



# FIN3716

Financial Modelling

Project 1

*Valuation and Analysis of Grab Holdings Limited (NASDAQ: GRAB)*

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## **1. Introduction to Project**

The Covid-19 pandemic has accelerated the adoption of digital platforms and services, and ride-hailing and delivery giant Grab is no exception. With a presence in eight countries across Southeast Asia, Grab has become an essential part of the lives of millions of users as a key player in the region's gig economy. In recent years, Grab has expanded its business model to include financial services, such as GrabPay and GrabFin, further establishing its position as a leading super app. This report will provide an in-depth analysis of Grab's financials, exploring the key drivers of revenue growth, its profitability, and the key challenges it faces in sustaining its business in the current economic environment. While Grab has demonstrated strong revenue growth in recent years, it faces significant challenges in maintaining its profitability in this highly dynamic market. Through our detailed findings on Grab Holdings Inc. (NASDAQ: GRAB) in this report, our group will determine whether Grab's share price presents a valuable investment opportunity. Our analysis will include an Excel Financial Model with a detailed breakdown of revenue and expense items and the different business segments.

### **1.1 Business Segments**

Grab is a leading Superapp in South-East Asia that positions itself to address their consumers' needs by offering an ecosystem of services: Deliveries, Mobilities, and Financial Services, and is also dedicated to investing in their Enterprise and New Initiatives. They have tailored their app such that it is modular and scalable across the region without compromising on local optimization.

#### **1.1.1 Deliveries**

Grab's deliveries business segment comprises of "GrabExpress", "GrabFood", "GrabKitchen" and "GrabMart", where they offer package delivery, food delivery, goods delivery services and their respective delivery booking services. Grab faces competition from regional players such as FoodPanda, ShopeeFood and GoFood by Gojek, as well as other single market players in their key markets such as Deliveroo, Baemin, LineMan in Singapore, Vietnam and Thailand respectively. Their key strategy moving forward is to drive high-quality growth through high-quality transactions with GrabUnlimited and improve operational efficiencies.

#### **1.1.2 Mobilities**

Grab's mobility segment was Grab's main business segment when it first began as a taxi-booking mobile app before branching out into other business segments. Currently Grab provides a service which connects millions of passengers in Southeast Asia with private hires, taxis and coach drivers when the users input their location and destination in the app for a fare.

Such services include their everyday options "JustGrab", "GrabHitch", "GrabCar" where customers can choose which rides best suits their needs based on the urgency and the price willing to spend on the ride themselves. Grab also offers premium services where users will be able to get the privilege to ride in high-end cars which normal taxi services are unable to provide.

### **1.1.3 Financial Services**

Not only does Grab offer delivery and mobility services, but they also offer financial services to consumers, drivers and businesses as well. For their consumers, “GrabFin” offers a variety of services including payments, lending, insurance and investment products. Examples of their payment services will include the GrabPay Wallet as well as the GrabPay Card where consumers may be able to use their services in their daily life to settle their payments.

For the drivers who are employed by Grab, they also are exposed to services to better help them in their job such as their fuel cards to get discounts on their fuel prices and covering themselves with insurances not only for critical illnesses but also vehicle insurances.

For businesses, Grab merchant-partners will be able to get loans from Grab to fund their daily operating costs with automated daily repayments which help makes loans very manageable for small businesses. Businesses may also use Grab as a payment option at their stores by allowing their consumers to use “GrabPay” and “PayLater”. Moreover, adoption of Grab financial services is compatible with the Southeast Asian top payment technologies.

### **1.1.4 Enterprise and New Initiatives**

Grab’s Enterprise and New initiatives arm offers a range of services such as GrabAds, GrabGifts, GrabExpress, GrabDefence, GrabHealth, GrabWheels, and more recently GrabMaps. GrabExpress is a logistic platform that enables businesses to deliver their products to customers whereas GrabHealth is a platform that provides online healthcare services. These services introduced by Grab also provide advertising and marketing solutions, and anti-fraud offerings to Grab’s partners. For example, GrabAds is an advertising platform that allows businesses (such as business partners from GrabFoods and GrabMart) to reach customers through targeted ads.

The Enterprise and New Initiatives segment has significant growth potential for Grab as it expands the company’s offerings beyond traditional ride-hailing and delivery services. For example, (pluck in data from AR). However, despite its potential for growth, Grab faces several challenges and risks. The competition in the logistics and healthcare markets is intense with established players vying for market share. Regulatory risks in areas of data privacy make it difficult for Grab to establish its market position.

## **1.2 Key Assumptions in the following Financial Model**

We have derived the Commission Rates, Partner's incentives, and Consumer's incentives and assume these parameters will stay constant in our financial analysis below.

## 2. Financial Modelling By Parts: Revenue

### 2.2 Projected Growth of Deliveries' GMV

Projected Growth in Grab's Market Share in South-East Asia Deliveries Market										
	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Grab's Market Share %	47.8%	54.8%	61.8%	68.8%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%

Figure 1: *Projected Growth in Grab's Market Share in Online Food Deliveries in South-East Asia from FY2022 to FY2031*

To forecast the projected Growth of Grab's Deliveries' GMV, we assumed that it would grow proportionately to the Market Segment's Revenue multiplied by the Market Share they are expected to command. There is fierce competition between the top 3 incumbent firms in the South-East Asia Delivery Market that make up 84.8% of the market share, with "GrabFood" leading the market with a market share of 47.8% (TechinAsia, 2022). The ability to tap into growth prospects in the market is contingent on Grab's ability to enable value chain integration (Frost & Sullivan, 2022). In this aspect, Grab is well-positioned to capture the market as they leverage on their ecosystem in the region and as smaller competitors like "ShopeeFood" continue to scale back on operations in the competitive environment (Loh, 2023). The Market projects an exponential increase in market share at a flat rate of 7% till 70% from FY2022 to FY2026 in Figure 1. The Market holds an optimistic view of Grab's Forecasted Market share assuming it can capitalize on their ecosystem and retain their large base of loyal partners. 70% would be the most optimistic market share Grab can attain in the market, with niche competitors holding the other 30% (Safferstone, 2002). Hence, Grab would focus on retaining Market Share of 70% beyond FY2026 in Figure 1.

Projected FCF for Online Food Deliveries in South-East Asia from 2022F to 2031F												
M (USD)												
		2021A	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Revenue	Singapore	63.54	72.2	84.53	97.22	109.7	121	130.7	139	147	207	222
	Indonesia	487.3	671.5	929.5	1231	1556	1860	2121	2353	2553	2715	2909
	Vietnam	75.72	103.9	140	176.5	210.6	239.2	261.6	279	293	298	320
	Malaysia	126	163.2	202.6	243.6	283.9	319.7	351.2	379	403	469	502
	Thailand	130.5	162.2	211.4	261.3	309.8	353.7	391.2	423	450	466	499
	Cambodia	69.89	85.72	108.3	140.9	186.7	218.7	253.7	291	331	325	348
	Philippines	1408	1590	1950	2365	2799	3211	3572	3910	4222	4568	4893
	Total	2361	2849	3626	4516	5456	6323	7081	7775	8398	9048	9693
	GMV Growth Rate (Total)											
		21%	27%	25%	21%	16%	12%	10%	8%	8%	7%	

Figure 2: *Projected Revenue Cash flows for Online Food Deliveries in South-East Asia from FY2022 to FY2031*

The Market Share of South-East Asia's Online Food Delivery Revenue is expected to grow from FY2022 to FY2027 as seen in Figure 2 (Statista, 2017).

Derivation of Deliveries' Revenue for 2030F				
	Change in Revenue in each country from 2027-2030	Weight (by Revenue in FY2022)	Total Revenue (exc. Indonesia & Cambodia)	2091.5
<b>Singapore</b>	58.7%	0.035	Weighted Ave. Change in Revenue	28%
<b>Vietnam</b>	14.1%	0.050		
<b>Malaysia</b>	33.5%	0.078		
<b>Thailand</b>	19.1%	0.078		
<b>Philippines</b>	27.9%	0.760		

Figure 3: Weighted average Change in Revenue for Indonesia and Cambodia from FY2027 to FY2030

Beyond 2027, we forecasted the Revenues for FY2028, FY2029 and FY2030 using CAGR. The South-East Asia Online Food Delivery Market has a CAGR of 14.1% from FY2022 to FY2030 (TechinAsia, 2022), from which we derived the FY2030 Revenues. Indonesia and Cambodia are currently in the nascent stage of digitalization, whereby the citizens are technologically-savvy but there is a low internet penetration rate (McKinsey, 2016). Grab is a leading firm in the industry and has a growing ecosystem, thus it is well positioned to experience higher than forecasted growth in these countries. We calculated the Weighted average change in Revenue from FY2027 to FY2030 across Singapore, Vietnam, Malaysia, Thailand and Philippines to be 28% in Figure 3 and forecasted the FY2030 Revenues for Indonesia and Cambodia to be 2715 and 325 Million USD respectively in Figure 2.

Derivation of FCF for 2028F and 2029F								
		2023F	2024F	2025F	2026F	2027F	2028F	2029F
YoY%	Singapore	17.08%	15.01%	12.84%	10.30%	8.02%	6.64%	5.51%
	Indonesia	38.42%	32.44%	26.40%	19.54%	14.03%	10.93%	8.52%
	Vietnam	34.74%	26.07%	19.32%	13.58%	9.36%	6.75%	4.87%
	Malaysia	24.14%	20.24%	16.54%	12.61%	9.85%	7.88%	6.30%
	Thailand	30.33%	23.60%	18.56%	14.17%	10.60%	8.15%	6.27%
	Cambodia	26.34%	30.10%	32.51%	17.14%	16.00%	14.74%	13.57%
	Philippines	22.64%	21.28%	18.35%	14.72%	11.24%	9.47%	7.97%
% change in YoY % Change	Singapore	-12.09%	-14.49%	-19.76%	-22.18%	-17.13%	-17.13%	
	Indonesia	-15.58%	-18.61%	-26.00%	-28.18%	-22.09%	-22.09%	
	Vietnam	-24.96%	-25.90%	-29.71%	-31.04%	-27.90%	-27.90%	
	Malaysia	-16.18%	-18.25%	-23.78%	-21.86%	-20.02%	-20.02%	
	Thailand	-22.18%	-21.37%	-23.65%	-25.18%	-23.10%	-23.10%	
	Cambodia	14.27%	7.99%	-47.27%	-6.63%	-7.91%	-7.91%	
	Philippines	-6.00%	-13.77%	-19.79%	-23.62%	-15.80%	-15.80%	

Figure 4: Percentage Change in YoY Revenue from FY2023 to FY2029 and Corresponding Percentage Change in YoY Growth

To derive the FY2028 and FY2029 Deliveries' Revenue, we calculated the Year-On-Year Percentage Change in Deliveries' Revenue from FY2023 to FY2027 and the corresponding Percentage change in Year-On-Year Deliveries' Revenue Growth from FY2023 to FY2027 as seen in Figure 4. The Percentage change in Year-On-Year Deliveries' Revenue Growth from FY2027 to FY2029 is taken to be the average of that from FY2023 to FY2027. The Year-On-Year % Growth in Deliveries' Revenue for each country from FY2027 to FY2029 is calculated by multiplying the previous year's Year-On-Year % Growth in Deliveries' Revenue by (1+ the corresponding year's Percentage change in Year-On-Year Growth). The derived Year-On-Year Growth in Revenue is growing at a decreasing rate as expected for each country as the market matures and the competition remains fierce with 84.8% of the market dominated by 3 Service Providers (Lih, 2022). Through the derivation of the forecasted Year-On-Year Growth for each country from FY2027 to FY2029, the Revenue of each country in FY2028 and FY2029 can be calculated.

As stated in the project's guidelines, we expect Grab's Deliveries to reach stable growth rate in FY2031. Given an average Inflation rate of 2.6% and average Real GDP Growth Rate of 4.5% across the countries they are operational in (EuroMonitor, n.d.), our calculated growth rate is 7%. This gives us the forecasted FY2031 Online Food Delivery Revenue for the key markets.

We calculated the Total South-East Asia Deliveries' Revenue Cash Flows from FY2022 to FY2031 in Figure 2, deriving the Year-On-Year Change in South-East Asia's Deliveries' Revenue from FY2021 to FY2031 in Figure 4.



GMV Growth	2019A	2020A	2021A	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Deliveries	0	86%	56%	10%	15%	15%	14%	11%	8%	7%	6%	5%	5%

Figure 5: *GMV Growth of Deliveries from FY2019 to FY2031*

As stated above, we assume the Commission rate is relatively constant throughout the financial years since Grab has a dominant market share and is unlikely to decrease their Commission rate. Thus, Grab's Deliveries' GMV Growth Rate will be linearly related to the Market Segment's Revenue Growth Rate multiplied by the Market Share Grab holds. The GMV Growth from FY2022 to FY2031 is then forecasted to be 10% to 5% in Figure 5.

The GMV Growth rate of Grab's Deliveries' Segment was relatively high from FY2019 to FY2021 in Figure 5 and was attributable to the demand boom during the COVID-19 pandemic whereby the key markets that Grab Delivery operated in were under strict lock-down. Many turned to "GrabFood" and "GrabMart" for daily necessities and food. This surge in demand was fueled by the large Consumer Incentives as a % of Deliveries GMV consumers from FY2019 to FY2021. As Lock-down restrictions ease in 2022, we expect the exponential demand for "GrabFood" to cool with consumers switching to dining in traditional restaurants instead (Reuters, 2022). GMV Growth of Deliveries will slow and stabilize in FY2031 at 5% as in Figure 5.

### 2.3 Projected Growth of Mobility's GMV

<b>CAGR</b>	23.7%
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Ride Hailing Market Size ('M USD)											
	2021A	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Indonesia	854	1,373	2,354	3,299	4,366	5,206	6,424	7,581	8,599	9,512	10,378
Malaysia	381	602	952	1,231	1,517	1,805	2,123	2,435	2,721	2,978	3,229
Philippines	173	276	369	519	704	841	1,039	1,233	1,410	1,580	1,749
Singapore	1,735	2,535	3,208	3,768	4,296	4,783	5,331	5,829	6,271	6,666	7,047
Thailand	233	350	687	1,020	1,496	2,098	2,767	3,477	4,087	4,549	4,974
Vietnam	441	662	1,003	1,369	1,772	2,211	2,747	3,279	3,783	4,242	4,698
<b>Total Market Size</b>	3,817	5,798	8,574	11,206	14,151	16,944	20,431	23,833	26,870	29,526	32,074
<b>Grab's Market Share</b>	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%
<b>Growth</b>		40%	37%	24%	20%	15%	16%	13%	10%	8%	7%

Figure 6: *Projected Growth of Market Size for Ride-Hailing Services in Regions Where Grab Has Presence in between 2021 to 2031*

The mobility segment, in particular the ride-hailing services, has been severely impacted by the Covid-19 pandemic (Shu, 2020) which saw a decline in GMV based on Grab's Annual Report for FY 2021. However,

as more people are getting vaccinated and herd immunity is increasing (Charumilind et al, 2021), the demand and market size for ride-hailing services is predicted to greatly increase between 2022 to 2028 before growth begins to start slowing down. According to Euromonitor, the market size for ride-hailing services in which Grab currently has a presence in (with the exclusion of Cambodia), is expected to grow at a CAGR of 23.72% between 2021 to 2031.

<b>Weighted Market Share</b>				
Country	Revenue	% Weights	% Market Share	Weighted Market Share
Singapore	283	41.9%	74%	31%
Malaysia	108	16.0%	94%	15%
Philippines	81	12.0%	91%	11%
Thailand	76	11.3%	80%	9%
Rest of SEA (Indonesia, Cambodia and Vietnam)	127	18.8%	63%	12%
<b>Total</b>	<b>675</b>	<b>100.0%</b>		<b>78%</b>

Figure 6.2: *Weighted Market Share*

To obtain the actual proportion of growth of Grab in the mobility segment, we used the current market share of Grab in each of the respective countries multiplied by the weights of each country based on revenue to obtain a weighted average market share of 78% in the region. As 78% market share represents a sizeable amount of the market, we assume that Grab would focus on retaining their market share throughout the forecast period. Furthermore, commission rates are assumed to remain relatively constant throughout the forecast period as such, the growth in Grab's Mobility's GMV will grow at the same rate as the rate of growth of the ride-hailing services market in the region.

## 2.4 Projected Growth of Financial Services' GMV

When looking at the projected growth of the financial services of Grab, we first scraped Euromonitor from 2019 to the latest forecasted data available on the revenue obtained from the financial services provided in the following 6 countries where Grab operates in: Indonesia, Malaysia, Philippines, Singapore and Vietnam. Although Grab also operates in Cambodia and Myanmar as well, there was little data on their financials available on Euromonitor due to various reasons such as the military coup in Myanmar. However, we have deemed it sufficient that the data that we have extracted would be more than enough to support our theories as the data we have obtained are from countries that Grab has a strong presence in.

We took a look at the following categories of financial services provided: card transactions, non-card transactions, commercial payment transactions, and personal payment transactions.

Geography	Category	Unit	2019	2020	2021	2022	2023	2024	2025	2026	2027
Indonesia	Total of the 4 Categories	USD million	1,881,036.30	1,872,703.70	1,971,733.40	2,049,297.60	2,217,929.90	2,419,459.70	2,628,971.00	2,837,761.90	3,062,019.30
Malaysia	Total of the 4 Categories	USD million	1,811,111.10	1,667,235.90	1,791,209.60	1,893,012.70	2,051,560.90	2,230,507.50	2,430,546.10	2,659,687.20	2,921,285.90
Philippines	Total of the 4 Categories	USD million	993,487.70	949,749.40	1,032,363.20	1,105,986.60	1,203,997.00	1,297,577.00	1,388,532.80	1,486,208.90	1,592,979.80
Singapore	Total of the 4 Categories	USD million	332,862.10	267,762.40	280,873.90	291,601.70	309,845.00	323,859.80	337,673.10	348,731.90	360,519.00
Thailand	Total of the 4 Categories	USD million	908,528.60	889,927.10	913,590.50	941,811.60	986,036.90	1,024,124.10	1,057,346.50	1,091,757.60	1,128,005.80
Vietnam	Total of the 4 Categories	USD million	685,151.10	712,336.50	727,169.20	754,678.40	813,310.30	873,096.20	939,632.80	1,011,885.70	1,091,290.20
Total	Total of the 4 Categories	USD million	6,612,176.90	6,359,715.00	6,716,939.80	7,036,388.60	7,582,680.00	8,168,624.30	8,782,702.30	9,436,033.20	10,156,100.00

Figure 7: Projected Growth of Market Size for total transactions for financial services in Regions Where Grab Has Presence in between 2019 to 2027

We took the sum of the four categories and total it to form the total revenue brought in in Southeast Asia to find the growth rate for each year till 2027. Following that, we took the proportion of what Grab holds over the E-wallet industry to justify their market size in the financial service industry. We worked backwards to find out the total size of the E-wallet industry and projected its growth using the CAGR found from the growth of the financial service industry from 2019 to 2027.

For the final step we calculated the percentage change of Grab E-wallet industry and assumed it to be their growth rate of their financial services due to the potential revenue it may bring in as more wallets equals more users which results in more revenue. We also see Grab maintaining dominance over the e-wallet industry and we increased their dominance of 23% of the market to an eventual 33% market dominance by 2030 and accounted that into our growth rates.

Year	E-wallet Market Size	Grab's Share of the E-wallet industry (%)	Grab's Share of the E-wallet industry (\$)	(%) change	(%) change rounded
2021	19960.87	0.23	4591.0001		
2022	20935.75529	0.24	5024.58127	0.094441551	9%
2023	21958.2538	0.25	5489.56345	0.092541479	9%
2024	23030.69096	0.26	5987.979649	0.090793412	9%
2025	24155.50575	0.27	6521.986552	0.089179813	9%
2026	25335.25629	0.28	7093.871762	0.087685739	9%
2027	26572.62564	0.29	7706.061435	0.086298385	9%
2028	27870.42788	0.3	8361.128365	0.08500671	9%
2029	29231.61455	0.31	9061.800511	0.083801147	8%
2030	30659.28133	0.32	9810.970027	0.082673362	8%
2031	32156.6751	0.33	10611.70278	0.081616064	8%

Figure 8: Projected Growth of Grab's financial services in Regions Where Grab Has Presence in between 2019 to 2027

## 2.5 Projected Growth of Enterprise and New Initiatives' GMV

In FY21, this enterprise segment contributed 6% of the business revenue. A significant portion of the revenue from this enterprise segment comes from their advertising and marketing commission through GrabAds offerings. Grab launched a new enterprise service in 2020 known as GrabMaps, tapping into the US\$1 billion mapping and location-based service market in Southeast Asia (SEA) according to Maybank Analysts. It is recorded in 2022 that GrabMaps is currently used in 7 out of the 8 countries Grab is operating in. The mapping and location service provided by GrabMaps include routing, estimating a more accurate time of arrival, distance from passenger, and more accurate point of interest data set. Additional information on the toll gantries, speed limits, turn restrictions, and high-resolution street level imagery are part of the offering. Grab is also expected to monetise this service in the near future with B2B service, ensuring an

additional stream of income for the company. Maybank analysts estimate the opportunity for GrabMaps to be \$1 billion, where Grab aims to achieve 10% of the market share by 2025 (\$0.1 billion). Based on this assumption, our group forecasts Grab's Enterprise and New incentives' GMV to increase by about 33 million higher on average each year from FY23 to FY25. From FY25 onwards, the growth rate is assumed to remain constant at 11.8%.

GMV Growth	2019A	2020A	2021A	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Enterprise and New incentives		389%	248%	40%	15%	13%	12%	12%	12%	12%	12%	12%	12%

Figure 9: *Projected GMV Growth for Enterprise and New Incentives*

## 2.6 Cost of revenue analysis

To accurately evaluate Grab's Cost of Revenue, we will be using Grab's Gross Revenue instead of Net Revenue in our calculation. The Gross Revenue figure includes all sales made by the company before any of the incentives are taken into account. Whereas Net Revenue calculation excludes any discounts and incentives given. When calculating Cost of Revenue margin, it is important to determine the profitability of the goods or services sold by the company, regardless of whether they were sold at a profit or a loss. By calculating Cost of Revenue by Gross Revenue, we can accurately determine the percentage of each dollar of sales revenue that is consumed by the direct costs of producing and selling the goods or services. This helps us to understand the efficiency and profitability of the company's operations.

Partner's and Consumer's incentives were derived to tie again the Net Revenue for each operating segment from FY2019 to Q3FY2022 that was reported in Grab's Annual and Quarterly reports. These parameters were assumed to be kept constant because Grab is a super-app with a dominant presence in their respective operative segments. In SEA, Grab's deliveries segment has a leading market share of 47.8% (TechinAsia, 2022), its mobility segment has a market share of 77.3% (Statista, 2021), and its Digital Wallet payment accounts for 23% of the market share (Grab, 2020). Assuming these parameters remain constant, GMV growth will therefore be linearly related to its revenue growth.

	Historical						Forecasted											
	FY19	FY20	FY21	Q1FY22	Q2FY22	Q3FY22	Q4FY22	FY22F	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	
Total GMV	12,250	12,492	16,061	4,805	5,056	5,080	3,381	18,322	21,556	24,871	28,433	31,699	34,993	38,080	40,870	43,544	46,172	
Total Incentives	2,351	1,237	1,782	560	523	476	457	2,024	2,228	2,430	2,609	2,706	2,747	2,726	2,645	2,525	2,368	
Partner's Incentives	1,234	621	717	216	212	199	208	992	1,089	1,192	1,284	1,337	1,363	1,359	1,327	1,278	1,213	
Consumer's Incentives	1,117	616	1,065	344	311	277	249	1,032	1,139	1,238	1,325	1,369	1,384	1,367	1,318	1,247	1,155	
Total Incentives for Deliveries % of GMV	7.84%	7.23%	8.73%	8.72%	7.54%	6.81%	19%	16%	15%	14%	13%	12%	11%	10%	9%	8%	7%	
Total Incentives for Mobility % of GMV	9.28%	2.01%	1.22%	1.73%	1.56%	1.50%	9%	8%	8%	7%	7%	6%	6%	5%	5%	4%	4%	
Total Incentives for Financial Services % of GMV	2.10%	0.66%	0.50%	0.48%	0.54%	0.47%	-6%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	

Figure 10: *Incentives Breakdown*

The historical cost of revenue was adjusted for depreciation and impairment loss to improve the accuracy of the analysis and forecast. We will be using the year-on-year (YoY) change method to track the change in Cost of Revenue as a percentage of Gross Revenue. The average percentage change over FY2020-2022 was 7.02%. It means that based on historical average, the Cost of Revenue as a percentage of Gross Revenue improves by 7.02% i.e., Cost of Revenue as a percentage of Gross Revenue decreases. However, our forecast for the ratio in FY23 remains unchanged from FY22. This is because our Group is taking a prudent stance in analysing Grab's financials as the company as Capital Expenditure is expected to be high during the first few years before gradually decreasing. Every subsequent forecasted year, the ratio will improve by 0.5% on a YoY basis with reference to the Annual Report as well as our understanding that operation costs is bound to increase along with the company's growth as they broaden their offerings and scale up their operations. Therefore, Cost of Revenue is expected to taper down as a percentage of Revenue as Grab becomes more efficient in its business operation. Grab's Gross Margin was then calculated based on the forecasted Cost of Revenue (with reference to Figure 10)

	FY20	FY21	FY22F	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
<b>YoY % of Cost of Revenue</b>	24.45%	12.60%	-16.00%	<b>Forecasted Improvement</b>								
<b>Average Improvement over 3 Periods</b>			<b>7.02%</b>	0.00%	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%

Figure 11: YoY Change in Cost of Revenue % Gross Revenue

	FY19	FY20	FY21	Q1FY22	Q2FY22	Q3FY22	Q4FY22	FY22F	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Net Revenue	-845	469	675	228	321	382	421	1,352	2,030	2,780	3,672	4,376	5,149	5,930	6,692	7,459	8,250
Gross Revenue	1,506	1,706	2,457	788	844	858	878	3,376	4,258	5,210	6,281	7,082	7,896	8,656	9,337	9,984	10,619
Total Incentives	-2,351	-1,237	-1,782	-560	-523	-476	-457	-2,024	-2,228	-2,430	-2,609	-2,706	-2,747	-2,726	-2,645	-2,525	-2,368
Cost of Revenue	-673	-576	-725	-276	-300	-283	-293	-1,004	-1,315	-1,599	-1,905	-2,100	-2,274	-2,402	-2,477	-2,512	-2,514
Cost of Revenue as % of Gross Revenue	44.69%	33.76%	29.51%	35.03%	35.55%	32.98%	33.36%	34.23%	34.23%	34.06%	33.72%	33.21%	32.55%	31.73%	30.78%	29.70%	28.52%
Gross Margin							66.64%	70.25%	69.12%	69.31%	69.66%	70.34%	71.20%	72.25%	73.47%	74.83%	76.32%

Figure 12: Forecasted Gross Margin Growth

### 3. Financial Modelling By Parts: Expenses

#### 3.1 Forecasted General and Admin Expense

Forecast for General & Admin Expenses								
	FY19	FY20	FY21	Q1FY22	Q2FY22	Q3FY22	Q4FY22	FY22
Net Revenue	-845	469	675	228	321	382	538	1,469
Gross Revenue	1,506	1,706	2,457	788	844	858	1,174	3,672
General & Admin as % of Gross Revenue	20.2%	19.1%	22.2%	21.4%	19.2%	17.5%	19.4%	19.4%

Figure 13: General & Admin Expense as a % of Gross Revenue from FY2019 to Q4FY2022

We calculated the General & Admin (G&A) Expense as a Percentage of Gross Revenue from FY2019 to FY2022Q3, taking the average of that from FY2022Q1 to FY2022Q3 at 19.4% to be the G&A % of Gross Revenue in FY2022Q4. The G&A as a % of Gross Revenue is also derived by taking the average of the 4 quarters in FY2022 in Figure 9.

Technology Industry Market Leaders Expenses as a % of Gross Revenue				
Company	Market Cap in USD	% Weights	Sales, Marketing, General & Admin Expense	R&D Expense
Apple	2,419,332,200,000	43.84%	6.4%	6.7%
Microsoft	1,881,039,500,000	34.09%	14.0%	12.4%
Alphabet	1,217,899,600,000	22.07%	14.1%	12.3%
Total	5,518,271,300,000			
Weighted Expenses			10.7%	9.8%

Figure 14: Industry Leaders' Sales, Marketing, General & Administrative Expenses and R&D Expenses as a % of Gross Revenue

The Sales, Marketing and G&A Expenses as a % of Gross Revenue of the Tech Industry Leaders: Apple, Alphabet and Microsoft (Forbes, 2022), above were pulled from their Annual Reports. We calculated the Weighted Average by Market Capitalization Sales, Marketing and G&A Expenses to be 10.7% in Figure 11.



Forecast for General & Admin Expenses									
	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Net Revenue	2,402	3,512	4,888	6,064	7,390	8,766	10,134	11,544	12,973
Gross Revenue	5,058	6,615	8,391	9,839	11,341	12,785	14,109	15,403	16,639
General & Admin as % of Gross Revenue	18.71%	18.08%	17.46%	16.86%	16.29%	15.73%	15.20%	14.68%	14.18%
Forecasted Growth	-3.41%	-3.41%	-3.41%	-3.41%	-3.41%	-3.41%	-3.41%	-3.41%	-3.41%

CAGR	-3.41%
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Figure 15: Forecasted General & Admin Expenses as a % of Gross Revenue and the corresponding Growth Rate from FY2023 to FY2031

We forecasted the growth in G&A Expense as a Percentage of Gross Revenue from FY2023 FY2031 using CAGR. As stated above, G&A Expense as a Percentage of Gross Revenue is expected to decrease, tapering towards that of the Industry leaders as they reach a stable state. Therefore, we calculated CAGR with the Final Value in FY2031 to be the G&A as a Percentage of Gross Revenue for the Industry leaders of 10.7% plus an additional 3.5% and the Beginning Value to be the G&A Expense as a Percentage of Revenue of 19.4% in Figure 9. The Final Value in FY2031 is adjusted upwards by an additional 3.5% to account for Short-term expectations of compliance costs incurred and Grab's relatively high G&A as a Percentage of Gross Revenue in FY2022 of 19.4% in Figure 13. The CAGR is therefore calculated to be -3.41% in Figure 15. Grab's G&A as a Percentage of Gross Revenue is expected to decrease and plateau as it reaches a stable state at a Forecasted Growth rate of -3.41%. The G&A as a Percentage of Gross Revenue from FY2023 to FY2031 is then projected to decrease from 18.71% in FY2023 to 14.18% in FY2031 in Figure 15. The Forecasted General & Admin as a Percentage of Gross Revenue is in line with the expectation over time, Grab will have sufficiently scaled their business to enjoy economies of scale and G&A as a percentage of Gross Revenue will decrease as stated in the Annual Report.

### 3.2 Forecasted Sales and Marketing Expenses

Forecast for Sales & Marketing Expenses								
	FY19	FY20	FY21	Q1FY22	Q2FY22	Q3FY22	Q4FY22	FY22
Net Revenue	-845	469	675	228	321	382	421	1,352
Gross Revenue	1,506	1,706	2,457	788	844	858	878	3,376
Sales & Marketing as % of Gross Revenue	15.80%	8.85%	9.81%	8.88%	8.53%	7.69%	8.37%	8.37%

Figure 16: Forecasted Sales and Marketing Expenses % of Gross Revenue for FY2022

We calculated the Sales and Marketing Expenses as a Percentage of Gross Revenue over FY2019 to FY2022Q3 and the average over FY2022Q1 to FY2022Q3 is taken to be that of FY2022Q4 as in Figure

12. By taking the average of the Sales and Marketing as a % of Gross Revenue from the four quarters in FY2022, we calculated the Sales and Marketing % of Gross Revenue for FY2022 to be 8.37% in Figure 8.

In light of the unstable economic conditions, Grab is expected to cut Marketing Expenses for leaner operations (Trentmann, 2022). This is in line with Grab's Forward-Looking Insights in the Annual Report whereby Sales and Marketing Expenses as a % of Gross Revenue are expected to decrease in the long run. As Grab reaches stable state growth, their Sales and Marketing Expense as a Percentage of Gross Revenue can be modelled after that of Industry Leaders.

Technology Industry Market Leaders Expenses as a % of Gross Revenue				
Company	Market Cap in USD	% Weights	Sales, Marketing, General & Admin Expense	R&D Expense
Apple	2,419,332,200,000	43.84%	6.4%	6.7%
Microsoft	1,881,039,500,000	34.09%	14.0%	12.4%
Alphabet	1,217,899,600,000	22.07%	14.1%	12.3%
Total	5,518,271,300,000			
Weighted Expenses			10.7%	9.8%

Figure 17: Industry Leaders' Sales, Marketing, General & Administrative Expenses and R&D Expenses as a % of Gross Revenue

We forecasted the Sales and Marketing Expense as a Percentage of Gross Revenue's Growth from FY2023 to FY2031 using CAGR. The Industry Leaders' Weighted average by Market Capitalization Sales, Marketing and G&A Expenses as a Percentage of Gross Revenue was calculated to be 10.7% as in figure 13. The Industry Leaders consolidated their Sales & Marketing Expenses and G&A Expenses, so we assumed an equal split in expenses between the two categories. We then calculated the Sales and Marketing Expenses as a Percentage of Gross Revenue for Industry Leaders and Grab to be 5.34%. We take the Ending Value in FY2031 to be the Sales and Marketing Expenses as a Percentage of Gross Revenue for Industry Leaders to be 5.34% and the Beginning Value in FY2022 to be Grab's Sales and Marketing Expenses as a Percentage of Gross Revenue of 8.37% in Figure 12.



Forecast for Sales & Marketing Expenses									
	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Net Revenue	2,038	2,792	3,690	4,401	5,184	5,976	6,749	7,529	8,334
Gross Revenue	4,268	5,225	6,302	7,112	7,936	8,708	9,399	10,059	10,708
Sales & Marketing as % of Gross Revenue	7.96%	7.57%	7.20%	6.85%	6.52%	6.20%	5.90%	5.61%	5.34%
Forecasted Growth	-4.87%	-4.87%	-4.87%	-4.87%	-4.87%	-4.87%	-4.87%	-4.87%	-4.87%
CAGR	-4.87%								

Figure 18: *Forecasted Sales and Marketing Growth and Expenses for FY2023 to FY2031*

The Calculated CAGR of -4.87% is then taken to be the forecasted Change in Sales & Marketing as a Percentage of Gross Revenue from FY2023 to FY2031. The derived forecasted Sales and Marketing as a Percentage of Gross Revenue from FY2023 to FY2031 is 7.96% to 5.34%. The forecasted expenses are in line with expectations that Grab is a dominant market player with a sizeable share of loyal customers. Thus their strategy moving forward would be to reduce their Sales and Marketing Expenses as a Percentage of Gross Revenue to focus on retaining loyal users rather than acquiring new merchant-partners, driver-partners and consumers.

### 3.3 Forecasted Research and Developmental Expenses

Forecast for Research & Developmental Expenses								
	FY19	FY20	FY21	Q1FY22	Q2FY22	Q3FY22	Q4FY22	FY22
Net Revenue	-845	469	675	228	321	382	538	1,469
Gross Revenue	1,506	1,706	2,457	788	844	858	1,174	3,672
Research & Development as % of Gross Revenue	15.3%	15.1%	14.5%	15.1%	14.3%	13.5%	14.3%	14.3%

Figure 19: *Historical Research and Developmental as a Percentage of Gross Revenue and the corresponding Growth from FY2019 to FY2022Q4*

We calculated the historical Research and Development (R&D) Expenses as a Percentage of Gross Revenue as in Figure 11, taking the average of that in FY2022Q1 to FY2022Q3 to forecast the R&D as a % of Gross Revenue for FY2022Q4 at 14.3%.

Grab's ability to grow their merchant-partner and driver-partner bases thus far can be attributed to their ability to provide the necessary digital tools and retain consumers. With significant investments in Grab's innovations thus far, Grab has become a dominant leader in the South-East Asia market with a large

consumer-base and ecosystem of complementary services. Grab could switch to a Cost Leadership approach instead (Guo et al., 2018), reducing R&D efforts and offering their services at a lower cost than competitors to deter new entrants with higher Barriers to entry.

Technology Industry Market Leaders Expenses as a % of Gross Revenue				
Company	Market Cap in USD	% Weights	Sales, Marketing, General & Admin Expense	R&D Expense
Apple	2,419,332,200,000	43.84%	6.4%	6.7%
Microsoft	1,881,039,500,000	34.09%	14.0%	12.4%
Alphabet	1,217,899,600,000	22.07%	14.1%	12.3%
Total	5,518,271,300,000			
Weighted Expenses			10.7%	9.8%

Figure 20: *Industry Leaders' Sales, Marketing, General & Administrative Expenses and R&D Expenses as a % of Gross Revenue*

As stated in the Project Guidelines, Grab will reach stable growth rate by FY2031 and will be focused on sustaining their market dominance through only necessary R&D expenses. Grab's R&D as a Percentage of Expenses can be modelled after that of Industry Leaders in Figure 20. The R&D Expenses as a % of Gross Revenue of the Tech Industry Leaders were pulled from their Annual Reports and we calculated the Weighted Average by Market Capitalization R&D Expenses to be 9.8% in Figure 20.

Forecast for Research & Developmental Expenses									
	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Net Revenue	2,038	2,792	3,690	4,401	5,184	5,976	6,749	7,529	8,334
Gross Revenue	4,268	5,225	6,302	7,112	7,936	8,708	9,399	10,059	10,708
Research & Development as % of Gross Revenue	13.73%	13.17%	12.63%	12.12%	11.62%	11.15%	10.69%	10.26%	9.84%
Forecasted Growth	-4.09%	-4.09%	-4.09%	-4.09%	-4.09%	-4.09%	-4.09%	-4.09%	-4.09%

CAGR	-4.09%
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Figure 21: *Forecasted Research and Developmental as a Percentage of Gross Revenue and the corresponding Growth from FY2023 to FY2031*

We modelled the Growth in R&D as a Percentage of Gross Revenue using CAGR. The Ending Value is taken to be the R&D Expense as a Percentage of Gross Revenue of Industry Leaders of 9.8% in Figure 20 and the Beginning Value is the R&D expense as a Percentage of Gross Revenue of Grab in FY2022 of

14.3% in Figure 19. We obtained a CAGR of -4.09% which is the forecasted growth across FY2023 to FY2031 in Figure 21. We then forecast the R&D as a Percentage of Gross Revenue to drop from 13.73% in FY2023 to 9.84% in FY2031 in Figure 21.

#### **4. Financial Modelling by Parts: Interest Payable**

##### **4.1 Forecasted Finance Expense**

From the annual report we can see that the finance expense is calculated based on the financial liabilities that Grab has for the various types of liability obligations such as bank loans, term loan, trade and other payables and lease liabilities. We calculated the cost of debt using the Hamada model and we used that as the average interest rate for overall financial liabilities measured at amortized cost.

#### **5. Financial Modelling By Parts:**

##### **5.1 Forecasted PPE**

In order to forecast the fixed assets required to fund Grab's expansion, we deconstructed their Property, plant, and equipment assets from their most recent annual report. Their annual report segmented overall PPE into 4 asset classes: Computers, Buildings and renovations, motor vehicles for leasing, and office equipment.

From there, we calculated the GMV turnover for each individual asset. We choose to utilize the GMV turnover in our PPE forecasts instead of revenue turnover because the revenue turnover is confounded by Grab's commission rates as well as their incentives rates. These rates should not affect the investments required by Grab to continue supporting its expansion.

We tied the GMV turnover for computers, buildings and renovations, as well as office equipment to overall GMV. However, we only used mobility GMV to get the turnover ratio for the motor vehicles asset class. We assume that motor vehicles purchased for leasing pertain mostly to the mobility segment, and that the other asset classes will be required to support the overall business.

GMV generated by segment			
	FY19	FY20	FY21
deliveries	2947	5468	8530
mobility	5715	3232	2787
finance services	3579	3748	4591
enterprise	9	44	153
Total	12250	12492	16061
Implied GMV turnover per PPE asset			
	2019	2020	2021
Computers	490	833	1071
Buildings and Reno	173	219	100
Motor vehicles for leasing	14	11	11
Office and other equipment	557	694	892

Figure 22: *Business segments GMV and Implied GMV/PPE turnover*

To adjust for any distortions in the GMV turnover ratios that arise from Grab going IPO, we take the GMV turnover ratios in the future from 2022 - 2031 as the average of the turnover ratios from 2019 – 2021 for each asset class.

GMV turnover per PPE asset										
	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Computers	798	798	798	798	798	798	798	798	798	798
Buildings and Reno	164	164	164	164	164	164	164	164	164	164
Motor vehicles for leasing	12	12	12	12	12	12	12	12	12	12
Office and other equipment	714	714	714	714	714	714	714	714	714	714

Figure 23: *GMV Turnover per PPE Asset*

From there, we are able to obtain the fixed asset (PPE) requirements needed for Grab to fund its operations.

asset value per asset type (PPE)										
	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Computers	23	27	32	36	41	45	49	53	56	60
Buildings and Reno	113	133	154	177	198	219	239	257	275	292
Motor vehicles for leasing	326	448	555	669	772	896	1,013	1,113	1,199	1,280
Office and other equipment	26	31	35	41	45	50	55	59	63	67
Total Net PPE value	488	639	777	923	1,056	1,211	1,356	1,482	1,593	1,699

Figure 24: *Calculated Net Asset Value per asset class*

Grab's PPE assets are composed of 4 different types of assets, each making up a varying percentage of the total PPE over the next 10 years. Hence, we had to forecast the depreciation rate for each year as well.

To do so, we had to estimate the useful life of grab's assets from the information given in their annual report. We obtained the accumulated depreciation of each asset class from years 2019 – 2021, and then calculated the change in the accumulated depreciation to find the net depreciation for each asset class from 2019 – 2021.

Accumulated Depreciation			
	2019	2020	2021
Computers	20	35	47
Buildings and Reno	46	72	67
Motor vehicles for leasing	148	192	223
Office and other equipment	11	18	21
Implied Depreciation			
Computers	-	15	12
Buildings and Reno	-	26	-5
Motor vehicles for leasing	-	44	31
Office and other equipment	-	7	3

Figure 25: *Accumulated Depreciation and Implied Depreciation*

From there, we obtained the implied depreciation rate for all of the asset classes for each of the years by using the formula:  $depreciation\ rate = \frac{2 \times net\ depreciation\ t_1}{gross\ asset\ value\ t_0 + gross\ asset\ value\ t_1}$

To get an estimate of the useful life of the separate asset classes, we used the following formula:  $implied\ useful\ life = ROUND(\frac{1}{AVERAGE(depreciation\ rate\ rates)}, 1)$

We initially found that the motor vehicles for leasing had an implied useful life of 13.5 years. To be more conservative, we hardcoded the useful life of that asset class at 10 years.

Implied Depreciation rate			
	2019	2020	2021
Computers		32%	21%
Buildings and Reno		21%	-3%
Motor vehicles for leasing		8%	6%
Office and other equipment		20%	8%
Implied useful lives			
Computers	3.8		
Buildings and Reno	10.9		
Motor vehicles for leasing	10		
Office and other equipment	7.1		

Figure 26: *Implied Depreciation rate and Implied useful lives*

Finally, to get the annual depreciation rate, we calculated an average depreciation rate, weighted by the net fixed asset value for each asset type.

Calculated Depreciation rates (PPE)									
2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
10.80%	10.72%	10.69%	10.66%	10.65%	10.63%	10.61%	10.60%	10.60%	10.60%

Figure 27: *Calculated depreciation rates based on implied asset useful lives*

While the estimation parameters are rough, we do believe that it will allow us to model how their depreciation rates and fixed asset investments will change as their revenue structure changes over time.

The PPE revenue turnover ratio is not utilized in our calculations, but it is implied from our calculations.

Implied PPE rev turnover									
2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
2.78	3.19	3.59	4.00	4.17	4.28	4.41	4.55	4.73	4.91

Figure 28: *Implied revenue based turnover ratios for Property, Plant and Equipment*

## 5.2 Intangibles

We use the same methodology implemented in our calculation of PPE turnover rates and depreciation rates to intangible assets. However, we make additional modifications to our intangible asset calculations. Grab's intangible assets consist of Goodwill, non-compete agreements, other intangible assets, and software.

Gross intangibles			
	2019	2020	2021
Software	66	84	89
Goodwill	709	712	712
Non-compete agreement	1644	1644	1644
other intangible assets	17	17	18

Figure 29: *Gross Intangibles*

From their annual report, we observe that the non-compete agreement is actually an intangible asset representing the fair value of some benefits they were able to obtain (search 10 k for exact wording). In 2021, it was amortized off completely, and has a carrying value of 0.

Carrying Value			
	2019	2020	2021
Software	39	41	26
Goodwill	681	656	647
Non-compete agreement	456	214	0
other intangible assets	4	2	2

Figure 30: Carrying Value

We do not attempt to forecast goodwill, as we cannot anticipate Grab's acquisition behavior in future years. To keep the intangible asset value consistent with Q3's net intangible asset value, we assume goodwill can be estimated using the following formula:  $goodwill\ 2022F = 2022Q3\ intangible\ asset\ value - 2022F\ software\ value - 2021\ other\ intangible\ asset\ value$ . The increase in goodwill also makes intuitive sense as Grab recently completed their acquisition of Jaya Grocer on January 31 2022 (Grab).

We do not attempt to forecast other intangible assets as well due to the amount being a fixed negligible amount for all 3 years 2019 - 2021.

However, we observe that software costs might scale as Grab continues to grow. As Grab grows larger, so should the need to develop in-house software. Hence, we calculated its GMV turnover as well as its implied useful life using the formulas we specified in section 2.6.

To calculate the annual depreciation rate, we used a weighted average depreciation rate just like in section 2.6, but we assumed that goodwill had an infinite useful life (we also assume other intangible assets have an infinite useful life as well, but that is only because its value is negligible).

Implied useful lives		
Software	4.5	
Goodwill	38.4	#N/A
Non-compete agreement	7.2	#N/A
other intangible assets	11.4	#N/A

Figure 31: Implied Useful Lives

From these assumptions, we get an implied Intangible asset revenue turnover and Net intangible asset value for years 2022 – 2031.

Implied Intangibles rev turnover									
2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
1.50	2.23	3.03	3.97	4.69	5.48	6.26	7.02	7.77	8.55
Total Net Intangibles Value									
904	912	920	929	938	946	954	961	968	975

Figure 32: Implied revenue based turnover ratios for intangible assets and total net intangible asset values

### 5.3 Current Assets

According to the notes to the financial statements, most of Grab's trade receivables relate to Mobility and Deliveries business segments. Grab does not provide a breakdown of the trade receivables. Hence, we assume that 90% of Grab's trade receivables are attributable to mobility and delivery segments while 10% are attributable to the rest. Just like PPE, we use GMV to forecast the turnover related to trade receivables for 2022F – 2031F.

The table below illustrates the calculation of the turnover rate used in our forecasts.

Trade and Other Receivables			
<b>GMV values</b>			
Mobility & Deliveries	8662	8700	11317
Others	3588	3792	4744
<b>Trade and other receivables value</b>			
attributable to mobility and del	247	155	230
attributable to rest	27	17	26
<b>Total</b>	<b>274</b>	<b>172</b>	<b>255</b>
<b>GMV receivables turnovers</b>			
GMV mobility and del turnover	35	56	49
GMV "others" turnover	131	220	186
<b>GMV receivables turnovers (avg)</b>			
GMV mobility and del turnover	47		
GMV "others" turnover	179		

Figure 33: Trade and Other Receivables



Our revenue-based turnover for receivables is implied by our calculations.

Implied receivables rev turnover									
2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
4.34	5.41	6.32	7.21	7.65	8.11	8.56	9.00	9.43	9.86

Figure 34: *Implied receivables revenue turnover*

## 6. Financial Modelling By Parts: Weighted Average Cost of Capital (WACC)

WACC is the average rate that a business pays to finance its assets. It is calculated by averaging the rate of all sources of capital, weighted by each of their proportions. To calculate the appropriate WACC, our Team approached it via 2 methods. The first approach relied on the Hamada Equation while the second approach was based on various reliable financial sources that were found online.

### 6.1 WACC via Hamada's Equation

To use the Hamada Model to derive WACC, we unlevered the beta based on the different segments of Grab's business which are Delivery, Mobility and Financial Services.

#### 6.1.1 Delivery's Segment

Delivery										
Company	Market Cap in USD	% Weights	Total Interest Bearing Liabilities	Total Equity (Book Value)	Total Equity (Market Value)	Debt-to-Equity Ratio	Tax	Beta	Unlevered Beta	Weighted Unlevered Beta
Deliveroo	1,824,000,000	2.21%	56,036,546	1,073,700,000	1,824,000,000	0.030721791	25%	1.2	1.17	0.025951
Delivery Hero SE (Food Panda)	10,452,700,000	12.68%	1,377,900,000	5,766,700,000	10,452,700,000	0.1318224	15.83%	1.09	0.98	0.124395
Uber	70,165,900,000	85.11%	10,938,000,000	15,145,000,000	70,165,900,000	0.155887689	21%	1.31	1.17	0.992676
Total	82,442,600,000	100.00%								1.143023
Unlevered Beta (Delivery)										0.268094

Figure 35: *Figure of Unlevered Beta for Delivery Segment*

To find the unlevered beta for the delivery segment of Grab's business, we first found notable companies that were competing in the delivery services sector. Notable companies included companies that were market leaders in their own respective regions as well as delivery companies that were seen more often in Singapore such as Food Panda which is owned by Delivery Hero SE. The debt-to-equity ratio of each company was derived by dividing the total interest-bearing liabilities by the current market capitalization. Tax rates for each of the respective companies corresponded with the corporate tax rates in which the companies are based in. Unlevered beta was calculated with the following formula:

$$\beta_U = \frac{\beta_L}{(1 + (1 - T) \left( \frac{Debt}{Equity} \right))}$$

Where  $T$  = Tax,  $Debt/Equity$  = Debt-to-Equity Ratio

For a more accurate representation of the unlevered beta, we chose to obtain the weighted unlevered beta by multiplying the unlevered beta of each company to their weights to obtain a weighted unlevered beta. As the delivery segment of Grab only accounts for approximately 21.92% of the entire revenue\*, we multiplied the weighted unlevered beta by 21.92% to obtain an unlevered beta of 0.2689 for the delivery segment.

\*Entire revenue = Revenue for the year – Revenue for Enterprise and New Initiatives

### 6.1.2 Mobility's Segment

Mobility										
Company	Market Cap in USD	% Weights	Total Interest Bearing Liabilities	Total Equity (Book Value)	Total Equity (Market Value)	Debt-to-Equity Ratio	Tax	Beta	Unlevered Beta	Weighted Unlevered Beta
Comfort Delgro	1,929,700,000	2.54%	453,468,516	3,136,300,000	1,929,700,000	0.234994308	17%	1.03	0.86	0.021909
Lyft	3,819,700,000	5.03%	865,405,000	5,766,700,000	3,819,700,000	0.226563604	21%	1.09	0.92	0.046518
Uber	70,165,900,000	92.43%	10,938,000,000	15,145,000,000	70,165,900,000	0.155887689	21%	1.31	1.17	1.078027
<b>Total</b>	<b>75,915,300,000</b>	<b>100.00%</b>								<b>1.146454</b>
<b>Unlevered Beta (Mobility)</b>										<b>0.828499</b>

Figure 36: Figure of Unlevered Beta for Mobility Segment

For the unlevered beta for the Mobility segment, we essentially went through the same steps that we did for the derivation of the unlevered beta for Delivery segment with changes to the companies in comparison. The companies that were used as a basis for comparison here includes ComfortDelgro, which is the leading company in terms of mobility in Singapore, as well as market leaders in the US such as Lyft and Uber. The unlevered beta for the mobility segment came out to be an estimated 0.8285.

### 6.1.3 Financial Services' Segment

Financial Services (Payment Processors)										
Company	Market Cap in USD	% Weights	Total Interest Bearing Liabilities	Total Equity (Book Value)	Total Equity (Market Value)	Debt-to-Equity Ratio	Tax	Beta	Unlevered Beta	Weighted Unlevered Beta
Paypal	87,206,100,000	32.24%	8,049,000,000	21,727,000,000	87,206,100,000	0.092298589	21%	1.36	1.27	0.408646
Block Inc	49,402,300,000	18.26%	4,954,225,000	3,313,589,000	49,402,300,000	0.100283286	21%	2.05	1.90	0.34691
American Express	133,895,200,000	49.50%	40,918,000,000	15,145,000,000	133,895,200,000	0.305597213	21%	1.31	1.06	0.522329
<b>Total</b>	<b>270,503,600,000</b>	<b>100.00%</b>								<b>1.277884</b>
<b>Unlevered Beta (Financial Services)</b>										<b>0.05468</b>

Figure 37: Figure of Unlevered Beta for Financial Services' Segment

For the unlevered beta for Financial Services segment, the same steps were used as per above. In this case, we used leading financial payment processors companies in the US such as Paypal, Block Inc and American Express as a basis for comparison. The unlevered beta for the financial services segment was estimated to be 0.0547.

### 6.1.4 Enterprise and New Initiatives Segment

As enterprise and new initiatives are unknown, we were not able to find comparable companies to unlever the beta. However, as mentioned above, we have taken out the revenue generated by Enterprise and New Initiatives segment to obtain a more accurate weight proportion for the remaining segments.

### 6.1.5 Market Risk Premium (MRP) and Tax

Weighted Average of MRP and Tax				
Country	Revenue	% Weights	Risk Premium	Tax
Singapore	283	41.9%	4.99%	17%
Malaysia	108	16.0%	3.58%	24%
Philippines	81	12.0%	9.23%	25%
Thailand	76	11.3%	4.22%	20%
Rest of SEA (Indonesia, Cambodia and Vietnam)	127	18.8%	10.04%	20.67%
Total	675	100.0%	6.14%	20.11%

Figure 38: *Figure of Weighted Average Market Risk Premium and Tax*

To arrive at a more precise MRP, we have decided to find the risk premium for the countries in which Grab has a presence in with the exception of Myanmar. We have decided to exclude Myanmar as its political scene is unstable following a military coup resulting in overinflated MRP. The risk premium for each country was taken from 2 different online sources, Market Risk Premia and an NYU website with minor adjustments made to them to reflect a truer MRP. The tax rates are the corresponding corporate tax rates in each of the respective countries. For the calculation for the risk premium and tax for Rest of SEA, we assume that the risk premiums and tax in Indonesia, Cambodia and Vietnam are equally weighted to find the weighted average MRP for the region. A further assumption was made that the revenue for “Rest of SEA” was split equally among Indonesia, Cambodia and Vietnam. To obtain the weighted average risk premium and tax, we simply multiplied the respective values by their weights in terms of total revenue. As such, weighted MRP is estimated to be 6.14% while weighted tax is estimated to be 20.11%.

### 6.1.6 Estimating of Cost of Equity

Cost Of Equity	
Risk-free Rate	3.34%
Market Risk Premium	6.14%
Unlevered Beta	1.15
Levered Beta	1.24
<b>Cost of Equity</b>	<b>11.0%</b>

Figure 39: *Figure of Cost of Equity*

To calculate the cost of equity, we used the bond yield of Singapore 10 Years Bond which was around 3.34% at the time of checking. Next, we levered the beta based on the weighted unlevered beta that we have obtained earlier using the formula:

$$\beta_L = \beta_U(1 + (1 - R_f) \left( \frac{Debt}{Equity} \right))$$

, where  $T$  = Weighted Tax Rate,  $Debt/Equity$  = Debt-to-Equity ratio of Grab

After re-leveraging the beta, we were able to find the cost of equity for Grab using Capital Asset Pricing Model formula using the formula:

$$r_s = r_f + \beta(MRP)$$

, where  $r_f$  = Risk-free Rate,  $\beta$  = Levered Beta of Grab,  $MRP$  = Weighted Average MRP

Using the above formulas, we were able to estimate Grab's cost of equity to be around 11%.

### 6.1.7 Estimating of Cost of Debt

Cost of Debt	
Interest expense	-1,675
Interest expense of convertible preference shares	1570
Total Interest Bearing Liabilities	-2,175
<b>Cost of Debt</b>	<b>4.83%</b>

Figure 40: Figure of Cost of Debt

To estimate the cost of debt, we got the figure for Interest expense from the Annual Report where they reported an interest expense of 1,675 million (Grab Annual Report 2021, Page 133). According to Grab's Annual Report 2021, Page 141, they stated that the Convertible Redeemable Preference Shares were converted into Ordinary Shares in December 2021, and as such, we have decided to exclude this interest expense from the calculation of the cost of debt. For total interest-bearing liabilities, they mainly come from short-term and long-term borrowings as stated in Grab's FY2021 Statement of Financial Position. Ultimately, we were able to estimate the cost of debt to be approximately 4.83%.

### 6.1.8 Estimated WACC using Hamada's Equation

WACC	
Weight of Debt	0.0918
Cost of Debt	4.83%
Weight of Equity	0.9082
Cost of Equity	11.0%
<b>WACC</b>	<b>10.32%</b>

Figure 41: Figure of WACC

Using Grab's FY2021 Statement of Financial Position, we were able to obtain the weights of the debt and the equity. By applying the formula:

$$WACC = w_d k_d (1-T) + w_e k_e$$
, where  $w_d$  = Weight of Debt,  $k_d$  = Cost of Debt,  $T$  = Weighted Tax Rate,  $w_e$  = Weight of Equity,  $k_e$  = Cost of Equity

We were able to estimate the WACC of Grab to be around 10.32%.

## **6.2 Alternative WACC Calculation via US Stock Market Assumptions**

We also calculated WACC from the perspective of the US investor, given Grab held their Initial Public Offering in the US stock exchange. Some of the parameters that should, in theory, be the same as what was calculated in the Hamada model have been altered, so we take an average of both the calculated WACCs to calculate our final WACC.

### **6.2.1 Estimating the Cost of Equity**

We first ran a regression of Grab's stock price returns against the S&P500's total returns. The regression time period we used was 1 December 2021 to 3 March 2023, and we used daily returns to calculate the beta. We derived a beta of 1.22.

Regression for cost of Equity						
Date	GRAB price	ASP500TR	GRAB (ln returns)	SP (ln returns)	SUMMARY OUTPUT	
12/1/2020	11.89	7556.52			<b>Regression Statistics</b>	
12/2/2020	11.82	7570.76	-0.005905	0.001883	Multiple R	0.286331245
12/3/2020	11.9	7567.44	0.006745	-0.000439	R Square	0.081985582
12/4/2020	12.4	7634.77	0.041158	0.008858	Adjusted R Square	0.080357896
12/7/2020	12.55	7620	0.012024	-0.001936	Standard Error	0.04876723
12/8/2020	12.377	7641.43	-0.013881	0.002808	Observations	566
12/9/2020	12.7	7581.06	0.025762	-0.007932	<b>ANOVA</b>	
12/10/2020	12.65	7571.87	-0.003945	-0.001213		
12/11/2020	12.75	7562.46	0.007874	-0.001244	<b>df</b>	
12/14/2020	13.2	7530.87	0.034686	-0.004186	Regression	1
12/15/2020	12.692	7628.28	-0.039245	0.012852	Residual	564
12/16/2020	12.61	7641.82	-0.006482	0.001773	Total	565
12/17/2020	13.19	7686.18	0.044969	0.005788	<b>Coefficients</b>	
12/18/2020	13.04	7659.75	-0.011437	-0.003445	Intercept	-0.00256517
12/21/2020	13.488	7630.07	0.033779	-0.003882	<b>BETA</b>	<b>1.220392193</b>
12/22/2020	13.62	7614.83	0.009739	-0.001999		
12/23/2020	13.29	7620.63	-0.024527	0.000761		
12/24/2020	13.32	7648.39	0.002255	0.003636		
12/28/2020	12.9	7715.1	-0.032039	0.008684		
12/29/2020	12.94	7697.93	0.003096	-0.002228		
12/30/2020	13.2	7709.1	0.019894	0.001450		
2/21/2023	3.4	8534.73	-0.023257	-0.020237		
2/22/2023	3.5	8521.45	0.028988	-0.001557		
2/23/2023	3.21	8567.57	-0.086492	0.005398		
2/24/2023	3.1	8477.66	-0.034869	-0.010550		
2/27/2023	3.17	8504.76	0.022329	0.003192		
2/28/2023	3.21	8479.8	0.012539	-0.002939		
3/1/2023	3.1	8440.25	-0.034869	-0.004675		
3/2/2023	3.2	8505.55	0.031749	0.007707		
3/3/2023	3.28	8643.61	0.024693	0.016101		

Figure 42: Regression for Cost of Equity

We then took Beta calculated from online sources, and then took the average of all the results that were not outliers (such as Yahoo Finance's Beta). We arrive at a final beta of 1.2349.

Beta (Yahoo)	0.7600
Beta (Barron's)	1.2300
Beta (Bloomberg)	1.2543
Beta (Regression)	1.2204
<b>Final Beta</b>	<b>1.2349</b>

Figure 43: Beta Calculation using an average Beta from various sources

We then used the CAPM to calculate the cost of equity using the inputs shown in below:

e(Rm) past 25years	9%	<<< mckinsey
10Y risk free rate	3.97%	<<< Ycharts
Cost of equity	10.182%	

Figure 44: Cost of Equity calculated using the CAPM

### 6.2.3 Estimating the Cost of Debt and Tax Rate.

This alternative calculation of WACC used a rough means of estimation for the cost of debt. We calculated the interest expense rate for from 2019 – 2022Q3 using the formula:  $\text{interest expense rate} = \frac{\text{interest expense}}{\text{total interest bearing liabilities}}$ . We then took the average of the interest expense rates but excluded outliers (2021's interest rate).

Cost of Debt Calculation	
2019 Interest %	12%
2020 Interest %	14%
2021 Interest %	78%
2022Q1 Interest %	7%
2022Q2 Interest %	31%
2022Q3 Interest %	15%
average cost of debt excl 2021	16%

Figure 45: Cost of Debt Calculation

We utilize the tax rate of Grab's operations calculated in section 6.1.5. which is 20.11%.

### 6.2.4 Calculating the Market Capitalization and Debt Value.

In this calculation of WACC, our debt value will be different from the Hamada model's. We use net debt in this calculation as shown in the image below.

Net Debt Calculation	
Current Loans and Borrowings	117
Loans and Borrowings	2004
Cash and Cash Equivalent	2447
Net Debt	-326

Figure 46: Net Debt Calculation

The equity value in this WACC estimation will remain the same.

### 6.2.5 Final alternative WACC value

Using the WACC formula, we obtain an alternative WACC of 10.12%.

Alternative WACC Calculation (CAPM)	
Equity Value	12,600
Cost of Equity	10.182%
Debt Value	- 326
Tax Rate	20.11%
Cost of Debt	16%
WACC	10.12%

Figure 47: Alternative WACC Calculation (CAPM)

### 6.3 Final WACC

The final WACC is an average of the alternative viewpoints which amounts to 10.22%. The rationale behind averaging the WACC was that the conversion of the convertible redeemable shares to ordinary shares could prove as a confounder in derivation of the Cost of Debt in section 6.1.7. Hence, an average of the 2 calculations were used instead.

### 6.4 EBITDA and Net Income

Based on our projections, Grab only has a positive EBITDA and Net Income in years 2027 and 2028 respectively.

('millions)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
EBITDA	-1,131	-1,062	-897	-630	-314	109	622	1,211	1,868	2,599
Depreciation PPE	-131	-118	-147	-179	-215	-254	-299	-348	-400	-457
Amortization Intangible Assets	-20	-26	-30	-35	-39	-44	-49	-54	-58	-63
Other Expenses	-11	-11	-11	-11	-11	-11	-11	-11	-11	-11
EBIT	-1,293	-1,217	-1,085	-855	-578	-200	263	799	1,399	2,068
Finance Income	75	73	66	62	60	60	63	71	83	100
Finance Expense	-97	-97	-97	-97	-97	-97	-97	-97	-97	-97
EBT	-1,315	-1,241	-1,115	-889	-615	-237	230	773	1,385	2,072
Total Tax	-10	-10	-10	-10	-10	-10	-46	-155	-277	-414
Net Income	-1,325	-1,251	-1,125	-899	-625	-247	184	618	1,108	1,658
Dividends	0	0	0	0	0	0	-17	-56	-100	-149
Retained Earnings	-1,325	-1,251	-1,125	-899	-625	-247	167	563	1,008	1,509

Figure 48: EBITDA, EBIT, EBT, and NI figures

Because of our 2022F projections, we imply a strong Q4 performance, as well as SG&A / R&D expenses that scale modestly with rising revenues. The increase in expenses does not contradict management's guidance on lowered expenses as we forecast a strong 4<sup>th</sup> Quarter.



## 6.5 Final Market Stock Price Calculation

(millions)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
<b>Free cash flow calculation</b>										
Net Income	-1,325	-1,251	-1,125	-899	-625	-247	184	618	1,108	1,658
Add back depreciation	151	143	177	214	254	298	348	401	458	520
Subtract increase in current assets	-1,006	-76	-77	-83	-71	-71	-64	-55	-50	-47
Add back increase in current liabilities	2,327	1,039	950	1,028	656	588	435	256	126	13
Subtract increase in fixed assets at cost	-428	-302	-322	-369	-395	-461	-502	-535	-576	-632
Add back after-tax interest on finance expense	97	97	97	97	97	97	77	77	77	77
Subtract after-tax interest on finance income	-75	-73	-66	-62	-60	-60	-51	-57	-66	-80
<b>Free cash flow</b>	<b>-258</b>	<b>-423</b>	<b>-367</b>	<b>-74</b>	<b>-145</b>	144	428	706	1,078	1,508
Terminal value										21,512
Total	<b>-258</b>	<b>-423</b>	<b>-367</b>	<b>-74</b>	<b>-145</b>	144	428	706	1,078	23,020

Figure 49: FCFs from FY22 to FY2031

Our model predicted a general trend of gradual increase in Free Cash Flows (FCF) throughout the forecast period. With the FCF for FY31, we were able to obtain the terminal value using the formula:  $TV = (FCF \cdot (1 + g)) / (WACC - g)$ , where  $TV$  = Terminal Value,  $g$  = long-term growth rate,  $WACC$  = Weighted Average Cost of Capital

We have estimated the long-term growth rate to be 2.4% which is the average inflation rate in Singapore between 2021 to 2031. The WACC used was the WACC derived in Section 6.3.

Enterprise value	8,475
Add in initial (year 0) cash and mkt. securities	4,991
Asset value in year 0	13,466
Subtract out value of firm's debt today	-2,031
Equity value	11,435
Total number of shares	3,742
Share price	3.06

Figure 50: FCFs from FY22 to FY2031

To arrive at the Enterprise value, we discounted the cash flows to their present values before multiplying the figure by  $(1+WACC)^{0.5}$ . Mid-year discounting is used in enterprise value calculations because it more accurately reflects the timing of cash flows throughout the year, particularly when cash flows are unevenly distributed across the year. By adjusting the discount rate to reflect the timing of these cash flows, the resulting enterprise value calculation is more accurate and reflects the true value of the company's operations. With that, we were able to calibrate the model to reflect Grab's share price to be \$3.06 which is the adjusted closing price of Grab on 22 December 2022.

## 7. Estimated Stock Price adjusted for own beliefs

### 7.1 Stock Price Adjusted For Own Beliefs

From the initial Model above calibrated to achieve the target Market Stock Price, we identified 2 key parameters that both drastically change Grab's Share price and of which we believe the initial assumptions do not hold.

#### 7.2.1 Cost of Revenue (as Percentage of Gross Revenue)

Cost of Revenue is a major driver of the stock price as it significantly affects the Gross Margins of Grab. The Base Model reflects a more optimistic view of the market whereby Cost of Revenue as % of Gross Revenue is expected to decrease year-on-year (YoY).

	FY20	FY21	FY22F	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
YoY % of Cost of Revenue	24.45%	12.60%	-16.00%	Forecasted Improvement								
Average Improvement over 3 Periods			7.02%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%	2.50%

Figure 51: *Team's Opinion for The Forecasting of Improvement*

However, our Team believes that the Cost of Revenue as a percentage of Gross Revenue will increase YoY between FY23 to FY25 as Grab's 2021 Annual Report implied that it would increase in the short term before they achieve efficiency in supporting their platform users and partners. Therefore, our Team has decided to take a slightly more conservative stance that the Cost of Revenue as a percentage of Gross Revenue will increase at an initial rate of 1.5% on a YoY basis before decreasing by 0.5% YoY till FY27 where we assumed that Grab would have achieved sufficiently efficiency to decrease their Cost of Revenue as a percentage of Gross Revenue

#### 7.2.2 General & Administrative Expenses

In Part 3.1, the General & Administrative Expenses % of Gross Revenue were expected to decrease over FY2023 to FY2031 under the Project Guideline assumption that Grab will reach stable state by FY2031. Although we have adjusted the decrease in G&A Expenses % of Gross Revenue to account for the expected Short-Term increase in Grab's Future Insights in the Annual Report, we believe that due to additional compliance expenses and professional fees incurred as a Publicly listed Company, the G&A Expenses % of Gross Revenue will grow from FY2023 to FY2027 as they continue to expand their reach across regions.

Forecast for General & Admin Expenses									
	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Net Revenue	2,402	3,512	4,888	6,064	7,390	8,766	10,134	11,544	12,973
Gross Revenue	5,058	6,615	8,391	9,839	11,341	12,785	14,109	15,403	16,639
General & Admin as % of Gross Revenue	19.96%	20.55%	21.17%	21.81%	22.46%	21.34%	20.27%	19.26%	18.29%
Forecasted Growth	3.00%	3.00%	3.00%	3.00%	3.00%	-5.00%	-5.00%	-5.00%	-5.00%

Figure 52: *Forecasted G&A Expenses % of Gross Revenue adjusted for own beliefs*

The forecasted growth from FY2023 to FY2027 is expected to be a flat and modest rate of 3% to cover the increased compliance costs incurred. Beyond FY2027, we assume Grab has reached stable growth, achieving scale and the forecasted growth from FY2028 to FY2031 will decrease at a flat rate of -5% in Figure A. The G&A % of Gross Revenue is then forecasted to increase from 19.96% in FY2023 to 22.46% in FY2027 and decrease beyond that to 18.29% in FY2031.

### 7.2.3 Estimated Stock Price

Based on our own assumptions, the free cash flow calculation is as follows:

('millions)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
<b>Free cash flow calculation</b>										
Net Income	-1,325	-1,326	-1,309	-1,233	-1,129	-952	-551	-65	404	914
Add back depreciation	151	143	177	214	254	298	348	401	458	520
Subtract increase in current assets	-1,006	-77	-78	-84	-73	-73	-67	-57	-53	-50
Add back increase in current liabilities	2,327	1,112	1,057	1,174	818	773	635	460	334	220
Subtract increase in fixed assets at cost	-428	-302	-322	-369	-395	-461	-502	-535	-576	-632
Add back after-tax interest on finance expens	97	97	97	97	97	97	97	97	77	77
Subtract after-tax interest on finance income	-75	-73	-66	-60	-54	-47	-42	-43	-39	-47
<b>Free cash flow</b>	<b>-258</b>	<b>-426</b>	<b>-445</b>	<b>-262</b>	<b>-483</b>	<b>-364</b>	<b>-81</b>	258	606	1,002

Figure 53: *Free Cash Flow calculation under own beliefs*

Compared to our base model, our opinions imply that the free cash flow only turns positive in 2029 and net income only turns positive in 2030. This falls in line with our expectations as we believe Grab cannot achieve the significant improvements in efficiency implied by our base model.

Based on the free cash flow calculation, we get a final stock price of \$1.93 per share.

Enterprise value	4,254
Add in initial (year 0) cash and mkt. securities	4,991
Asset value in year 0	9,245
Subtract out value of firm's debt today	(2,031)
Equity value	7,214
Total number of shares	3,742
Share price	1.93

Figure 54: Share price calculation under own beliefs

## 7.2 Recommendation for Buy/Hold/Sell

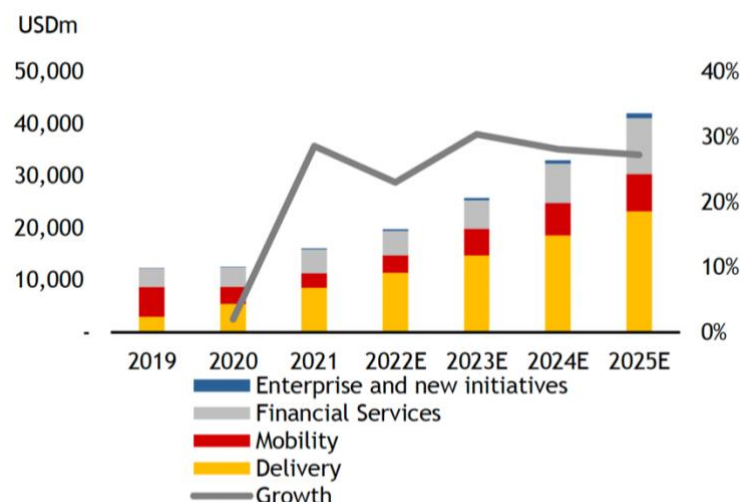
Based on our analysis, we believe that Grab has a potential **36.9%** downside. Furthermore, because we do not foresee any potential reasons for our opinions on G&A and cost of revenues to change, we think it will only be a matter of time before the market realizes that future increasing costs of revenues, as well as inevitably high General & administrative expenses will heavily affect future cash flows.

Hence, we recommend a sell order on Grab.

## 8. Analysis of 3 Stock Projections' effects on Future Cash Flows

### 8.1 Expected GMV Growth and New Income stream

Maybank analysts expect Grab's GMV to see a CAGR of 27.1% to USD\$42 billion from 2021 to 2025. Of which the deliveries and mobility GMV is expected to grow at a CAGR of 28.4% and 26.7% respectively from 2021 to 2025. Mobility GMV is assumed to reach the 2019 levels (pre-covid) by 2024. This can be attributed to the reopening of the SEA economy, where people are expected to travel more as restrictions ease. It has also been observed that there is an increasing number of affluent dual-income households relying on Grab's mobility and delivery services. Revenue is expected to increase with the projected GMV growth, resulting in increased operating cash flow. However, operating expenditure is expected in the coming years with new banking initiatives, the launch of additional GrabKitchens, and the expansion of GrabMart. However, forecasted capital expenditures in the coming years will not directly affect the income statements immediately, but for subsequent years over the useful life of the asset, the depreciation expense will affect the income statement. Grab's overall cashflow is expected to decrease in the first few subsequent years.



Source: Company, Maybank IBG Research

Figure 55: *GMV and Growth*

## 8.2 Mobility and Delivery Revenue as a Percentage of GMV

Table 11: Platform economics – Singapore 4W with no discount

	Low	Mid	High
Commission income after tax (SGD)	234	456	701
VAT (%)	7%	7%	7%
Payment costs (SGD)	-25	-75	-125
Payment channel (%)	2%	2%	2%
Mapping costs (SGD)	-13	-38	-64
Mapping costs (USD / order)	0.1	0.1	0.1
Insurance costs (SGD)	-6	-18	-30
Insurance costs per ride (LC/ride)	0	0	0
Net earnings by Platform (SGD)	190	325	482
<b>Net earnings by Platform as % of GMV (%)</b>	<b>15.2%</b>	<b>8.7%</b>	<b>7.7%</b>

Source: Company websites, J.P. Morgan estimates.

Figure 56: *JPM Forecasted Mobility Contribution as a % of GMV for Singapore (derived by subtracting only base incentives)*

Table 14: Platform economics – Malaysia 4W with no discount

	Low	Mid	High
Commission income after tax (RM)	264	515	634
Service tax (RM)	6%	6%	6%
Payment costs (RM)	-14	-42	-56
Payment channel (%)	1%	1%	1%
Mapping costs (RM)	-40	-120	-160
Mapping costs (USD/order)	0.1	0.1	0.1
Insurance costs (RM)	-7	-21	-28
Insurance costs per ride (RM/ride)	0.1	0.1	0.1
Net earnings by Platform (RM)	203	332	390
<b>Net earnings by Platform as % of GMV (%)</b>	<b>14.5%</b>	<b>7.9%</b>	<b>7.0%</b>

Source: Company websites, J.P. Morgan estimates.

Figure 57: *JPM Forecasted Mobility Contribution as a % of GMV for Malaysia (derived by subtracting only base incentives)*

JPM Analysts forecasted Mobility contribution margins by country. We narrowed the scope to Singapore and Malaysia, which make up 47% of Grab's Revenue. JPM's forecasted Mobility Contribution Margins for Singapore and Malaysia were net of VAT and Service Tax respectively, in Figure 56 and 57.

JPM forecasted FCF with base incentives subtracted already							
(in Local Currency)	GMV	Commission Rate	Commission Income before Tax	Commission Income After Tax	Tax	Incentives	Mobility Rev % of GMV
SG Low	1258.06452	20%	251.6129032	234	7%	-44	10%
SG Mid	3771.71216	13%	490.3225806	456	7%	-131	
SG High	6281.36201	12%	753.7634409	701	7%	-219	
MY Low	1404.25532	20%	280.8510638	264	6%	-61	9%
MY Mid	4214.40262	13%	547.8723404	515	6%	-183	
MY High	5620.56738	12%	674.4680851	634	6%	-244	
Total							9.4%

Figure 58: *JPM Forecasted Mobility Revenue as a % of GMV for Singapore and Malaysia*

We excluded VAT and Service Tax to derive the Mobility Revenue % of GMV for Singapore and Malaysia of 10% and 9% respectively in Figure 45, taking the Base Incentives in Figure 58 to be the Costs incurred in Figure 56. The Weighted average by GMV Mobility Revenue % of GMV for both countries was 9.4% in Figure 58.

Table 29: Platform economics – Singapore with normal delivery fees

	Ruby	Sapphire
Commission income (SGD)	1,250	2,500
Commission fees on food (SGD)	25%	25%
Delivery fees charged to customer per order (SGD)	5	5
Delivery fees charged to customer per month (SGD)	1,000	2,000
Payment to delivery partner (SGD)	-1,782	-3,630
Payment costs (SGD)	-100	-200
Payment channel %	2%	2%
Mapping costs (SGD)	-25	-51
Mapping costs (USD/order)	0.1	0.1
Insurance costs (SGD)	N/A	N/A
Insurance costs per ride (SGD)	N/A	N/A
Net earnings by Platform (SGD)	343	619
<b>Net earnings by Platform as % of GMV</b>	<b>6.9%</b>	<b>6.2%</b>

Source: Company websites, J.P. Morgan estimates.

Figure 59: *JPM's Forecasted Deliveries Revenue as a % of GMV in Singapore (derived by subtracting only base incentives)*

Table 32: Platform economics – Malaysia with no food discount

	Low	High
Commission income (RM)	750	1,750
Commission fees on food (RM)	20%	20%
Delivery fees charged to customer per order (RM)	3	3
Delivery fees charged to customer per month (RM)	450	1,050
Payment to delivery partner (RM)	-975	-2,275
Payment costs (RM)	-38	-88
Payment channel %	1%	1%
Mapping costs (RM)	-63	-147
Mapping costs (USD/order)	0.1	0.1
Insurance costs (RM)	N/A	N/A
Insurance costs per ride (RM)	N/A	N/A
Net earnings by Platform (RM)	125	291
<b>Net earnings by Platform as % of GMV</b>	<b>3.3%</b>	<b>3.3%</b>

Source: Company websites, J.P. Morgan estimates.

Figure 60: *JPM's Forecasted Deliveries Revenue as a % of GMV in Malaysia (derived by subtracting only base incentives)*

JPM also forecasted the Deliveries Revenue % of GMV in Singapore and Malaysia to be 6.4% in Figure 59 and 3.3% in Figure 60 respectively.

JPM forecasted FCF with base incentives subtracted already							
(in Local Currency)	GMV	Commission Rate	Commission Income before Tax	Commission income After Tax	Tax	Incentives	Delivery Rev % of GMV
SG Ruby	5000	25%	1250	1250		-907	6.4%
SG Sapphire	10000	25%	2500	2500		-1881	
MY Low	3750	20%	750	750		-626	3.3%
MY High	8750	20%	1750	1750		-1460	
Total							5.0%

Figure 61: *JPM's Forecasted Deliveries Revenue as a % of GMV in Singapore and Malaysia*

The Weighted Average by GMV Delivery Revenue % of GMV for both countries was calculated to be 5% in Figure 61.

Total Revenue as a Percentage of GMV By Business Segment										
	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Deliveries	6%	8%	10%	12%	13%	14%	15%	16%	17%	18%
Mobility	16%	17%	19%	20%	21%	21%	22%	22%	23%	23%

Figure 62: *Initial Forecast Calibrated to achieve Market Stock Price*

The initial forecasted Deliveries and Mobilities Revenue % of GMV by Business Segment was more aggressive than JPM's forecasts in order to calibrate the stock price, ranging from 6% to 18% and 16% to 23% respectively. Following the Analysts' opinion, FCF is expected to be lower than the initial estimates.

### 8.3 Decline in Cost of Revenue and Additional Income stream

China Renaissance analysts suggests that Grab's cost of revenue will decline from 4.5% in 2021 to 3% in 2024 as a proportion of the Grab's GMV. However, Grab's cost of revenue will inevitably increase as the company expands and invests in more R&D. Macroeconomic factors such as rising inflation and gasoline prices will influence the cost of revenue to increase. This suggests that the expected increase in GMV has to be greater than the expected increase in the cost of revenue. Maybank analysts suggested that cost of revenue and opex as a percentage off GMV will decline from 14% in 2021 to 10% in 2025. The mapping technology introduced by Grab (GrabMap) will enable the company to reduce its licensing fees from third-party providers. It will also provide drivers with a more accurate and efficient route, minimising the delivery time taking. According to the Maybank analysts, Grab is targeting a 10% market share of the US\$1 Billion opportunity in the mapping service industry. Grab aims to offer its mapping service to clients in the B2B



market, securing an additional revenue stream. This could result in an increase in trade receivable and reducing its operating cash flow. However, cost reduction coupled with an additional stream of income could improve Grab's operating cash flow.

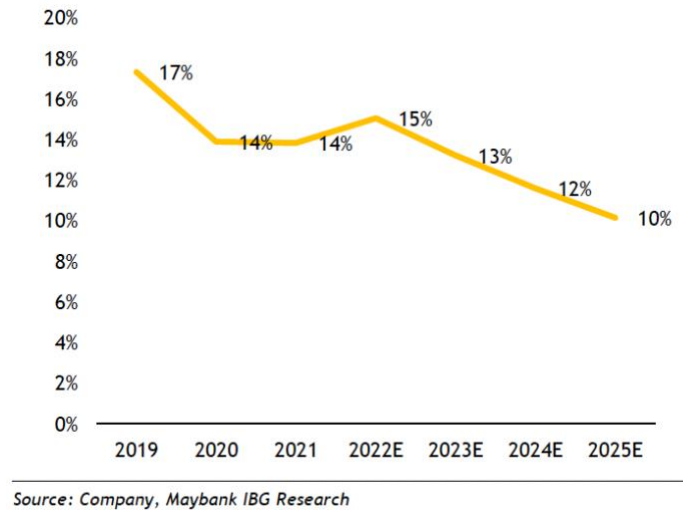


Figure 63: Cost of Sale + Opex as a % of GMV

## 9. Top 3 Most Important Financial Ratios to change to ensure Grab's Long-Term Profitability

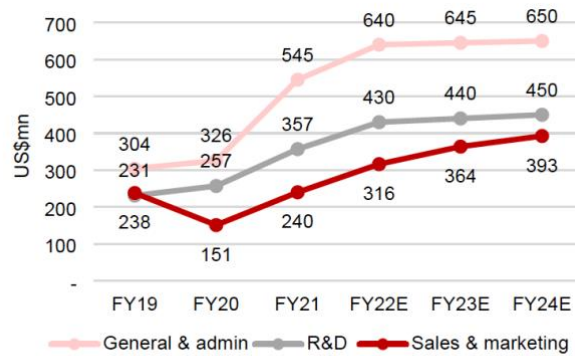
### Gross Margin

Grab's Gross Margin (GM) must increase. From FY20 to FY21, GM is -22.8% and -7.4% respectively. This is because of the extensive amount of incentives given to cope with the dynamic economic scene, as well as an inefficient cost structure arising from the lack of scale in its business segments. Realistically, the gross profit margin can change drastically in 5 - 10 years as long as Grab can continue expanding to reap more economies of scale, as well as keep its incentives under control. Whether Grab can continue expanding rapidly for the next 5 - 10 years like it did before is subjective; but it is possible.

### General and Administration Expense % of Revenue (G&A%Revenue)

Grab's G&A% Revenue ratio must decrease. 40% - 45% of Grab's operation costs stem from G&A expenses alone. G&A expenses increased by \$219 million to \$545 million (67%) from 2020 to 2021 primarily due to higher staff compensation costs and higher consultancy fees with the expansion of Grab's operations. Grab's expansion plans will result in higher G&A expenses, but as Grab converges a stable state, so too should its G&A% Revenue ratio taper down. This is highly likely to happen as Grab cannot continue to grow at pre-IPO rates over the next 10 years.





Source: Company data, CRSHK estimates

Figure 64: General & Administrative, R&D and Sales & Marketing breakdown

### R&D expense % of Revenue

Grab's R&D% of revenue must also change drastically for Grab to be viable and profitable in the long run. Currently, grab needs to continue investing heavily in R&D to capture more consumers in the market it operates in. This is consistent with Grab's appeal as a super app – it has to innovate to produce more offerings which then incentivizes consumers to keep using it. Realistically, this ratio can change drastically if Grab attains enough dominance over the markets it operates in.

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