesla's Dojo supercomputer and Occupancy Network system also show that end-to-end learning models are capable of robust perception using camera-only setups. In contrast, Waymo's multi-sensor system with custom LiDAR and radar units drives vehicle costs well above USD80,000-100,000, limiting its scalability and requiring heavy capex. While LiDAR/radar-based systems offer superior fault tolerance in extreme conditions, the rapid advancement in vision tech—particularly with AI model improvements and cheaper edge compute—continues to narrow this gap.

Fig 7: Comparison: LiDAR/Radar vs. Vision in AV systems

Feature	LiDAR/Radar-Based (Waymo)	Vision-Based (Tesla, Apollo Go)
Sensor Suite Cost	~USD10,000–75,000+	~USD2,000–5,000
Vehicle BOM (Est.)	USD100,000+ (Waymo Jaguar I-Pace)	<USD30,000 (Apollo Go RT6)
Scalability	Limited (cost & maintenance-intensive)	High (mass-producible)
Perception Capability	High, especially in poor visibility	Rapidly improving via AI
Edge Compute Cost	Higher (sensor fusion + data volume)	Lower (camera data + AI model)
Commercial Deployment	Waymo One (limited cities)	Apollo Go (11M+ rides), Tesla FSD beta
Ongoing Breakthroughs	Smaller form-factor LiDAR, sensor fusion	Occupancy Networks, Visual LLMs

Source: Maybank IBG Research, Uber

Standalone AVs are infra-heavy and expensive; strategic partnerships are key to scale

Autonomous vehicle (AV) ride-hailing services require a three-layered operating model, comprising (1) the AV technology stack, (2) the ride-hailing platform, and (3) fleet operation infrastructure. While early AV companies aimed to build end-to-end solutions, the increasing complexity of real-world deployment is driving a clear industry pivot toward strategic specialisation and partnerships. This layered approach is now emerging as the most scalable path to commercialization.

Stack 1 – AV Technology Stack (Autonomy Providers): AV tech players like Waymo, Tesla, and Baidu's Apollo Go are refocusing on their core differentiator: mastering perception, planning, and vehicle integration. Their current priorities include sensor suite consolidation (vision + optional LiDAR), AI-led planning models, and co-developing autonomy-first vehicles with OEMs to ensure better uptime and integration. These players are streamlining their tech platforms to improve per-mile unit economics and are increasingly outsourcing non-core activities like charging, cleaning, and depot operations to external partners.

Stack 2 - Ride-Hailing Platform (Demand Aggregators): Ride-hailing platforms such as Uber, Grab, and Didi provide mature, battle-tested systems for demand generation, real-time dynamic pricing, dispatch, and network balancing. AVs can't reposition themselves or respond to dynamic cues like human drivers do, so these platforms fill a critical gap in predictive demand modeling, fleet pre-staging, and network balancing to prevent idle time or over-concentration. AV tech firms benefit immensely by plugging into these platforms instead of building rider networks, monetization engines, or logistics algorithms from scratch.

Stack 3 - Fleet Operations (Infra Operators): Operational readiness—charging, cleaning, minor repairs, depot throughput—is the new bottleneck to AV scaling. Infrastructure partners act as "fleet anchors," ensuring every vehicle is ride-ready with minimal downtime. These partners manage SLAs, service KPIs, and ground logistics across cities. Without this layer, autonomy stays parked. With it, fleets stay mission-ready and scalable. At scale, this requires training AV-savvy ground teams and integrating closely with both tech and platform providers through shared dashboards and coordinated planning.

Fig 8: AV ride-hailing operating model

Stack	Capabilities	Key Player Role
Autonomy Tech Stack	Perception, planning, vehicle integration, cost-efficient autonomy	Waymo, Tesla, Apollo Go, Pony.ai, WeRide etc
Ride-Hailing Platform	Demand aggregation, pricing, routing, predictive fleet balancing	Uber, Grab, Didi
Fleet Operations	Charging, cleaning, repairs, SLAs, depot management, uptime optimization	Local infra partners, OEM-owned depots,

Source: Maybank IBG Research

While early AV companies aimed to build end-to-end solutions, the increasing complexity of real-world deployment is driving a clear industry pivot toward strategic specialization and partnerships. AV companies that own the tech and plug into mature demand and operational ecosystems can scale faster, reduce capex, and improve per-mile profitability. This layered approach is now emerging as the most scalable path to commercialization.

ASEAN Focus

Singapore's AV ride-hailing unit economics: Competitive at a full utilisation rate

Excluding the foundational cost of developing an AV technology, we estimate AV operational cost in Singapore is already competitive vs. human driven cars at a full utilisation level.

We estimate a driver in Singapore earns ~SGD0.5 per km (USD0.7 per mile). All things equal, an AV car will help to eliminate the driver cost but will add the AV hardware/software cost (depreciation/R&D amortization) and AV fleet operations and maintenance cost (which in a human driven car is borne by the driver).

Based on TARS Group estimates, AV hardware cost per car is USD80,000 which translate to SGD0.2/km (USD0.4/mile). This is based on per day car operations of 212km and amortizing the cost over 10 years. While we struggle to estimate the AV fleet operations and maintenance cost per km, we estimate it to be around SGD0.28 per km (USD0.34 per mile). This is factoring a fleet operations depot of 120k sq feet and requiring 120 personnel to maintain while factoring USD0.17 per mile capital equipment cost (as per TARS Group estimates) to maintain a fleet of 1,000 AVs. Assuming a foundational cost amortisation of USD0.3 per mile, takes total cost of an AV automation of USD0.84 per mile compared to USD0.70 per mile a driver earns in Singapore.

Fig 9: Singapore AV unit economics at full utilisation

AV hardware cost (USD)		Comments
Car operating metrics (at full utilization)		
Net customer kms per day	212	
Operating days per month	25	
Amortization period (years)	10	
AV hardware cost per mile (USD)	**0.20**	AV hardware cost of USD80k as per TARS Group
Fleet operations cost per mile (USD)		
Garage leases	0.09	120k sq ft facility
Personnel	0.08	~120 Staff maintaining 1000 cars
Capital equipment	0.17	Based on TARS group estimates
Fleet operations cost per mile (USD)	**0.34**	
Foundation cost amortization per mile (USD)	**0.30**	
Total AV costs per mile	**0.84**	
Driver cost per mile	**0.70**	**Net driver earning per month of SGD3000**

Source: Maybank IBG Research, Uber

Arguably, the cost of AV hardware, capital equipment (for fleet operations) and foundational costs will come down over the years (read Vision-led autonomy discussion above) while driver costs are likely to increase. As such, we see room for the AV cost per mile to converge with the driver cost in the medium term and eventually improve over the years compared to human-driven rides.

The basic premise here is that the AVs will operate at full utilisation levels. This however is an unrealistic expectation and, as such, remains a key hindrance for a standalone AV business model (discussed further in below sections).

EM ASEAN: Cheap labour costs and road infrastructure makes AV adoption challenging

AV adoption in emerging ASEAN markets faces structural challenges, largely due to low driver labor costs and fragmented road infrastructure. In countries like Indonesia, Vietnam, and the Philippines, average ride-hailing driver earnings range between USD0.2-0.3 per mile, which significantly undercuts the operating costs of AVs and high upfront capital costs – estimated at USD0.7-0.8/mile as discussed above. This makes the business case for automation less compelling in the medium term, as human drivers remain more economical.

Fig 10: Gojek Indonesia – driver per km unit economics (IDR)

Non-Peak Hour		Peak-Hour	Comments
49,500	Trip Price (IDR)	100,500	based on our channel checks
20%	Take Rate Portions	35%	including 11% VAT tax
39,600	Driver's Revenue (IDR)	65,000	Driver's portion of revenue
10.80	Average distance per Trip	18.5	
3,667	Gross Revenue (IDR/km)	3,514	Before take-rate, BlueBird taxi's fare is ~IDR5,400/km
	Costs		
(833)	Petrol (IDR/km)	(833)	Fuel efficiency 12km/liter at IDR10,000
(668)	Depreciation costs (IDR/km)	(668)	Calya price IDR167m, mileage 250,000km
			Tyre price IDR2m/50,000km, Oil Change IDR500,000/5000 km, Fast-moving Spare Parts
(340)	Others (IDR/km)	(340)	IDR2m/10,000km
(1,841)	Cost per km	(1,841)	
1,825	Net revenue per km	1,672	
0.18	**Net revenue per mile (USD/mile)**	**0.16**	

Source: Maybank IBG Research, Uber

Moreover, these markets often lack standardised road conditions, consistent lane markings, and predictable traffic patterns, which are crucial for AV perception and planning systems. Informal driving behaviours, roadside commerce, and mixed-use traffic (bikes, carts, and pedestrians) add further unpredictability. These conditions require either hyper-localised AI training or extensive mapping and localisation layers, increasing the cost and complexity of deployment.

In addition, labour displacement risks are more politically and socially sensitive in the region, where ride-hailing provides income for millions of gig workers. Any move toward automation could trigger regulatory pushback or public resistance unless offset by new job creation in AV fleet operations or tech maintenance. As such, AV adoption in EM ASEAN is likely to follow a gradual, hybrid path, with initial deployments in controlled zones (e.g., airports, business parks) and limited-use cases (e.g., night shuttles), rather than city-wide rollouts.

Implications for Grab?

Grab initiatives in the AV space

Grab has initiated several ambitious AV initiatives in Singapore, cementing its role as both a ride-hailing platform and a burgeoning autonomous mobility operator. In 2025, Grab signed MOUs with four AV technology firms—Autonomous A2Z, Motional, WeRide, and Zelos—to explore driverless vehicle use across buses, shuttles, cars, and bots in ASEAN, focusing on safety, commercial viability, and workforce transition opportunities.

Most notably, Grab and A2Z launched a private autonomous shuttle service for Grab employees in Singapore, connecting its one-north HQ to the MRT station over a 3.9 km route. The retrofit electric shuttle—equipped with 11 sensors including LiDAR, radar, and cameras—underwent 100+ hours of testing and includes trained safety drivers onboard. Employees track shuttle schedules and seat availability via the Grab app, while Grab explores AV safety outcomes and future job training for local drivers

Fig 11: Grab's AV Initiatives in Singapore

Initiative	Partner(s)	Description
Autonomous Shuttle Pilot	A2Z	Electric shuttle connecting one-north HQ and MRT; safety drivers; real-time app tracking; initial off-peak operations (2 hrs/day) with detailed training and monitoring
MoUs with AV Firms	A2Z, Motional, WeRide, Zelos	Evaluating AV applications in mobility and delivery across SEA; focus on safety, economics, job creation, and regulatory collaboration
Food Delivery Robot Pilot (Sentosa)	NCS, Neolix	Outdoor robot delivery on Sentosa beach using AI fleet platform robotmanager; tests unmanned F&B deliveries under 5G network

Source: Maybank IBG Research, Grab, media reports

Grab could play as a platform and fleet operator in the Singapore AV space

Given the likely emergence of a hybrid AV model, Grab is well-positioned to play a dual role across both the ride-hailing platform and fleet operations layers. With its core strength in demand aggregation, dynamic pricing, and dispatch optimization, Grab can seamlessly integrate AVs into its existing mobility network.

More importantly, through Grab Rentals, the company already operates one of Southeast Asia's largest vehicle leasing and fleet management arms—handling onboarding, maintenance, and daily operations at scale. This gives Grab a critical edge in extending its expertise to AV fleet operations, including managing charging schedules, depot throughput, and service readiness.

Supported by a strong balance sheet, Grab also has the financial capacity to invest in the infrastructure-heavy requirements of AV fleet operations, positioning itself as a key orchestration partner in the AV value chain.

Hybrid fleet structure. Grab's future AV operating model is likely to follow a hybrid fleet structure, where autonomous vehicles handle the base layer of predictable, full-time demand, such as airport transfers, business district commutes, and off-peak rides. These routes are well-suited for AVs given their consistent patterns and high utilization potential. Meanwhile, peak and surge demand—often unpredictable and geographically uneven—can continue to be met by human drivers, particularly part-timers or those seeking flexible income opportunities. This dual approach would allow Grab to optimize fleet efficiency, maintain service reliability during spikes, and ensure cost-effectiveness by reducing reliance on full-time human drivers. It also enables a smoother transition toward autonomy without displacing the entire driver network, preserving flexibility and social acceptance.

Financial implications of AV migration on Grab – Blue Sky scenario

It is too early to estimate the potential financial implications of AV adoption on Grab as AV unit economics are still unfavourable to human driven cars in Singapore.

However, over the years, cost of technology will come down, especially if the tech stack moves to vision-driven autonomy (from USD80,000 to USD30,000). We think other tech costs like the foundation cost amortization as well as capital equipment costs at depots are also likely to drop in the same proposition. On the other hand, we estimate driver and other costs to increase at 3-4% per year.

Assuming these parameters, we estimate a cost of running an AV stack (AV tech and fleet operations) to decline to USD0.52/mile by 2030 from USD0.84/mile currently. On the other hand, assuming a 4% driver per mile cost inflation, we estimate driver cost per mile to increase to USD0.85/mile by 2030.

Further assuming that 20% of the Grab Singapore fleet moves to AV, we estimate a net saving of USD71m by 2030. On an NPV basis (at 8% WACC, 5% terminal growth rate), we estimate this to lift our Grab NPV by 7%. Other variables which we haven't considered here include 1) adoption of AV in other comparable markets like Kuala Lumpur, adoption of AV tech in the Deliveries segment, passing on the potential savings to consumers etc.

Fig 12: Financial implications of AV migration on Grab – Blue Sky scenario

AV hardware cost (USD)		2025	2030	Comments
Car operating metrics (at full utilization)				
Net customer kms per day		212	212	
Operating days per month		25	25	
Amortization period (years)		10	10	
AV hardware cost per mile (USD)		**0.20**	**0.08**	Decline by 62% as technology matures and migration to vision based AV autonomy
Fleet operations cost per mile (USD)				
Garage leases		0.09	0.10	3% pa increase
Personnel		0.08	0.10	4% pa increase
Capital equipment		0.17	0.13	Decline by 31% as technology matures
Fleet operations cost per mile (USD)		**0.34**	**0.33**	
Foundation cost amortization per mile (USD)		**0.30**	**0.11**	Decline by 62% as technology matures
Total AV costs per mile	**a**	**0.84**	**0.52**	
Driver cost per mile	**b**	**0.70**	**0.85**	**Increase by 4% pa inline with p2p transport service CPI**
Grab financial implications				
Mobility GMV (USD m)			15,758	
SG mobility GMV (USD m)			3,467	
Per km pricing in Singapore (SGD)			2.2	
Total miles (m)			1,308	
% of moiblity miles on AV			20%	
Mobility miles on AV (m)	**c**		**262**	
PBT saving (USD m)	**d = (b-a)*c**		**86**	
PAT saving (USD m)			**71**	

Source: Maybank IBG Research, Uber

Bottom-line – Opportunities outweigh risks for Grab in the AV world

Grab stands to benefit significantly from the rise of autonomous vehicles, thanks to its early investments and partnerships in AV technology, including collaborations with Hyundai, Motional, and others. As the industry shifts toward a hybrid AV model, where tech companies focus on autonomy stacks and partner with ride-hailing platforms for demand and fleet orchestration, Grab is structurally well-positioned to play a central role. Its strong balance sheet provides the financial firepower to invest in AV fleet infrastructure and absorb potential short-term disruptions from new entrants. Crucially, even if AV technology adoption slows or stalls, Grab retains its core human-driven platform, ensuring limited downside. In essence, the company is leveraged to capture the upside of autonomy, while remaining resilient if timelines stretch—making it a net beneficiary in any AV adoption scenario.

A peep into ComfortDelgro's AV initiatives – Opportunities outweigh risks for Grab in the AV world

ComfortDelgro (CD) has recently launched training & capabilities development initiatives to upskill existing drivers. This will prepare the group for the future of mobility, as the industry evolves and embraces autonomous vehicles (AVs). The first initiative in Singapore focuses on training safety operators for AVs developed by CD's partner Moovita, which operates a fleet of autonomous shuttles in several locations across Singapore.
In the future, the group plans to broaden its training and development initiatives to include cross training programmes that will enable safety operators to work with different types of AV technologies. Moreover, ComfortDelGro will also develop other crucial roles unique to AV operations, such as remote operators, maintenance specialists, data analysts and fleet management positions.
Back in 2022, the group had already established a SGD30m Autonomous Vehicle Centre of Excellence (AV CoE) which focuses on developing capabilities for AV operations, maintenance, and building a technology platform for future AV-based mobility services.

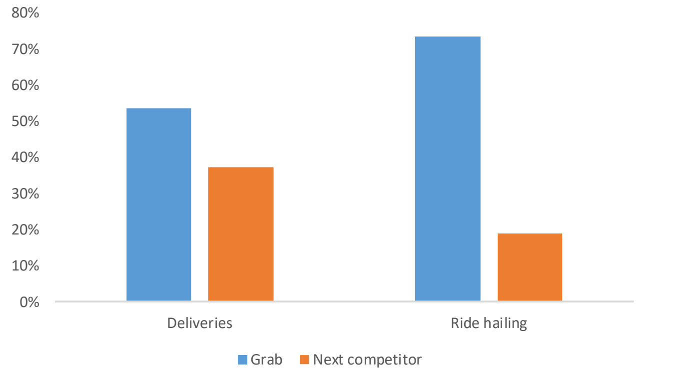
Meanwhile, CD is also developing large-scale robotaxi operation and fleet management capabilities, starting with a two-year pilot beginning Mar 2025 involving 100 robotaxis on trial in Nansha, Guangzhou in China through its collaboration with Pony.ai, a leading autonomous driving technology company. According to management, a successful trial should lead to approval by the relevant authorities for operating robotaxi fleets, hopefully within the next 5 years.

We believe that the adoption of AV technology should help alleviate driver shortage issues and meeting the transport demand of under-served areas. But another consideration is how to price self-driving services so that passengers find it attractive, while ensuring that manned taxis and private-hire cars are not undercut by fares that are too low.

Value Proposition

- Structural growth drivers are in place in an underpenetrated ASEAN market. Grab has leadership position in all the markets it operates in and enjoys structural scale advantage.
- We see mild growth headwinds and monetization pausing owing to: 1) take-rates are already in line-high vs global peers; 2) rising cost/inflation pressures weighing on consumers' discretionary spending and driver-partners' take-home earnings are non-competitive.
- We also see risk of a slight flare-up in competitive intensity with a better capitalized Gojek and XanhSM's entry into multiple markets.

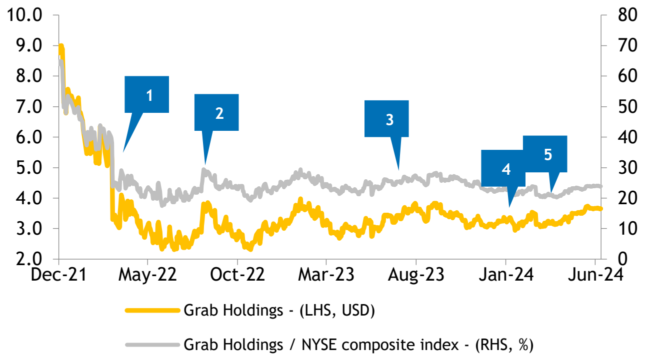
Grab's GMV market share relative to its next competitor



Source: Euromonitor, Momentum Works, Statista

Price Drivers

Historical share price trend



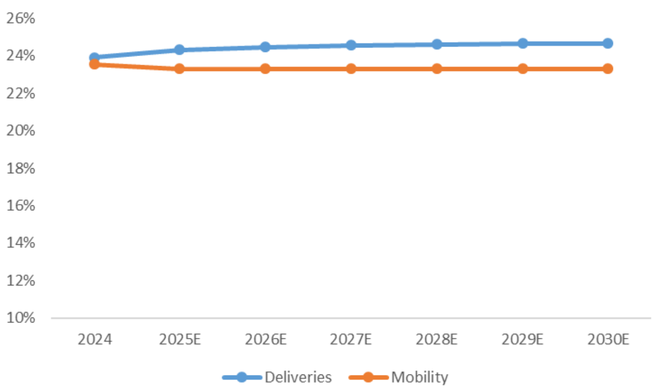
Source: Company, Maybank IBG Research

1. 4Q21 revenue missed consensus expectations and fell 44% due to promotions and driver incentives.
2. 1Q22 results exceeded expectations due to reopening recovery.
3. 2Q23 results exceeded expectations.
4. Share price drops after the FY23 results announcement on the softer-than-expected FY24 growth outlook.
5. Share price recovers after 1Q24 results and EBITDA guidance raised. Improvement in share price after the FY23 results announcement and the softer-than-expected FY24E growth outlook.

Financial Metrics

- We project adjusted EBITDA of USD485m in FY25E reaching USD1.05b in FY27E.
- We forecast 2024-2027E on-demand GMV CAGR of 16% and adjusted net revenue CAGR of 20%
- We expect take-rates to remain relatively stable..

Grab: take-rate assumptions



Source: Company, Maybank IBG Research

Swing Factors

Upside

- Softer-than-expected competition from the entry of XanhSM in Vietnam and Indonesia.
- Better macroeconomy allowing for higher discretionary spending.
- Limited driver-supply pressure leading to continuous reduction in incentives.
- Better-than-expected ecosystem benefits within the financial services segment.
- Easing to monetary policy by the US Fed.

Downside

- Fierce-than-expected competition from the entry of XanhSM in Vietnam and Indonesia.
- Increase in incentives in response to tightening driver-supply.
- Drop in on-demand usage frequency owing to price increases and higher inflation.
- Elevated stake divestment by Softbank Group leading to excess stock liquidity.

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Risk Rating & Score[1]	na
Score Momentum[2]	na
Last Updated	na
Controversy Score[3]	na

Business Model & Industry Issues

- Grab established to be both a viable business while creating a social impact.
- Grab's mobility and delivery businesses are fundamentally sharing economy businesses, which have a positive impact environmentally by reducing car ownership and greenhouse gas emissions.
- As a whole, Grab has been promoting digitisation of businesses and the gig economy, creating livelihoods for people across the region. Notwithstanding, the economic security of gig-workers is likely to continue to be a key social issue.

Material E issues

- Grab reported that it avoided more than 349,986 tonnes of GHG emissions in 2023 and made contributions to reducing congestion in its markets.
- In 2023, 6.3% of all distance travelled was on low or zero emission modes of transport (EVs, hybrid vehicles, cyclists and walkers). Since 2021, Grab has also introduced a carbon offset feature, which allows consumers to contribute USD0.10 per ride to reforestation and conservation efforts in their country.
- Grab signed on to the WWF-Singapore (Plastic Action) Pact in 2020 committing to the 'No Plastic in Nature by 2030' pledge and encouraging the adoption of eco-friendly packaging and reduction of single-use plastics.

Material S issues

- Grab has proliferated the gig economy across the region, opening up new employment opportunities. Notably, 46% of driver-partners did not earn an income before joining Grab and there are 1,100 deaf and physically impaired partners on the platform.
- Grab's promotion of price transparency in ride-hailing has helped to curtail profiteering by unscrupulous taxi drivers.
- On the flipside, gig economy workers are not currently considered as employees under most laws and are not entitled to certain protections, such as for work injury, but legislation to reform this is underway in some markets.
- Grab has aided in F&B establishments and street food sellers/hawkers to digitise in order to survive.
- However, Grab charges up to a 30% commission and requires partners to charge the same price on their platform as their physical stores, which the media reported was resulting in consistent losses for hawkers in Singapore. This situation has been mitigated somewhat through rebates by Grab and the Singapore government since the issue was raised. However, we remain concerned whether these issues will rise again when these rebates are curtailed.

Key G metrics and issues

- The board consists of 7 members, 5 independent and the remaining 2 are co-founder Anthony Tan and Ong Chin Yin. There are 2 women and 5 men on the board.
- There are 2 tranches of shares, with Class B carrying 45 votes and class A shares carrying 1 vote. As of March 2024, Mr. Tan controlled approximately 64.1% of the total voting power of all issued and outstanding ordinary shares voting together as a single class, even though he and his permitted entities only beneficially owned 3.9% of outstanding ordinary shares.
- KPMG is and has been Grab's auditor since 2015.

[1]***Risk Rating & Score*** - derived by Sustainalytics and assesses the company's exposure to unmanaged ESG risks. Scores range between 0 - 50 in order of increasing severity with low/high scores & ratings representing negligible/significant risk to the company's enterprise value, respectively, from ESG-driven financial impacts. [2]***Score Momentum*** - indicates changes to the company's score since the last update - a negative integer indicates a company's improving risk score; a positive integer indicates a deterioration. [3]***Controversy Score*** - reported periodically by Sustainalytics in the event of material ESG-related incident(s), with the impact severity scores of these events ranging from Category 0-5 (0 - no reports; 1 - negligible risks; ...; 5 - poses serious risks & indicative of potential structural deficiencies at the company).

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	Quantitative Parameters (Score: 37)					
	Particulars	**Unit**	**2020**	**2021**	**2022**	**2023**
E	Scope 1	tCO2e	nm	nm	14,913	36,186
	Scope 2	tCO2e	9,414	10,338	51,208	59,090
	Total	**tCO2e**	**9,414**	**10,338**	**66,121**	95,276
	Scope 3	tCO2e	1,475,107	1,489,200	3,317,244	2,382,927
	Total	**tCO2e**	**1,484,521**	**1,493,248**	**3,383,365**	2,478,203
	Total Energy usage	kWh	13,972,485	16,651,127	78,461,833	90,496,000
	Renewable Energy	kWh	0	7,127,538	8,944,649	10,135,552
	Emission per revenue	tCo2e /USDm	NA	2,222	2,366	1,051
	Emission per employee	FTE	NA	169	182	234
	Net water consumption	m m3	NA	NA	NA	NA
	Use of recycled water instead of portable water	m m3	NA	NA	NA	NA
	Waste saved from operation	m tons	571	774	810	NA
	Customer E-waste Recycling	tons	NA	NA	NA	NA
S	% of women in workforce	%	NA	NA	43%	44%
	% of women in management roles	%	NA	NA	34%	36%
	No. of nationalities among employees	number	NA	58	57	56
	Total compensation of women to men	ratio	NA	98%	98%	98%
G	CEO salary as % of net profit	%	Nm	Nm	Nm	Nm
	Key management salary as % of profit	%	Nm	Nm	Nm	Nm
	Independent director on board	%	NA	67%	67%	67%
	Women directors on board	%	NA	33%	33%	33%

Qualitative Parameters (Score: 83)

a) Is there an ESG policy in place and is there a standalone ESG committee or is it part of the risk committee?

The company has various policies covering different aspects of ESG. There are KPIs, business objectives, governance enablers and risks for each of the segments.

b) Is the senior management salary linked to fulfilling ESG targets?

No

c) Does the company follow the task force of climate related disclosures (TCFD) framework for ESG reporting?

Yes

e) Does the company have a mechanism to capture Scope 3 emissions - which parameters are captured?

Yes. Scope 3 includes Purchased Goods & Services, Capital Goods, Business Travel and Use of sold products.

f) What are the 2-3 key carbon mitigation/water/waste management strategies adopted by the company?

The company has initiated various measures to manage carbon emission such as switching to low-emission vehicles, and fully electric vehicles, using renewable energy for Grab's premises, carbon avoidance and removal programmes.

g) Does carbon offset form part of the net zero/carbon neutrality target of the company?

Yes

Target (Score: 60)		
Particulars	**Target**	**Achieved**
Zero Packaging Waste by 2040	0%	
Carbon Neutral by 2040	0%	
More than 4,200 number of partners with disabilities by 2025	4,200	3,184
100% renewable energy by 2030 for all electricity used in premises occupied and under direct control	100%	11%
Increase women in leadership to 40% by 2030	40%	36%
Less than 0.5 accidents per 100,000 trips	0.5	0.08
Impact		
NA		
Overall Score: 46		
As per our ESG matrix, Grab Holding (Grab US) has an overall score of 46.		

ESG score	Weights	Scores	Final Score
Quantitative	50%	0	0
Qualitative	25%	83	21
Target	25%	100	25
Total			**46**

As per our ESG assessment, Grab has established sustainability policies with various time-based targets set for the period. Its quantitative disclosures on 'E' parameters on emissions, resource usage as well as 'S' parameters on workforce and management diversity are robust. Grab's overall ESG score is 46, which makes its ESG rating above average in our view (average ESG rating = 50).

FYE 31 Dec	FY23A	FY24A	FY25E	FY26E	FY27E
Key Metrics					
P/E (reported) (x)	nm	nm	89.5	47.9	30.0
Core P/E (x)	nm	nm	89.5	47.9	30.0
P/BV (x)	2.0	2.9	3.2	3.0	2.7
P/NTA (x)	2.4	3.5	3.8	3.5	3.1
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
FCF yield (%)	0.1	4.1	nm	3.0	4.8
EV/EBITDA (x)	nm	51.8	38.9	23.7	16.3
EV/EBIT (x)	nm	97.6	56.7	30.1	19.5
INCOME STATEMENT (USD m)					
Revenue	2,358.7	2,797.0	3,446.0	4,106.1	4,775.0
EBITDA	(22.0)	313.0	485.0	769.8	1,057.7
Depreciation	(128.0)	(122.0)	(139.1)	(150.3)	(159.6)
Amortisation	(17.0)	(25.0)	(13.6)	(13.6)	(13.6)
EBIT	(167.0)	166.0	332.3	605.9	884.5
Net interest income /(exp)	60.0	81.0	130.3	139.1	140.8
Associates & JV	(56.0)	(14.0)	0.0	0.0	0.0
Exceptionals	(72.0)	(95.0)	(115.0)	(125.0)	(135.0)
Other pretax income	(231.3)	(233.0)	(100.2)	(108.0)	(42.1)
Pretax profit	(466.3)	(95.0)	247.4	512.0	848.2
Income tax	(19.0)	(63.0)	(49.5)	(102.4)	(169.6)
Minorities	51.0	53.0	37.1	29.7	23.7
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	(434.3)	(105.0)	235.1	439.3	702.3
Core net profit	(434.3)	(105.0)	235.1	439.3	702.3
BALANCE SHEET (USD m)					
Cash & Short Term Investments	3,138.0	2,964.0	2,458.5	3,058.4	4,051.9
Accounts receivable	676.0	878.0	1,053.9	1,107.6	1,144.8
Inventory	49.0	59.0	59.0	59.0	59.0
Property, Plant & Equip (net)	512.0	567.0	503.3	427.0	339.9
Intangible assets	916.0	975.0	961.4	947.8	934.2
Investment in Associates & JVs	0.0	0.0	0.0	0.0	0.0
Other assets	3,501.0	3,852.0	3,668.4	3,586.1	3,494.2
Total assets	**8,792.0**	**9,295.0**	**8,704.6**	**9,185.9**	**10,024.0**
ST interest bearing debt	125.0	123.0	123.0	123.0	123.0
Accounts payable	0.0	0.0	0.0	0.0	0.0
LT interest bearing debt	668.0	241.0	241.0	241.0	241.0
Other liabilities	1,531.0	2,580.0	1,792.0	1,863.0	2,023.0
Total Liabilities	**2,324.0**	**2,944.0**	**2,155.7**	**2,227.3**	**2,386.9**
Shareholders Equity	6,449.0	6,399.0	6,634.1	7,073.3	7,775.6
Minority Interest	19.0	(48.0)	(85.1)	(114.8)	(138.5)
Total shareholder equity	**6,468.0**	**6,351.0**	**6,549.0**	**6,958.5**	**7,637.1**
Total liabilities and equity	**8,792.0**	**9,295.0**	**8,704.6**	**9,185.9**	**10,024.0**
CASH FLOW (USD m)					
Pretax profit	(466.3)	(95.0)	247.4	512.0	848.2
Depreciation & amortisation	145.0	147.0	152.7	163.9	173.2
Adj net interest (income)/exp	0.0	0.0	0.0	0.0	0.0
Change in working capital	188.0	843.0	(895.7)	(24.6)	79.2
Cash taxes paid	0.0	0.0	0.0	0.0	0.0
Other operating cash flow	0.0	0.0	0.0	0.0	0.0
Cash flow from operations	86.0	852.0	(392.9)	703.5	1,089.7
Capex	(71.0)	(77.0)	(75.5)	(74.0)	(72.5)
Free cash flow	15.0	775.0	(468.4)	629.6	1,017.3
Dividends paid	0.0	0.0	0.0	0.0	0.0
Equity raised / (purchased)	0.0	0.0	0.0	0.0	0.0
Change in Debt	(572.0)	(429.0)	0.0	0.0	0.0
Other invest/financing cash flow	1,744.0	(496.0)	(37.1)	(29.7)	(23.7)
Effect of exch rate changes	0.0	0.0	0.0	0.0	0.0
Net cash flow	1,187.0	(150.0)	(505.5)	599.9	993.5

FYE 31 Dec	FY23A	FY24A	FY25E	FY26E	FY27E
Key Ratios					
Growth ratios (%)					
Revenue growth	64.7	18.6	23.2	19.2	16.3
EBITDA growth	nm	nm	55.0	58.7	37.4
EBIT growth	nm	nm	100.2	82.4	46.0
Pretax growth	nm	nm	nm	106.9	65.7
Reported net profit growth	nm	nm	nm	86.9	59.9
Core net profit growth	nm	nm	nm	86.9	59.9
Profitability ratios (%)					
EBITDA margin	nm	11.2	14.1	18.7	22.2
EBIT margin	nm	5.9	9.6	14.8	18.5
Pretax profit margin	nm	nm	7.2	12.5	17.8
Payout ratio	0.0	0.0	0.0	0.0	0.0
DuPont analysis					
Net profit margin (%)	nm	nm	6.8	10.7	14.7
Revenue/Assets (x)	0.3	0.3	0.4	0.4	0.5
Assets/Equity (x)	1.4	1.5	1.3	1.3	1.3
ROAE (%)	na	na	na	na	na
ROAA (%)	(4.8)	(1.2)	2.6	4.9	7.3
Liquidity & Efficiency					
Cash conversion cycle	nm	nm	nm	nm	nm
Days receivable outstanding	93.9	100.0	100.9	94.8	84.9
Days inventory outstanding	11.6	12.0	12.9	11.2	10.0
Days payables outstanding	nm	nm	nm	nm	nm
Dividend cover (x)	nm	nm	nm	nm	nm
Current ratio (x)	3.9	2.5	3.6	3.8	4.0
Leverage & Expense Analysis					
Asset/Liability (x)	3.8	3.2	4.0	4.1	4.2
Net gearing (%) (incl perps)	net cash	net cash	net cash	net cash	net cash
Net gearing (%) (excl. perps)	net cash	net cash	net cash	net cash	net cash
Net interest cover (x)	2.8	na	na	na	na
Debt/EBITDA (x)	nm	1.2	0.8	0.5	0.3
Capex/revenue (%)	3.0	2.8	2.2	1.8	1.5
Net debt/ (net cash)	(2,345.0)	(2,600.0)	(2,094.5)	(2,694.4)	(3,687.9)

Source: Company; Maybank IBG Research

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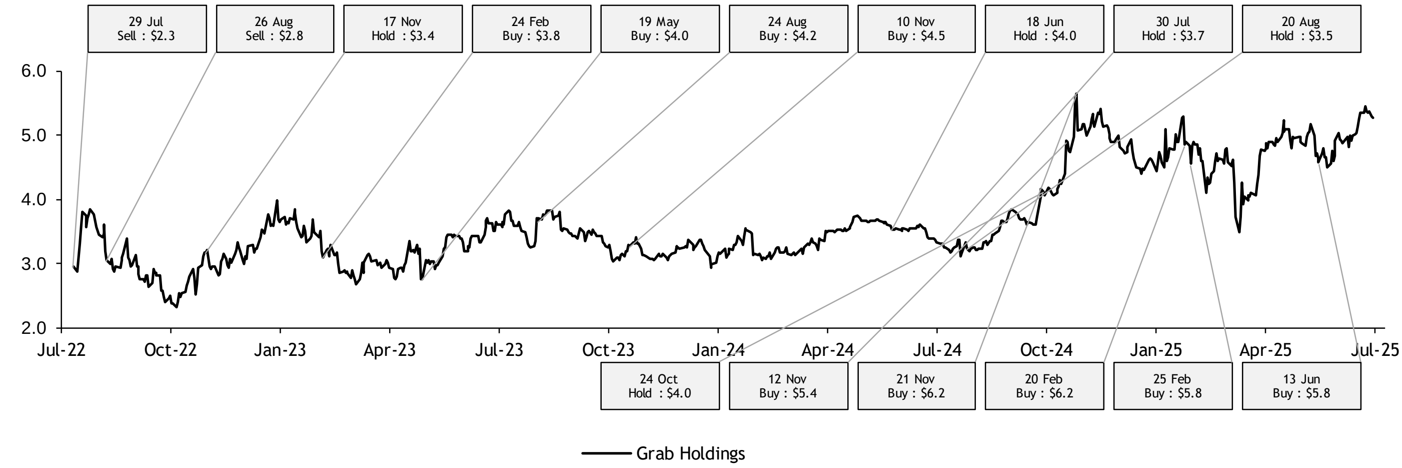
Historical recommendations and target price: Grab Holdings (GRAB US)



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