

# Baidu (BIDU US)

## Solid cloud revenue growth a bright spot

Baidu announced (18 Feb) 4Q24 results: Baidu Core revenue was RMB27.7bn, 3.5% better than Bloomberg consensus estimates; non-GAAP OP of Baidu Core reached RMB4.6bn in 4Q24, 1% ahead of consensus. For 2024, Baidu Core revenue totalled RMB104.7bn, up 1.3% YoY, and non-GAAP OP was RMB23.9bn, down 3% YoY. Driven by both strong Al-related GPU cloud revenue growth, as well as cross-selling from GPU cloud to CPU cloud and other cloud services, the 26% YoY growth in cloud services revenue was a solid beat to consensus, and we believe the growth trend of cloud business could sustain in 2025E. We narrow YoY decline forecast for core search ads business revenue to 0.7% in 2025E (from 1.3% previously; 2024: -2.8%) as business adjustment impact is likely better than feared. Combined with a lift in forecast of cloud services revenue, we raise 2025E revenue/non-GAAP NP forecast by 1%/4%. Our SOTP-based TP is lifted by 3% to US\$149.2. BUY.

- Solid cloud revenue growth beat consensus and likely to sustain in 2025E. Baidu Cloud revenue reached RMB7.1bn in 4Q24, up 26% YoY (4Q23: 11%; 3Q24: 11%), and lifted its contribution to Baidu Core to 26% (4Q23: 20%). Management highlighted strong growth momentum for AI Cloud: ERNIE handled approximately 1.65 billion API calls daily in Dec 2024, with external API calls increasing by 178% QoQ. Margin expansion trend also sustained for cloud business in 4Q24, due to strong infrastructure capability and scale effect. Driven by the strong growth momentum which we believe could sustain, we lift 2025E cloud revenue growth forecast from 13% to 26% YoY (2024: 17%).
- YoY growth of ads revenue likely hit bottom but still takes time to return to positive trajectory. In 4Q24, Baidu Core's online ads revenue was RMB17.9bn, down 6.5% YoY, but 1% better than consensus. Currently, about 22% of Baidu's search results are filled with Gen-Al generated results (mid-Nov 2024: 20%), and c. 83% of Baidu App's MAU have been engaged with generated content (mid-Nov 2024: 70%). Management noted a continuous improvement on user metrics: search queries per user on the Baidu app grew by 2% YoY in Dec 2024. With gradual and mild increase in monetization of Gen-Al related results, we are estimating a 5.5% YoY decline for Baidu Core ads business revenue in 1Q25E, and is looking for 0.7% YoY decline in core search ads business revenue in 2025E (previous: 1.3%). Backed by the enhancement in monetization of Gen-Al generated search results, we are positive that ads revenue should return to positive growth trajectory in 2H25E.
- Margin recovery could come along with recovery in ads business ahead. Non-GAAP OPM for Baidu Core was 16.8% in 4Q24, down 5.8ppts YoY and 0.4ppts shy of consensus, due to increase in Al-related investment, as well as one-time losses of RMB1.0bn including the accrual of expected credit losses, write-down of inventories and others. Although increase in revenue contribution from lower-margin cloud business (vs. group average level) and headwinds for relatively high-margin ads revenue growth could still weigh on overall OPM of Baidu Core in the near term, we are positive that margin recovery should come along with recovery in ads business in 2H25E. We forecast 2025E non-GAAP OPM of 21.7% for Baidu Core (2024: 22.8%).

#### **BUY (Maintain)**

 Target Price
 U\$\$149.20

 (Previous TP
 U\$\$144.60)

 Up/Downside
 65.5%

 Current Price
 U\$\$90.16

**China Internet** 

**Saiyi HE, CFA** (852) 3916 1739 hesaiyi@cmbi.com.hk

Ye TAO, CFA franktao@cmbi.com.hk

Wentao LU, CFA luwentao@cmbi.com.hk

Joanna Ma (852) 3761 8838 joannama@cmbi.com.hk

#### Stock Data

Mkt Cap (US\$ mn)	31,533.5
Avg 3 mths t/o (US\$ mn)	330.9
52w High/Low (US\$)	115.13/77.43
Total Issued Shares (mn)	349.8

Source: FactSet

Shareholding Structure
Robin Yanhong Li
Source: HKEx

#### Share Performance

	Absolute	Relative
1-mth	8.7%	6.6%
3-mth	4.8%	-0.6%
6-mth	0.0%	-10.8%

Source: FactSet

# 12-mth Price Performance (US\$ BIDU US 140 130 120 110 90 80 70 Feb-24 May-24 Aug-24 Nov-24

Source: FactSet



## **Earnings Summary**

(YE 31 Dec)	FY23A	FY24A	FY25E	FY26E	FY27E
Revenue (RMB mn)	134,598	133,125	138,802	148,202	156,580
YoY growth (%)	8.8	(1.1)	4.3	6.8	5.7
Adjusted net profit (RMB mn)	28,747.0	27,002.0	26,988.9	28,174.0	30,419.9
YoY growth (%)	39.0	(6.1)	(0.0)	4.4	8.0
EPS (Adjusted) (RMB)	81.06	77.20	77.17	80.55	86.98
Consensus EPS (RMB)	na	71.43	69.71	79.63	89.41
P/E (x)	11.3	9.6	10.3	9.9	9.0
ROE (%)	8.4	9.0	7.6	7.1	7.0

Source: Company data, Bloomberg, CMBIGM estimates



# **Quarterly results and estimates**

Figure 1: Baidu: quarterly financial results

(RMBbn)	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24	4Q24 Consensus	Diff%
Baidu Group										
Online marketing	18.0	21.1	21.3	20.8	18.5	20.6	20.1	19.3	19.0	1.8%
YoY growth (%)	6.2%	15.4%	7.0%	6.3%	2.9%	-2.2%	-5.8%	-7.0%		
Other services	13.2	13.0	13.1	14.1	13.0	13.3	13.4	14.8	14.2	4.0%
YoY growth (%)	14.7%	14.0%	4.0%	4.7%	-1.1%	2.6%	2.7%	4.5%		
Total revenue	31.1	34.1	34.4	35.0	31.5	33.9	33.6	34.1	33.4	2.2%
YoY growth (%)	9.6%	14.9%	5.9%	5.7%	1.2%	-0.4%	-2.6%	-2.4%		
Gross profit	16.0	17.9	18.2	17.5	16.2	17.5	17.2	16.1	16.4	-1.5%
Operating profit	5.0	5.2	6.3	5.4	5.5	5.9	5.9	3.9	4.9	-19.8%
Non-GAAP net profit	5.7	8.0	7.3	7.8	7.0	7.4	5.9	6.7	4.8	39.1%
YoY growth (%)	48%	44%	23%	44%	22%	-8%	-19%	-13%		
GPM (%)	51.3%	52.5%	52.7%	50.2%	51.5%	51.7%	51.1%	47.2%	49.0%	-1.8 ppt
OPM (%)	16.0%	15.3%	18.2%	15.4%	17.4%	17.5%	17.7%	11.5%	14.6%	-3.2 ppt
Non-GAAP NPM (%)	18.4%	23.5%	21.1%	22.2%	22.2%	21.8%	17.5%	19.7%	14.4%	5.2 ppt
Baidu Core										
Revenue	23.0	26.4	26.6	27.5	23.8	26.7	26.5	27.7	26.8	3.5%
YoY growth (%) Baidu Core - online	7.6%	14.0%	5.3%	7.2%	3.5%	1.1%	-0.2%	0.8%		
marketing	16.6	19.6	19.7	19.2	17.0	19.2	18.8	17.9	17.7	1.1%
YoY growth (%)	6.3%	14.7%	5.2%	6.3%	2.7%	-2.2%	-4.6%	-6.5%		
Baidu Core - Others	6.4	6.8	6.9	8.3	6.8	7.5	7.8	9.8	9.0	8.3%
YoY growth (%)	11.1%	12.1%	5.5%	9.1%	5.7%	10.3%	12.4%	17.5%		
Non-GAAP OP	5.4	6.5	6.7	6.2	5.6	7.0	6.7	4.6	4.6	1.0%
Non-GAAP NP	5.3	7.7	7.0	7.5	6.6	7.3	5.7	6.7	4.8	40.6%
YoY growth (%)	38.5%	41.2%	20.6%	52.6%	25.8%	-5.3%	-18.4%	-10.1%		
Non-GAAP OPM (%)	23.3%	24.7%	25.1%	22.5%	23.5%	26.2%	25.1%	16.8%	17.2%	-0.4 ppt
Non-GAAP NPM (%)	22.9%	29.1%	26.2%	27.3%	27.8%	27.3%	21.4%	24.3%	17.9%	6.4 ppt

Source: Company data, Bloomberg, CMBIGM estimates

# Changes in forecast and valuation

Figure 2: Baidu forecast revision

	Current				Previous	Change (%)			
RMB bn	2025E	2026E	2027E	2025E	2026E	2027E	2025E	2026E	2027E
Revenue	138.8	148.2	156.6	136.4	143.3	-	1.7%	3.4%	-
Gross profit	70.8	76.2	81.3	68.6	72.0	-	3.1%	5.9%	-
Non-GAAP net profit	27.0	28.2	30.4	26.0	27.5	-	3.7%	2.4%	-
Gross margin	51.0%	51.4%	51.9%	50.3%	50.2%	-	0.7 ppt	1.2 ppt	-
Non-GAAP net margin	19.4%	19.0%	19.4%	19.1%	19.2%	-	0.4 ppt	-0.2 ppt	-

Source: CMBIGM estimates



# SOTP valuation of US\$149.2 per ADS

Our new SOTP-based target price of US\$149.2 comprises, per ADS:

- 1) US\$51.7 for Baidu Core (mainly including the core ads business, excluding Apollo and Baidu Cloud), based on 5.0x 2025E non-GAAP PE (was US\$49.7 based on 5.0x 2024E PE);
- 2) US\$0.3 for Apollo ASD (unchanged), based on 2.0x 2030E revenue, and discounted back using a 13.0% WACC.
- 3) US\$37.6 for Baidu Cloud, based on 3.4x 2025E PS (was US\$32.6 per ADS based on 3.4x 2025E PS);
- 4) US\$59.6 for net cash, iQIYI and other investments (was US\$62.7), with a 30% holding discount applied to the per share valuation of US\$85.1.

Figure 3: Baidu: SOTP valuation

Segment	NOPAT/Revenue (USDmn)	Valuation method/multiple	Valuation (RMBmn)	Valuation (USDmn)	Baidu's stake	Valuation of Baidu's stake (USDmn)	USD/ADS	Valuation as % of total (%)
Core business and cash								
1) Baidu core (ex-Apollo and Cloud)	3,618	5.0	130,235	18,088	100.0	18,088	51.7	34.7
2) Apollo ASD			714	99	100.0	99	0.3	0.2
3) Baidu Cloud (ex-ASD)	3,816	3.4	94,666	13,148	100.0	13,148	37.6	25.2
Valuation of core business						31,336	89.6	60.1
iQIYI, strategic investment	, and net cash							
1) iQIYI		Market value	17,550	2,438	45.4	1,107	3.2	
2) Trip.com group		Market value	335,504	46,598	10.8	5,033	14.4	
3) Uxin		Market value	6,495	902	9.1	82	0.2	
4) HAND Enterprise Solutions		Market value	12,271	2,886	5.3	152	0.4	
5) Kuaishou		Market value	233,948	32,493	3.1	1,009	2.9	
6) Yusys Technologies		Market value	15,260	2,119	5.1	109	0.3	
4) Net cash		CMBI estimates	160,472	22,288	100.0	22,288	63.7	
Valuation of iQIYI, investm	ents, and net cash					29,779	85.1	
Valuation of iQIYI, investm	ent, and net cash (	with 30% holding di	scount)			20,845	59.6	39.9
Total Baidu valuation (US\$mn)						52,181		
Number of ADS outstanding (mn)						350		
Valuation per ADS (US\$)						149.2		

Source: Company data, CMBIGM estimates

Note: American depositary share (ADS); iQIYI (IQ US); Trip.com Group (TCOM US); Uxin (UXIN US); HAND Enterprise solution (300170 SH); Kuaishou (1024 HK); Yusys Technologies (300674 SH)

#### Risks

- 1) Slower-than-expected ramp-up in revenue generation from Gen-Al related business.
- 2) Slower-than-expected margin expansion.



# **Financial Summary**

INCOME STATEMENT	2022A	2023A	2024A	2025E	2026E	2027E
YE 31 Dec (RMB mn)						
Revenue	123,675	134,598	133,125	138,802	148,202	156,580
Cost of goods sold	(63,935)	(65,031)	(66,102)	(68,027)	(71,961)	(75,302)
Gross profit	59,740	69,567	67,023	70,775	76,241	81,278
Operating expenses	(43,829)	(47,711)	(45,753)	(49,299)	(52,212)	(54,397)
SG&A expense	(20,514)	(23,519)	(23,620)	(25,123)	(26,973)	(28,028)
R&D expense	(23,315)	(24,192)	(22,133)	(24,176)	(25,239)	(26,370)
Operating profit	15,911	21,856	21,270	21,476	24,029	26,881
Share of (losses)/profits of associates/JV	(1,910)	(3,799)	(691)	846	1,209	1,595
Adjusted EBITDA	29,663	35,824	33,077	33,697	36,726	40,006
Net Interest income/(expense)	3,332	4,761	5,138	5,309	5,523	5,642
Foreign exchange gain/loss	(1,484)	595	1,076	0	0	0
Other income/expense	(5,737)	1,785	1,829	0	0	0
Pre-tax profit	10,112	25,198	28,622	27,630	30,762	34,117
Income tax	(2,578)	(3,649)	(4,447)	(4,900)	(6,823)	(7,864)
After tax profit	7,534	21,549	24,175	22,730	23,938	26,253
Minority interest	(25)	1,234	415	597	734	854
Net profit	7,559	20,315	23,760	22,133	23,204	25,399
Adjusted net profit	20,680	28,747	27,002	26,989	28,174	30,420
BALANCE SHEET	2022A	2023A	2024A	2025E	2026E	2027E
YE 31 Dec (RMB mn)		_0_0.				
Current assets	212,850	230,255	168,849	185,927	207,251	228,804
Cash & equivalents	53,156	25,231	24,832	48,104	67,593	87,444
·		11,503	24,632 11,697	11,697	11,697	11,697
Restricted cash Account receivables	11,330				10,963	
	11,733 136,631	10,848 182,673	10,104 122,216	10,268 115,858	116,998	11,583
Other current assets Non-current assets	178,123	176,504	258,931	272,326	282,124	118,080 <b>292,112</b>
PP&E	23,973	27,960	30,102	51,135	62,323	73,715
	8,095	7,848	7,702	64		(2,730)
Intangibles Goodwill	22,477	22,586	22,586	22,586	(1,326) 22,586	22,586
Other non-current assets	123,578	118,110	198,541	198,541	198,541	198,541
Total assets	390,973	406,759	427,780	458,253	489,374	<b>520,916</b>
Total assets	350,973	400,739	427,760	430,233	409,374	320,910
Current liabilities	79,630	76,451	80,953	76,651	76,548	75,647
Short-term borrowings	5,343	10,257	10,669	10,669	10,669	10,669
Account payables	38,014	37,717	41,443	37,648	36,543	34,748
Other current liabilities	36,273	28,477	28,841	28,334	29,336	30,230
Non-current liabilities	73,538	67,700	63,215	61,979	59,890	56,608
Long-term borrowings	13,722	14,223	15,596	0	0	0
Bond payables	49,461	43,134	36,347	50,707	48,618	45,336
Obligations under finance leases	4,810	5,040	4,973	4,973	4,973	4,973
Deferred income	159	200	231	231	231	231
Other non-current liabilities	5,386	5,103	6,068	6,068	6,068	6,068
Total liabilities	153,168	144,151	144,168	138,630	136,438	132,255
Share capital	0	0	0	0	0	0
Capital surplus	79,855	87,099	87,202	87,305	87,408	87,511
Retained earnings	143,623	156,527	176,418	212,326	245,536	281,158
Other reserves	8,393	9,465	9,870	9,870	9,870	9,870
Total shareholders equity	231,871	253,091	273,490	309,501	342,814	378,539
Minority interest	5,934	9,517	10,122	10,122	10,122	10,122
Total equity and liabilities	390,973	406,759	427,780	458,253	489,374	520,916



					A Wholly Owned 5	ubsidiary Of Chiza Merchania Je
CASH FLOW	2022A	2023A	2024A	2025E	2026E	2027E
YE 31 Dec (RMB mn)						
Operating						
Profit before taxation	10,112	25,198	28,622	27,630	30,762	34,117
Depreciation & amortization	14,725	14,908	6,108	6,335	6,372	6,167
Tax paid	(2,578)	(3,649)	(4,447)	(4,900)	(6,823)	(7,864)
Change in working capital	(16,758)	(13,067)	(570)	1,892	(1,938)	(2,603)
Others	20,669	13,225	(8,479)	5,643	5,810	5,908
Net cash from operations	26,170	36,615	21,234	36,600	34,182	35,725
Investing						
Capital expenditure	(8,286)	(11,190)	(14,211)	(15,632)	(16,101)	(16,101)
Acquisition of subsidiaries/ investments	(14)	(115)	0	0	0	0
Net proceeds from disposal of short-term						
investments	0	0	0	0	0	0
Others	4,356	(39,092)	5,656	(84)	(67)	(54)
Net cash from investing	(3,944)	(50,397)	(8,555)	(15,716)	(16,169)	(16,155)
Financing						
Net borrowings	(6,813)	(13,093)	3,948	(15,596)	0	0
Share repurchases	(1,925)	(4,764)	0	0	0	0
Others	2,348	3,695	(17,707)	17,924	1,474	282
Net cash from financing	(6,390)	(14,162)	(13,759)	2,328	1,474	282
Net change in cash						
Cash at the beginning of the year	47,671	65,236	37,574	36,589	59,801	79,290
Exchange difference	1,729	282	95	0	0	0
Cash at the end of the year	65,236	37,574	36,589	59,801	79,290	99,141
GROWTH	2022A	2023A	2024A	2025E	2026E	2027E
YE 31 Dec						
Revenue	(0.7%)	8.8%	(1.1%)	4.3%	6.8%	5.7%
Gross profit	(0.7%)	16.4%	(3.7%)	5.6%	7.7%	6.6%
Operating profit	51.3%	37.4%	(2.7%)	1.0%	11.9%	11.9%
Net profit	(26.1%)	168.8%	17.0%	(6.8%)	4.8%	9.5%
Adj. net profit	9.8%	39.0%	(6.1%)	(0.0%)	4.4%	8.0%
PROFITABILITY	2022A	2023A	2024A	2025E	2026E	2027E
YE 31 Dec	LULLA	2020/1	202474	20202	20202	20272
Gross profit margin	48.3%	51.7%	50.3%	51.0%	51.4%	51.9%
Operating margin	12.9%	16.2%	16.0%	15.5%	16.2%	17.2%
Adj. net profit margin	16.7%	21.4%	20.3%	19.4%	19.0%	19.4%
Return on equity (ROE)	3.4%	8.4%	9.0%	7.6%	7.1%	7.0%
GEARING/LIQUIDITY/ACTIVITIES	2022A	2023A	2024A	2025E	2026E	2027E
YE 31 Dec	ZUZZA	ZUZJA	ZUZ-IA	2023L	2020L	2027
Net debt to equity (x)	(0.5)	(0.5)	(0.2)	(0.5)	(0.5)	(0.5)
Current ratio (x)	2.7	3.0	2.1	2.4	2.7	3.0
Receivable turnover days	31.6	29.0	26.8	26.1	25.8	25.9
Payable turnover days	223.5	220.6	220.7	203.8	185.6	170.4
VALUATION	2022A	2023A	2024A	2025E	2026E	2027E
YE 31 Dec	20.0	11.2	0.6	10.2	0.0	0.0
P/E	30.2	11.3	9.6	10.3	9.9	9.0
P/E (diluted) P/B	30.5	11.5	9.7	10.4	9.9	9.0
	1.0	0.9	0.8	0.7	0.7	0.6
P/CFPS	12.9	9.2	32.7	10.9	12.7	11.7

Source: Company data, CMBIGM estimates. Note: The calculation of net cash includes financial assets.



### **Disclosures & Disclaimers**

#### **Analyst Certification**

The research analyst who is primary responsible for the content of this research report, in whole or in part, certifies that with respect to the securities or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about the subject securities or issuer; and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific views expressed by that analyst in this report.

Besides, the analyst confirms that neither the analyst nor his/her associates (as defined in the code of conduct issued by The Hong Kong Securities and Futures Commission) (1) have dealt in or traded in the stock(s) covered in this research report within 30 calendar days prior to the date of issue of this report; (2) will deal in or trade in the stock(s) covered in this research report 3 business days after the date of issue of this report; (3) serve as an officer of any of the Hong Kong listed companies covered in this report; and (4) have any financial interests in the Hong Kong listed companies covered in this report.

#### **CMBIGM Ratings**

: Stock with potential return of over 15% over next 12 months BUY HOLD Stock with potential return of +15% to -10% over next 12 months SELL NOT RATED : Stock with potential loss of over 10% over next 12 months

: Stock is not rated by CMBIGM

OUTPERFORM : Industry expected to outperform the relevant broad market benchmark over next 12 months MARKET-PERFORM : Industry expected to perform in-line with the relevant broad market benchmark over next 12 months UNDERPERFORM : Industry expected to underperform the relevant broad market benchmark over next 12 months

#### CMB International Global Markets Limited

Address: 45/F, Champion Tower, 3 Garden Road, Hong Kong, Tel: (852) 3900 0888 Fax: (852) 3900 0800

CMB International Global Markets Limited ("CMBIGM") is a wholly owned subsidiary of CMB International Capital Corporation Limited (a wholly owned subsidiary of China Merchants Bank)

#### Important Disclosures

There are risks involved in transacting in any securities. The information contained in this report may not be suitable for the purposes of all investors. CMBIGM does not provide individually tailored investment advice. This report has been prepared without regard to the individual investment objectives, financial position or special requirements. Past performance has no indication of future performance, and actual events may differ materially from that which is contained in the report. The value of, and returns from, any investments are uncertain and are not guaranteed and may fluctuate as a result of their dependence on the performance of underlying assets or other variable market factors. CMBIGM recommends that investors should independently evaluate particular investments and strategies, and encourages investors to consult with a professional financial advisor in order to make their own investment decisions.

This report or any information contained herein, have been prepared by the CMBIGM, solely for the purpose of supplying information to the clients of CMBIGM or its affiliate(s) to whom it is distributed. This report is not and should not be construed as an offer or solicitation to buy or sell any security or any interest in securities or enter into any transaction. Neither CMBIGM nor any of its affiliates, shareholders, agents, consultants, directors, officers or employees shall be liable for any loss, damage or expense whatsoever, whether direct or consequential, incurred in relying on the information contained in this report. Anyone making use of the information contained in this report does so entirely at their own risk.

The information and contents contained in this report are based on the analyses and interpretations of information believed to be publicly available and reliable. CMBIGM has exerted every effort in its capacity to ensure, but not to guarantee, their accuracy, completeness, timeliness or correctness. CMBIGM provides the information, advices and forecasts on an "AS IS" basis. The information and contents are subject to change without notice. CMBIGM may issue other publications having information and/ or conclusions different from this report. These publications reflect different assumption, point-of-view and analytical methods when compiling. CMBIGM may make investment decisions or take proprietary positions that are inconsistent with the recommendations or views in

CMBIGM may have a position, make markets or act as principal or engage in transactions in securities of companies referred to in this report for itself and/or on behalf of its clients from time to time. Investors should assume that CMBIGM does or seeks to have investment banking or other business relationships with the companies in this report. As a result, recipients should be aware that CMBIGM may have a conflict of interest that could affect the objectivity of this report and CMBIGM will not assume any responsibility in respect thereof. This report is for the use of intended recipients only and this publication, may not be reproduced, reprinted, sold, redistributed or published in whole or in part for any purpose without prior written consent of CMBIGM. Additional information on recommended securities is available upon request.

#### For recipients of this document in the United Kingdom

This report has been provided only to persons (I)falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended from time to time) ("The Order") or (II) are persons falling within Article 49(2) (a) to (d) ("High Net Worth Companies, Unincorporated Associations, etc.,) of the Order, and may not be provided to any other person without the prior written consent of CMBIGM.

#### For recipients of this document in the United States

CMBIGM is not a registered broker-dealer in the United States. As a result, CMBIGM is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. The research analyst who is primary responsible for the content of this research report is not registered or qualified as a research analyst with the Financial Industry Regulatory Authority ("FINRA"). The analyst is not subject to applicable restrictions under FINRA Rules intended to ensure that the analyst is not affected by potential conflicts of interest that could bear upon the reliability of the research report. This report is intended for distribution in the United States solely to "major US institutional investors", as defined in Rule 15a-6 under the US, Securities Exchange Act of 1934, as amended, and may not be furnished to any other person in the United States. Each major US institutional investor that receives a copy of this report by its acceptance hereof represents and agrees that it shall not distribute or provide this report to any other person. Any U.S. recipient of this report wishing to effect any transaction to buy or sell securities based on the information provided in this report should do so only through a U.S.-registered broker-dealer.

#### For recipients of this document in Singapore

This report is distributed in Singapore by CMBI (Singapore) Pte. Limited (CMBISG) (Company Regn. No. 201731928D), an Exempt Financial Adviser as defined in the Financial Advisers Act (Cap. 110) of Singapore and regulated by the Monetary Authority of Singapore. CMBISG may distribute reports produced by its respective foreign entities, affiliates or other foreign research houses pursuant to an arrangement under Regulation 32C of the Financial Advisers Regulations. Where the report is distributed in Singapore to a person who is not an Accredited Investor, Expert Investor or an Institutional Investor, as defined in the Securities and Futures Act (Cap. 289) of Singapore, CMBISG accepts legal responsibility for the contents of the report to such persons only to the extent required by law. Singapore recipients should contact CMBISG at +65 6350 4400 for matters arising from, or in connection with the report.