

Software in Asia

April 2024



Executive summary



Introduction

- Our aim with this report is to provide our views on both the public and private Software markets in Asia. We believe that our perspectives, validated by our coverage and transaction experience on the ground, will be useful to global Software investors interested in Asia, entrepreneurs and other ecosystem participants
- While Software is still a developing market in Asia, the signs we have observed are promising and show significant growth potential. Underpinned by continued **digitalisation**, rapid adoption of **localised, cloud-native** mission-critical Software, **attractive demographics** and other market tailwinds, Asian Software is set to **outpace** Global Software growth, reaching **~20% share of the Global Software market by 2028**



Sector themes

- **Scaled** Software companies have **proven operating leverage** and demonstrated **accelerating cash flow generating ability**
- **Emerging technologies such as AI** are expected to drive **continued expenditure on Software**
- Software founders and management teams are increasingly tracking **non-traditional SaaS-oriented metrics** to meet the needs of **savvy investors**
- Many traditional non-Software companies have **become Software companies** as they **undertake such strategic M&As** to remain relevant and competitive
- Emergence of **local champions** driven by the **heterogeneous nature** of the Asian markets, with differing stages of development and diverse languages and cultures



Valuation environment

- Despite a moderation in valuation multiples post-COVID-19 globally, Asian Software companies have been **resilient**, trading at close to their 10-year median of **~5x EV/Revenue**
- As with Western markets, we have observed a **positive correlation** between Asian Software companies' **growth rates and trading multiples**



Deal activity

- There has been **more mid-market capital raises than M&As** (by value and deal count) across the Asian private markets in the last 5 years
- Deal flow has been noticeably **more active in China and Japan** as they accounted for **more than ~75%** of aggregate deal value in Asia
- Japan has seen a few “**mega**” **M&As. Two sponsor-led deals** (Yayoi and Works Human Intelligence) **alone made up ~US\$5bn** in aggregate deal value
- **Sponsors'** M&A participation appear to be **biased towards ex-China deals**, while **Chinese M&A deals** were largely **led by domestic strategics**



Looking ahead

- Both public and private funding markets have **cooled over the last two years** following the 2021 deal frenzy
- They, however, appear to have **bottomed out** and 2024 is **already showing promising signs** (moderating inflation, lower interest rates prospects, record dry powder, ageing portfolio companies, etc.) of the dawn of a **strong, multi-year rebound for deal activity**
- As Software adoption accelerates in Asia, we anticipate **significant consolidation activity** across Asian peers and the increasing attractiveness of Asia as a destination for internationalisation

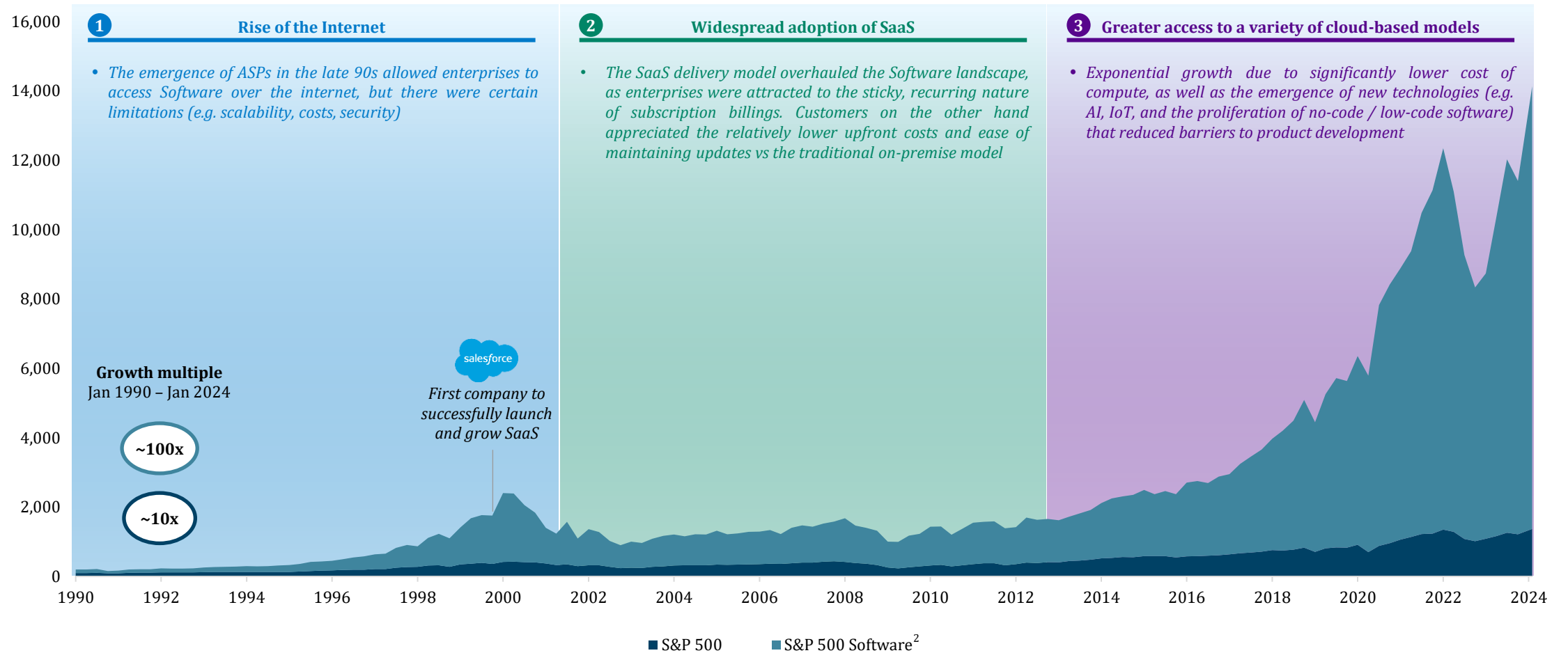
I. Software – the [x]th wonder of the world



Software has become increasingly prominent across different eras and delivery models

Software has created exponential shareholder value in the past three decades and is proving to be one of the most robust business models of all time

S&P 500 Software vs S&P 500 Index¹



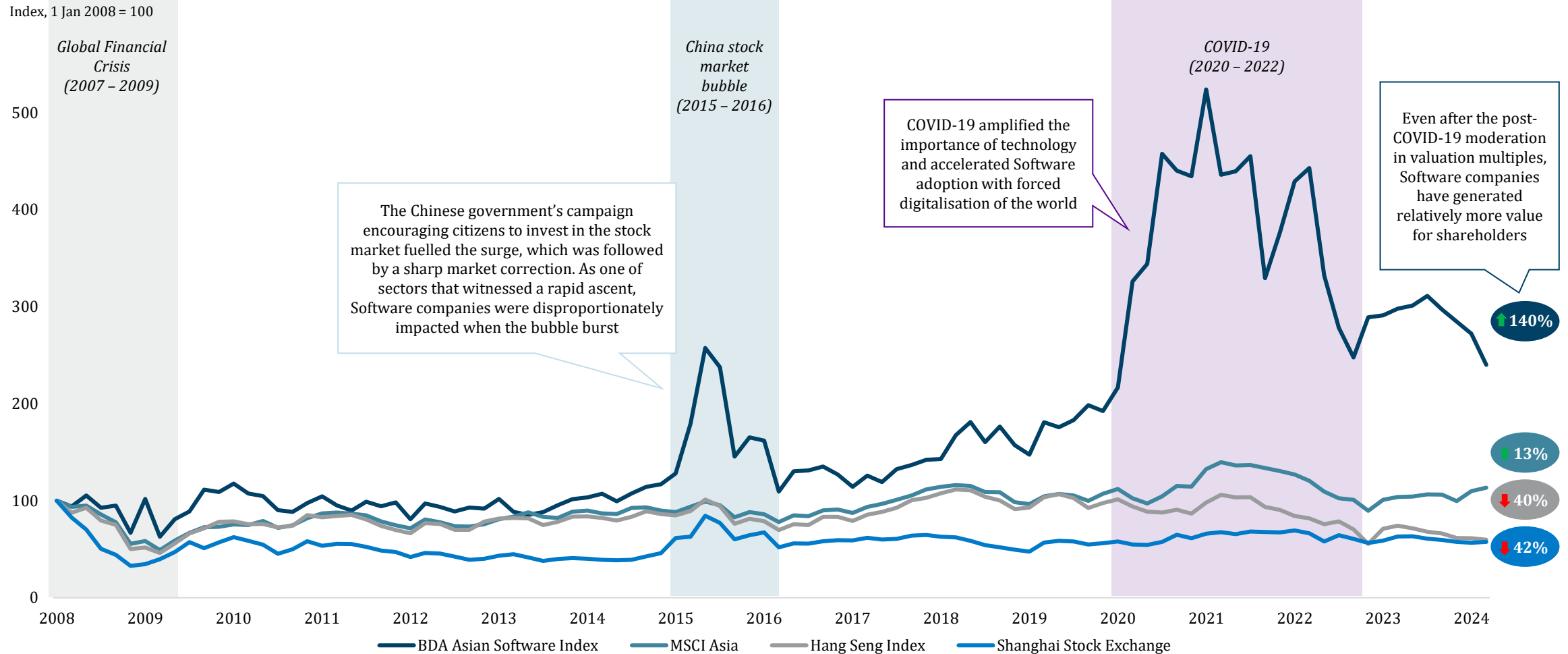
Source: Capital IQ

Notes: (1) Chart depicts index price from end of 1-Jan-90 to 31-Jan-24; (2) Constituents within the S&P 500 which are Software companies

Even in Asia, Software companies have consistently outperformed broad-based indices

Amid market crises, geopolitical tension and regulatory challenges, Asian Software companies have fared significantly better than benchmark indices

BDA Asian Software index¹ vs broad-based Asian indices



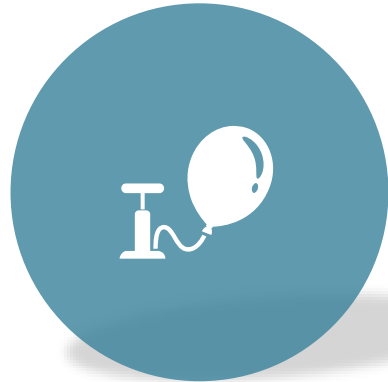
Source: Capital IQ as of 1-Mar-24

Notes: Chart depicts index prices from 1-Jan-08 to 1-Mar-24; (1) BDA Asian Software Index consists of a set of 50 listed Software companies in Asia with US\$100m+ market capitalisation

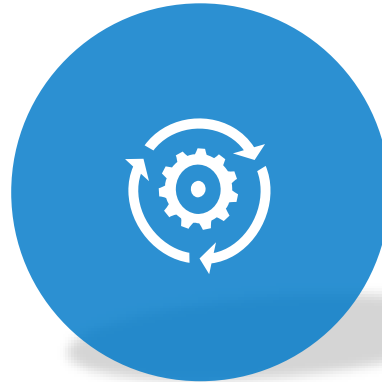
Why is the Software market compounding so quickly?



Attractive growth prospects boosted by various tailwinds



Proven ability to drive significant leverage at scale



Disruptive Software continues to displace traditional assets



Growing awareness and appreciation of the Software model



Every company is becoming a Software company

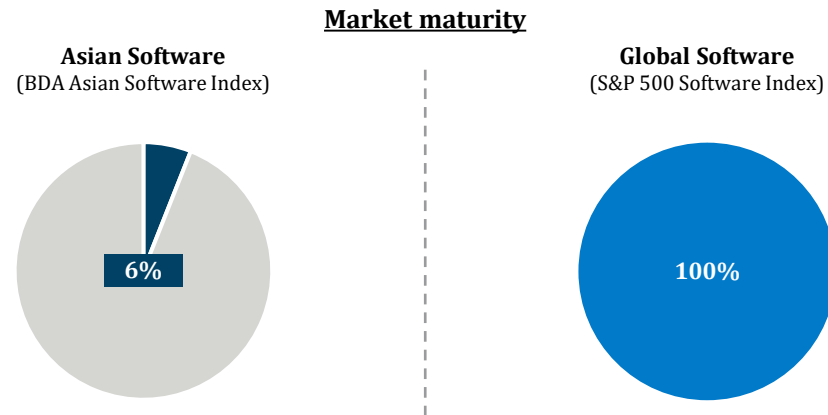


Attractive growth prospects boosted by various tailwinds

Favourable structural drivers are expected to contribute to accelerated growth in the Asian Software market

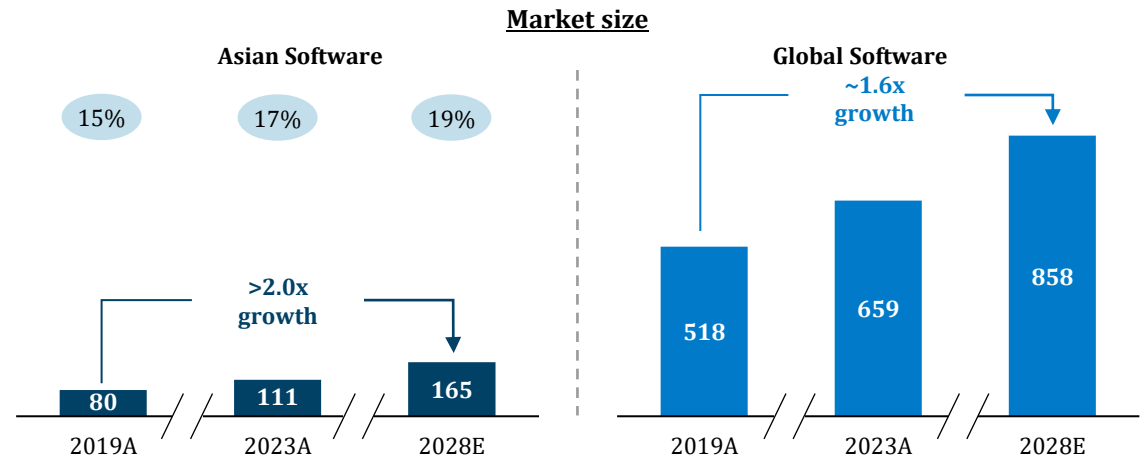
While Asian Software is at a relatively emerging stage of development...

% of index constituents with revenue above US\$1bn



...it is growing faster and forecasted to make up ~20% of the global market by 2028

US\$bn; % of global Software market



Key trends driving accelerated growth in the Asian Software market

Digitalisation

- **Digitalisation** has been a **key driving force** in Asia's **pursuit of improved productivity**, enhancing efficiency across both public and private sectors
- A key contributor to this macro trend is the **rapid transformation of SEA**, as the region catches up to China, India and other developed Asian regions – the SEA digital economy alone achieved **~US\$220bn in transaction value in 2023**

Localisation

- **Rapid adoption** of **localised** mission-critical cloud-native SaaS solutions (e.g. accounting, tax, ERP, and HR) particularly amongst SMEs and startups, to **maximise scalability** and **optimise IT spend**
- **Rise of "hyperlocal" business models**, where companies leverage Software to develop hyperlocal experiences and enter **underpenetrated markets**

Cloudification

- Demand for cloud in Asia is expected to **outpace the rest of the world and reach ~US\$143bn by 2024**
- Accelerated by the pandemic, more companies are turning to cloud services to drive **real business value, resiliency and scalability at lower costs**

Demographics

- **Rising middle-class** and a **digital-savvy, young demographic** is an increasingly common theme in most Asian markets
- **Large, populous emerging countries** such as India, Indonesia and Vietnam are expected to catalyse the **rapid uptake** of Software

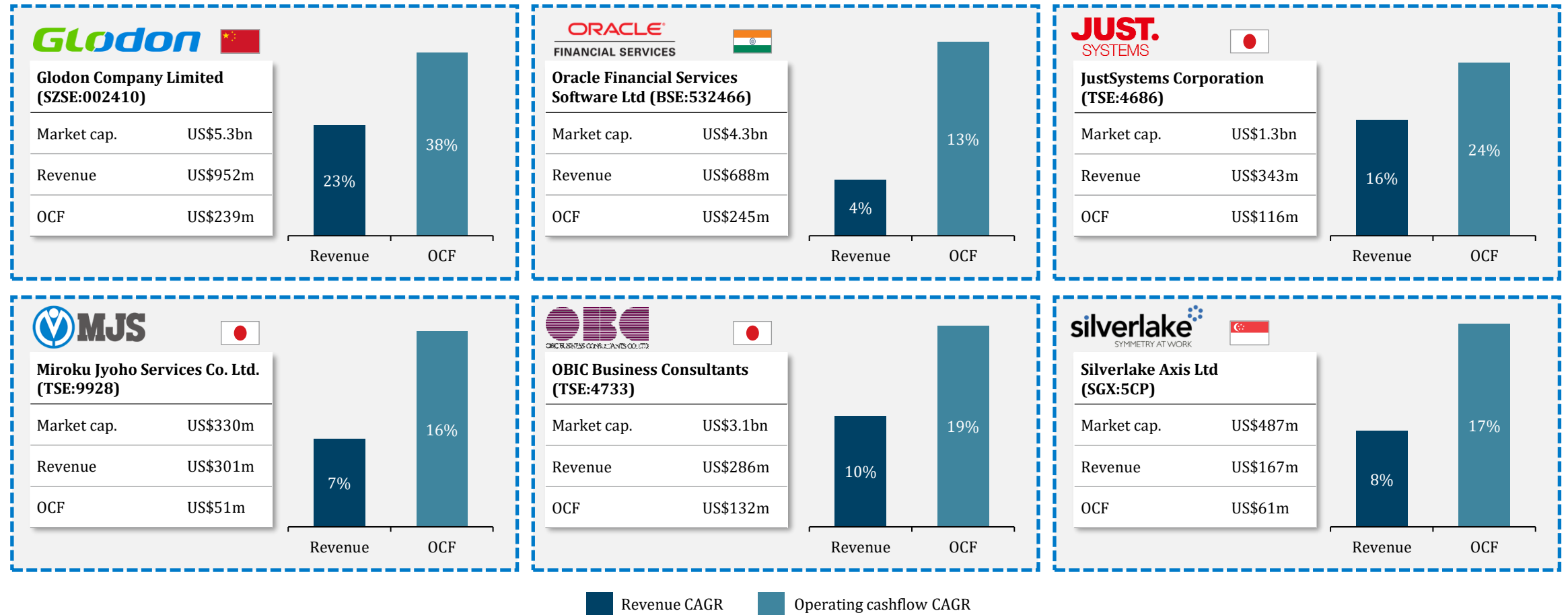


Proven ability to drive significant leverage at scale

Highly scalable business models, evidenced by strong growth in operating cash flows, that eclipsed the increase in revenues in the same period

Growth in revenue and operating cash flows for select companies in the BDA Asian Software Index

FY2018 to FY2022 CAGR



Source: Capital IQ as of 6-Mar-24

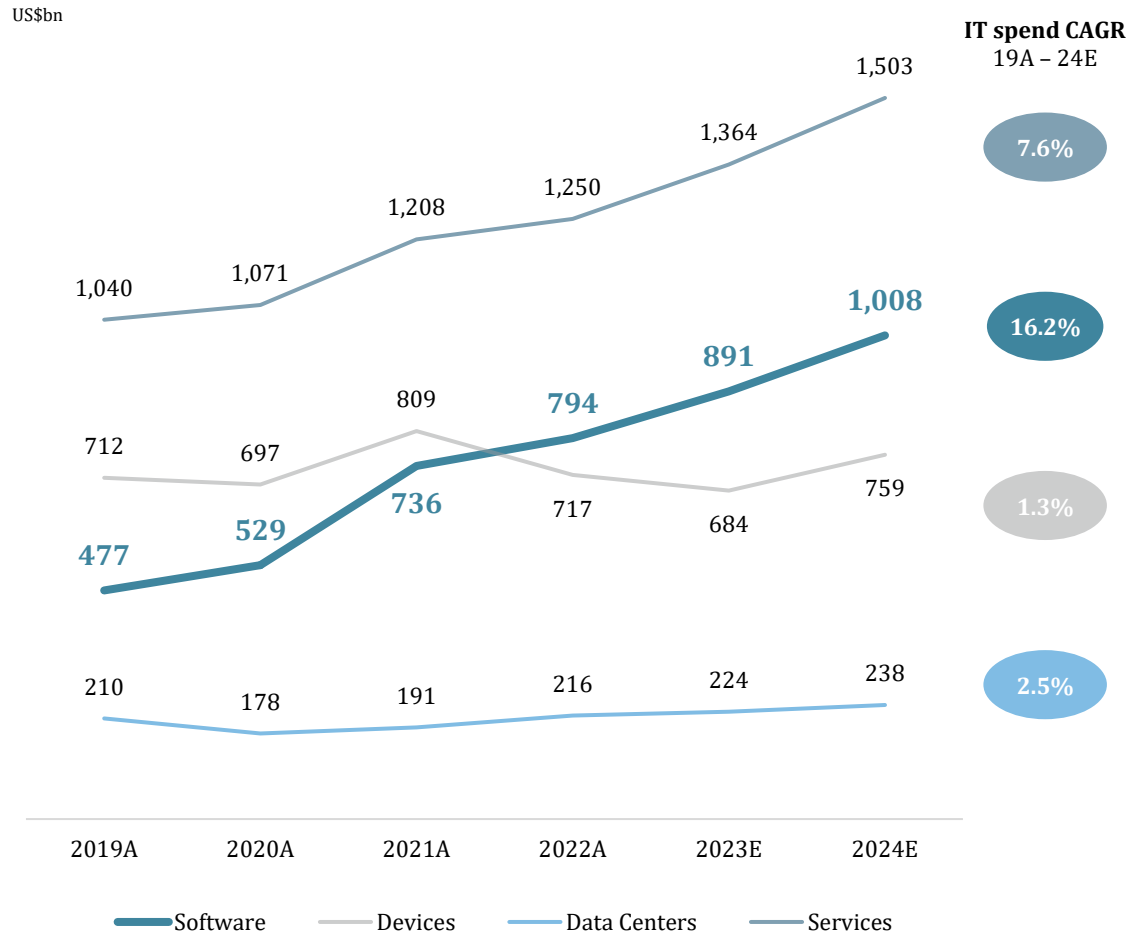
Note: Companies are sorted in descending order of revenue, from left to right and top to down. Revenues and OCFs are as of FY2022 and market capitalisation as of Mar-24. Charts above represent the respective CAGRs from FY2018 to FY2022



Disruptive Software continues to displace traditional assets

Driven by emerging technologies such as AI, Software leads the uptick in corporate IT expenditure by a significant margin

Growth in Software to dwarf hardware & service-related enterprise IT spend...



...as a result of the emphasis on automation and pursuit of superior productivity

"IBM to freeze hiring and replace 7,800 jobs with AI: CEO Arvind Krishna"

"Ford to slash 3,000 jobs to lower costs as it pivots to EVs, software"

"AI is coming for lawyers, again"

"IBM's HR teams saved 12,000 hours in 18 months after using AI to automate 280 tasks"

"Goldman Sachs predicts 300 million jobs will be lost or degraded by AI"

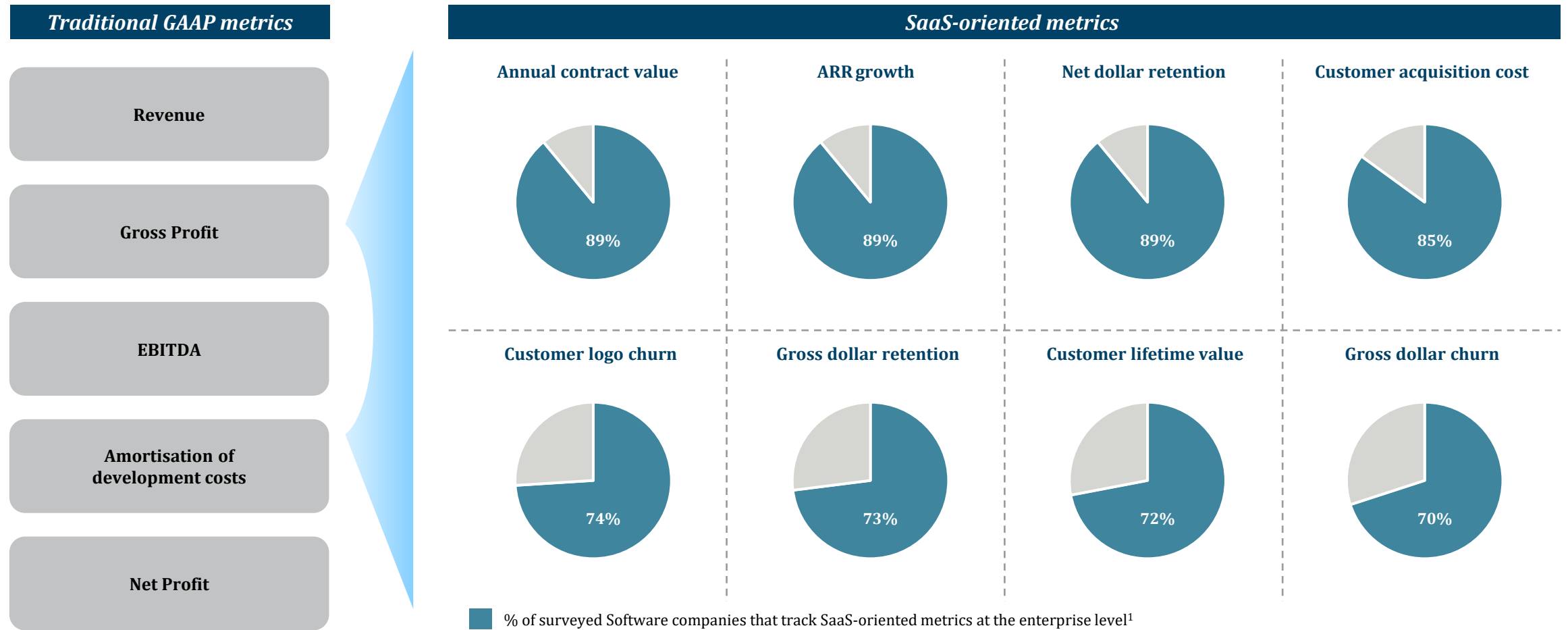
"AI is the top priority for tech spending over the next year"



Growing awareness and familiarity with the SaaS model

Adoption of non-traditional metrics, which are especially important for SaaS businesses, are now more well understood by management teams

Majority of Software companies have realised the need to go beyond traditional financial metrics to support investors' evaluation and benchmarking



Source: RevOps & Mosaic 2022 SaaS Performance Reporting Benchmarks
Note: (1) Survey of finance teams of global B2B Software companies across different sizes and verticals



Every company is becoming a Software company

Traditional companies are increasingly realising the need to evolve into or acquire complementary Software businesses to maintain their competitiveness

Acquisitions of Software companies by non-Software companies

Sorted by descending deal value in respective years

2020				2021				2022				2023 - 2024			
Date	Acquirer	Target	Deal value	Date	Acquirer	Target	Deal value	Date	Acquirer	Target	Deal value	Date	Acquirer	Target	Deal value
Nov-20	Nasdaq	VERAFIN	US\$2.8bn	Apr-21	Panasonic CONNECT	BlueYonder	US\$7.1bn	May-22	BROADCOM	vmware	US\$73bn	Jun-23	Nasdaq	Adenza	US\$11bn
Aug-20	EMERSON	OSI	US\$1.6bn	Nov-21	ERICSSON	VONAGE	US\$6.4bn	Sep-22	Schneider Electric	AVEVA	US\$4.7bn	Feb-24	RENESAS	Altium	US\$5.9bn
Feb-20	Schneider Electric	RIB	US\$1.4bn	Oct-21	EMERSON	aspentech	US\$6.3bn	Jan-22	APTIV	WINDRVR	US\$3.5bn	Apr-23	Deutsche Börse	SimCorp	US\$4.5bn
Dec-20	Honeywell	Sparta Systems	US\$1.3bn	Aug-21	MOODY'S	RMS	US\$2.0bn	Jun-22	中国移动 China Mobile	Venustech	US\$617m	Sep-23	UNITEDHEALTH GROUP	EMIS Group	US\$1.5bn
Aug-20	RWS	SDL*	US\$1.2bn	Jun-21	accenture	NOVETTA	US\$1.0bn	Aug-22	HYUNDAI	42dot	US\$328m	May-23	Edenred	Reward Gateway	US\$1.4bn
Feb-20	First American	docutech.	US\$350m	Apr-21	MasterCard	EKCTO	US\$861m	Feb-22	WALKER & DUNLOP	GEOPHY	US\$298m	Jun-23	VISA	opismo	US\$1.0bn
Jun-20	KEYSIGHT	eggplant	US\$330m	Nov-21	SCHWARZ	XM Cyber	US\$700m	Nov-22	FIDELITY NATIONAL FINANCIAL	TITLEPOINT	US\$224m	Oct-23	OmnicomGroup	Flywheel	US\$900m
Apr-20	中国电信 CHINA TELECOM	SAFETY 平安科技 服务公共安全	US\$251m	Jun-21	Builders FirstSource	PARADIGM Technology for the Building Products Industry	US\$450m	May-22	PUBLICIS GROUPE	Profitero	US\$211m	Jul-23	Johnson Controls	fm:systems	US\$704m
Apr-20	中国移动 China Mobile	AsiaInfo 亚信科技	US\$179m	Dec-21	MasterCard	dynamic yield	US\$320m	Jun-22	Lineage*	TURVO	US\$208m	Oct-23	BIONTECH	InstaDeep™	US\$521m
Jan-20	markem-imaje company	SYSTECH	US\$163m	Nov-21	HILTI	FIELDWIRE	US\$300m	Jan-22	AMERICAN FINANCIAL GROUP, INC.	verikai	US\$170m	Mar-23	TRAVELERS	CORVUS	US\$435m
May-20	ReVance THERAPEUTICS	HINTMD	US\$150m	Sep-21	gm	momenta	US\$300m	Aug-22	CIC 飞龙集团	迪爱斯 (DS Information Technology)	US\$164m	Aug-23	CAREL	Kiona	US\$192m
Dec-20	HYUNDAI DEPARTMENT STORE	HYUNDAI EZWEL	US\$114m	Sep-21	JLL	Building Engines	US\$300m	Dec-22	中国大唐集团有限公司 China Datang Corporation Ltd.	Datang Xianyi	US\$149m	Mar-23	AAR	Trax	US\$140m

Denotes involvement of an Asian target or acquirer



II. Asian Software investment landscape

Asian Software valuations have demonstrated resilience through various market cycles

Asian Software players are trading at healthier, normalised levels following the 2021 market frenzy and are trading close to 10-year median of ~5x EV/Revenue

10-year rolling valuation¹ of Asian Software players

EV/LTM Revenue (x)



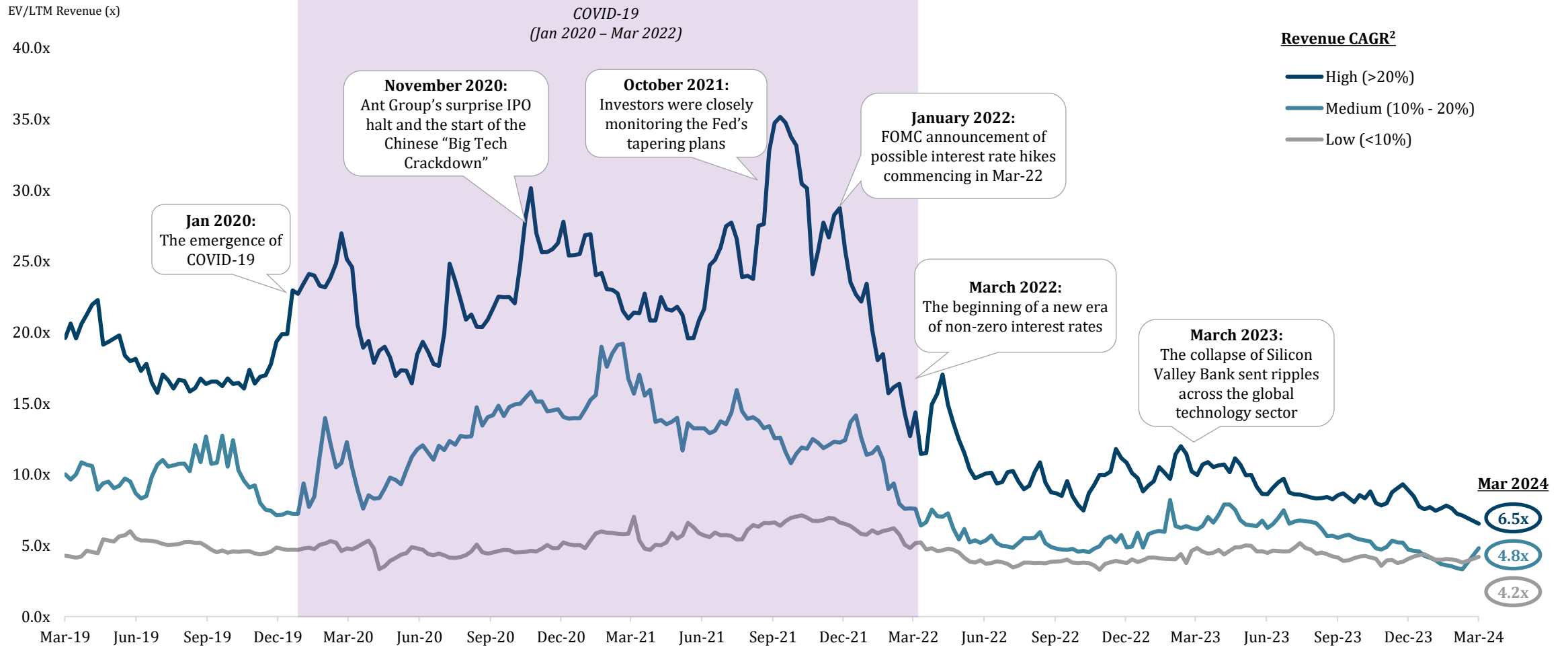
Source: Capital IQ as of 1-Mar-24

Note: (1) Derived from the BDA Asian Software Index

The market continues to ascribe premium multiples for high-growth Asian Software players

Despite the volatile macro-economic environment, high-growth (>20% CAGR) Software players have consistently commanded premium multiples over their peers

Historical Asian Software valuations¹ by growth cohort



Source: Capital IQ as of 1-Mar-24

Notes: (1) Derived from the BDA Asian Software Index; (2) FY2020 - FY2023

While still an emerging sector, Software has permeated numerous verticals in Asia

Thriving ecosystem with a growing number of category leaders across verticals and geographies

Vertical Asian Software players

Automotive	
Engineering & industrials	
Financial services	
POS / retail management	
Supply chain	
Other verticals	

Horizontal Asian Software players

Accounting / tax	
Cybersecurity	
ERP	
HCM	
Marketing/ CRM	
Office / productivity	

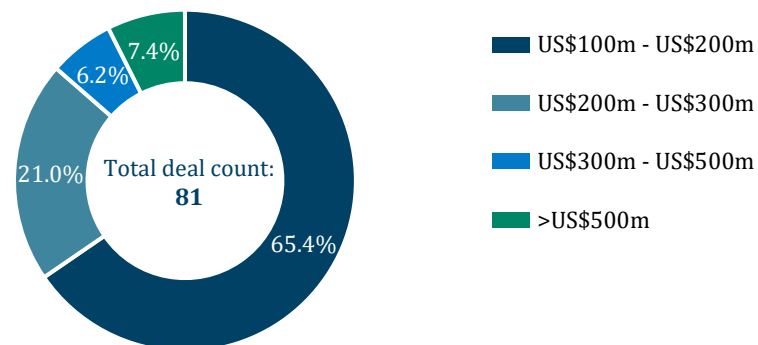
Note: Companies are sorted alphabetically by country and company name from left to right. The list of companies shown above are illustrative and non-exhaustive

Deal activity has clustered around the mature Software markets of Greater China & Japan

There remains significant headroom for growth by way of larger deal sizes, as seen in Western markets and increased participation from other Asian countries

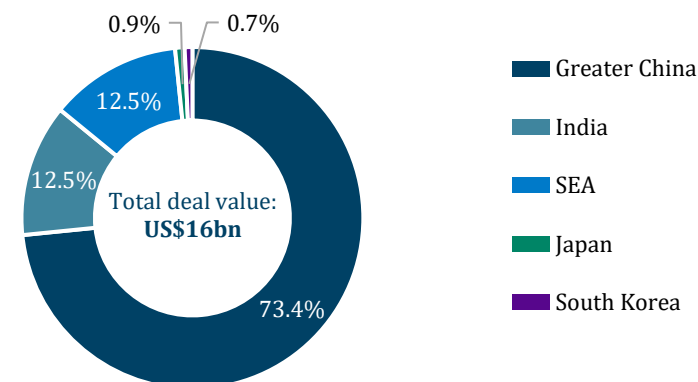
~85% of private capital raises have been within the US\$100m - US\$300m size...

Breakdown by deal size



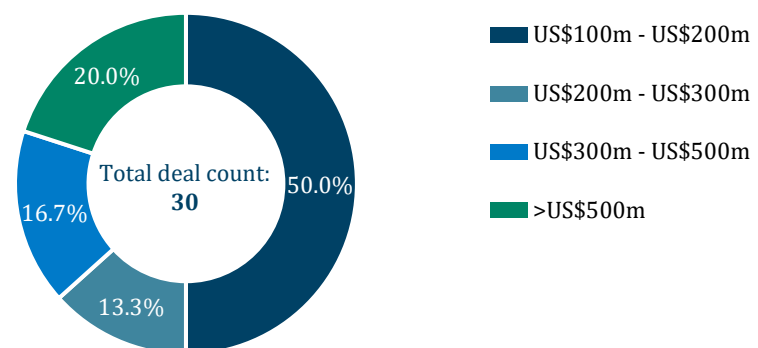
...with Greater China accounting for almost three-quarters of total equity funding

Breakdown by region/country



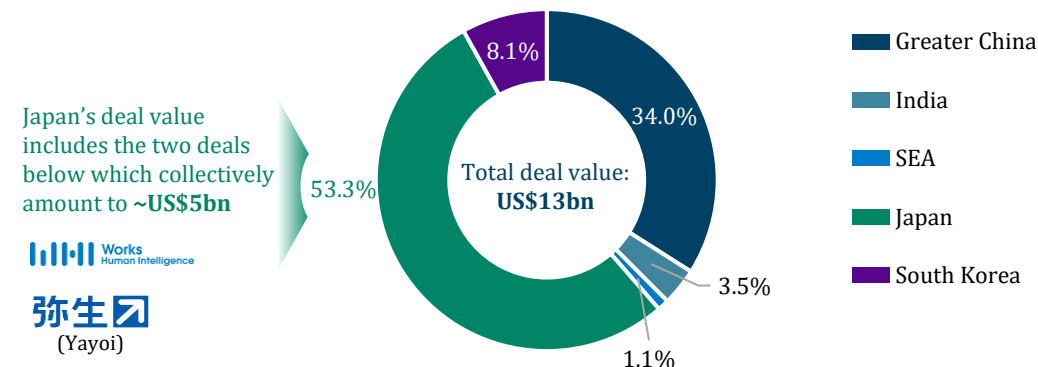
The M&A deal size distribution skews comparatively higher...

Breakdown by deal size



...driven by a couple of "mega" M&As, which took place in Japan

Breakdown by region/country





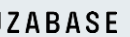


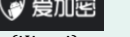
























Sponsors and strategics have distinct regional preferences when it comes to large-cap M&A

Financial sponsor deal activity has centered around ex-China targets; Chinese M&As on the other hand have seen strong domestic, strategic participation

Top 10 Software M&As with disclosed multiples based on deal size in Asia since 2019

Deal size (US\$m)

	Financial sponsors have been more interested in ex-China targets					Chinese M&As have been led by domestic strategics				
	2,625	2,112	450	442	424	617	556	262	251	179
Target										
Target HQ										
Acquirer										
Acquisition Year	2023	2021	2022	2023	2022	2022	2019	2019	2020	2020
Sector	HR management	Accounting / finance	Cloud	Travel / hospitality	Database	Cybersecurity	Cybersecurity	Cybersecurity	Emergency management	Productivity
EV / Revenue	16.9x ¹	10.7x	5.0x	4.8x	3.4x	4.0x	6.2x	12.7x	5.9x	1.3x
% Acquired	50%	100%	27%	35%	100%	23%	23%	100%	19%	20%

Source: Capital IQ, Mergermarket, Pitchbook, BDA research

Note: (1) BDA estimates based on Works Human Intelligence's FY2022 revenue of ~US\$310m

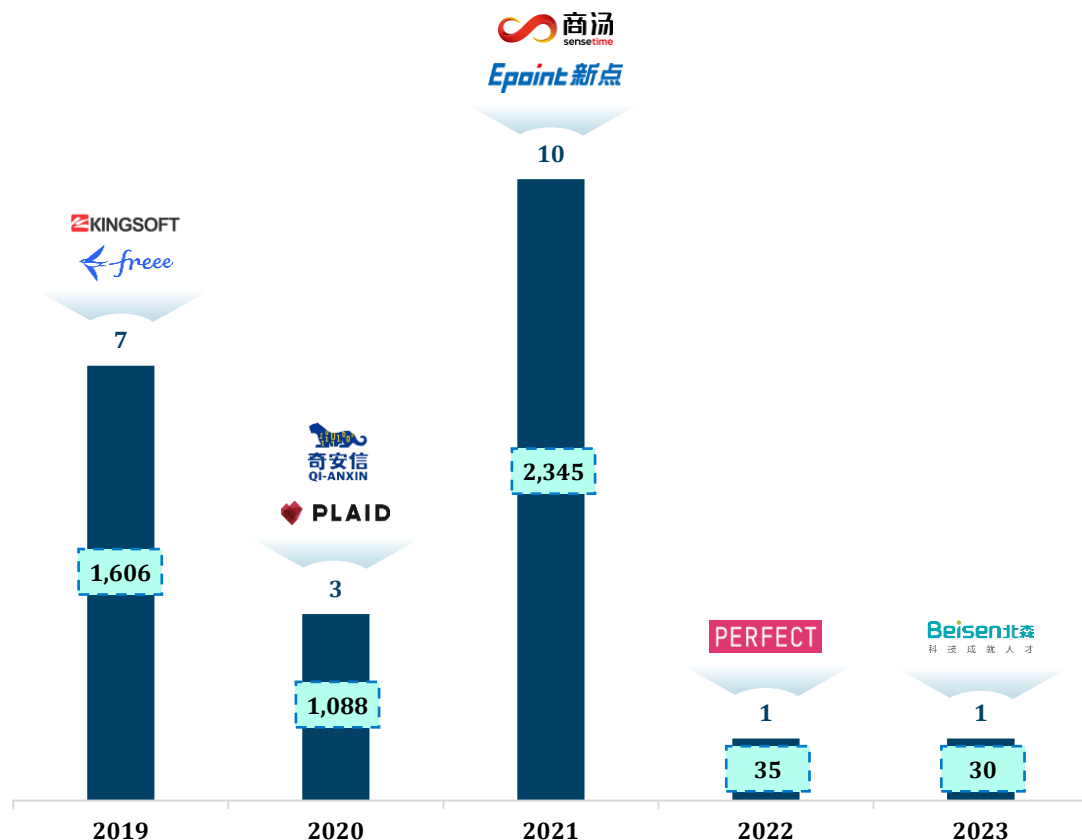
While Asian Software deal momentum has cooled over the last two years...

The public and private Software markets were primed for a healthy reset and seem to have bottomed out following the 2021 market frenzy

Asian Software IPOs¹ since 2019

of IPOs; **US\$m** Total deal size

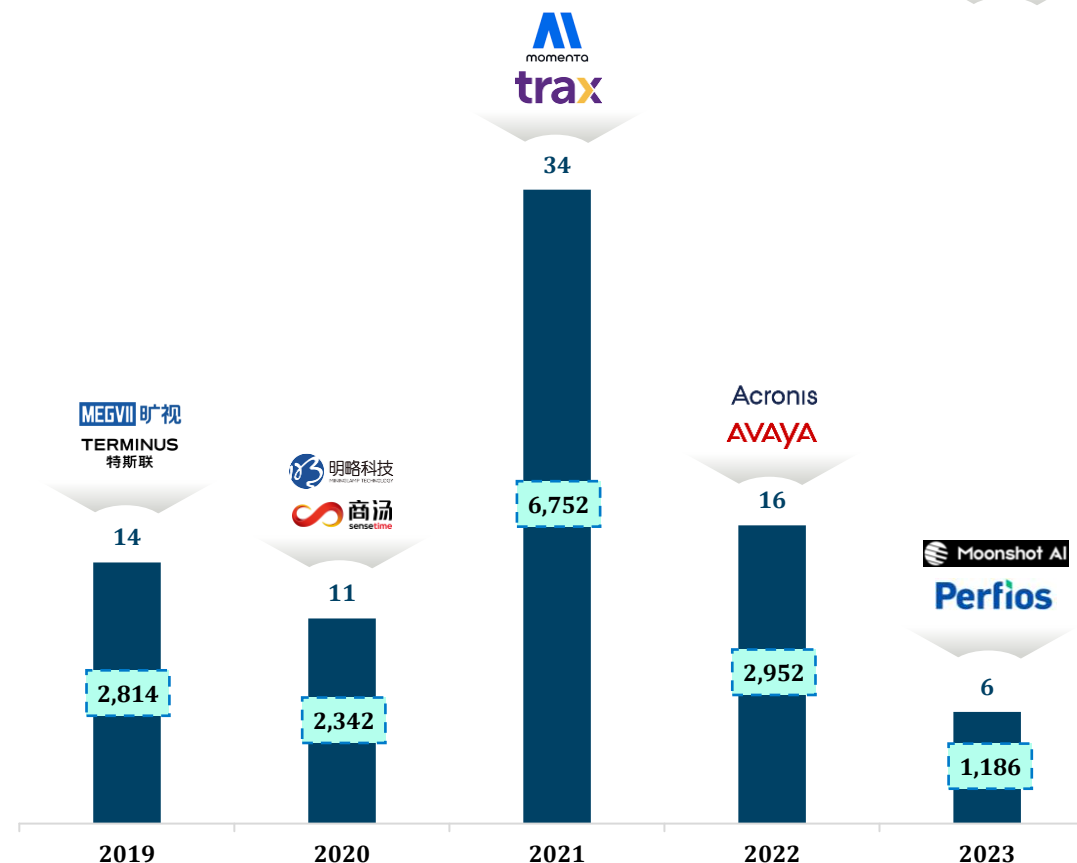
Select IPOs



Asian Software capital raises² since 2019

of cap raises; **US\$m** Total deal size

Select cap raises



Source: Capital IQ as of 1-Mar-24, Mergermarket, PitchBook

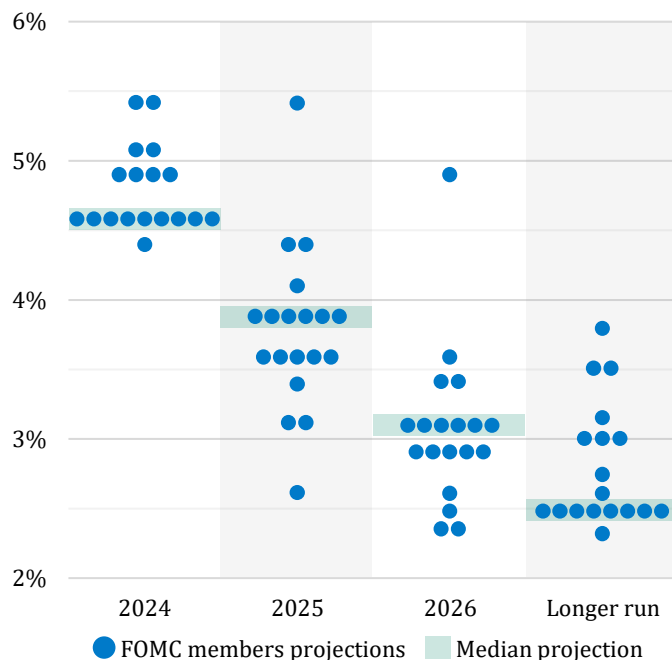
Notes: (1) Companies in the BDA Asian Software Index that went public since 2019; (2) Capital raises with minimum deal size of US\$100m

...2024 is already showing promising signs of the dawn of a strong, multi-year rebound

Key drivers being: (i) cheaper access to capital; (ii) improving investor optimism; and (iii) pent-up capital to be deployed

Forecasted rate cuts drive lower borrowing costs

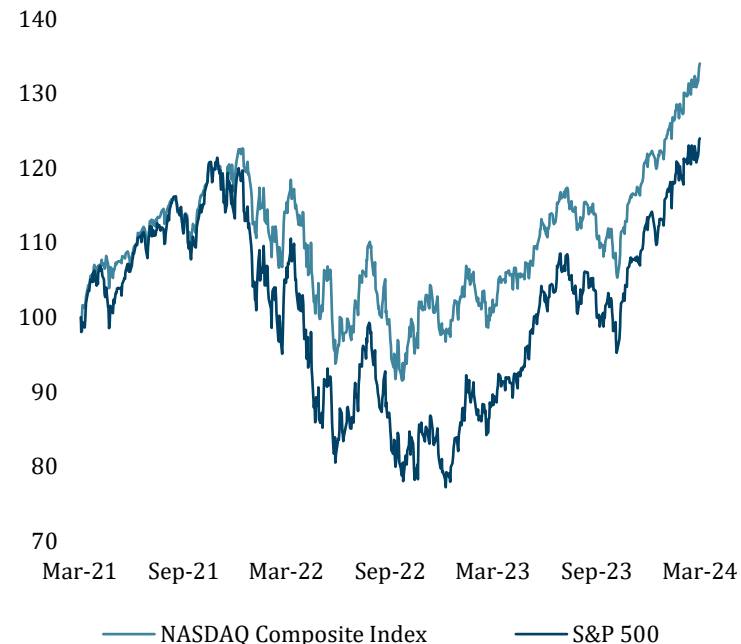
Federal funds rate projections at the end of specified year, as of 20-Mar-2024



- On 20 Mar 2024, the US Federal Reserve (“Fed”) held interest rates steady in the range of 5.25% - 5.50% for the **fifth consecutive period**
- They are committed to beginning easing monetary policy in the second half of this year and expect to continue **implementing multiple cuts in the coming few years**

Improving market sentiments¹

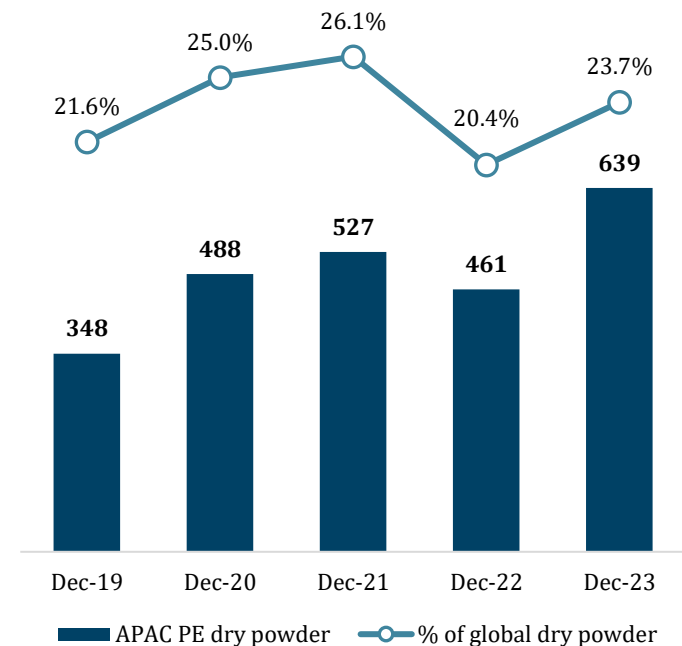
Index, 24-Mar-21 = 100



- The S&P 500 grew ~24% in 2023, driven by optimism over (i) AI companies resulting in a **rally in technology stocks**, as well as (ii) **near-term cuts in the Fed rates**
- This **growth is forecasted to continue in 2024** – Wall Street banks have continued to revise their year-end S&P 500 targets upwards

Record dry powder levels among financial investors

US\$bn



- Dry powder from APAC focused PE investors have grown at a **CAGR of over 16% from 2019 to 2023**, reaching a record high of US\$639bn as of Dec-23 – accounting for ~24% of global dry powder
- With greater ability to spend, these sponsors are **eager to deploy capital** to meet their return requirements

Source: Capital IQ as of 21-Mar-24, Deloitte, Reuters
 Note: (1) Chart depicts index prices from 24-Mar-21 to 24-Mar-24

Pressure to exit longer-dated Software investments should further catalyse M&A in the sector

Asian Software M&A momentum is expected to be buoyed by financial sponsors' pursuit of liquidity as their portfolios mature and IPO markets remain subdued

Representative Asian Software portfolio companies of select active, global financial investors



years since first investment

Source: Capital IQ, Mergermarket, Pitchbook
 Note: Sequoia's portfolio company information includes spun-off entities i.e. HongShan and Peak XV Partners

Major Software thought leaders concur with the renewed optimism in investment activity



“Three factors have created an environment primed for **PE-sponsored deals in technology and software** in 2024: **low valuations** of private assets relative to the public markets, a **recovery in bank lending** to leveraged buyout transactions and **substantial reserves of PE dry powder**”



“**Technology** is expected to see the **highest growth** in inbound **cross-border M&A in 2024**, with 71% of respondents¹ citing it in their top-three sectors”



“The **consolidation of cloud-based software firms** could also create additional **takeover opportunities for private equity** companies. Many cloud companies flourished after the boosts to remote work and e-commerce in 2020 and 2021, but **more recent innovations in AI** may obviate some of these businesses, while **creating greater demand for others**”



“61% of software buyers plan to **increase technology investment** in 2024 and 92% of organisations are considering investment in **AI-powered software**”

III. Appendix



Basis of preparation and glossary

Basis of preparation

- Our aim with this report is to provide our views on both the public and private Software markets in Asia. We believe that our perspectives, validated by our coverage and transaction experience on the ground, will be useful to global Software investors interested in Asia, entrepreneurs, and other ecosystem participants. Our definition of Asia comprises Greater China, India, Japan, South Korea and SEA
- Below is a high-level overview of our methodologies for selecting the companies and deals that are included in our analyses:

Public markets (BDA Asian Software Index)

- Comprises 50 publicly-listed companies across Asia that are above US\$100m in market capitalisation (as of 1-Mar-2024) that we believe embodies the enterprise Software market
- Through our analysis, we found that the GPMs of this set of companies is typically between 50% - 70% and hover below the 75%+ GPM threshold typically seen in product-oriented companies in developed Software markets (e.g. USA). This is likely because there are relatively fewer pure-play Asian Software companies of scale. Most Asian Software players tend to also offer elements of services and/or hardware. We believe this dilution in product revenue may also impact trading multiples. For reference, the 10-year median EV/ LTM Revenue multiples are:
 - Asia (BDA Asian Software Index): 5.3x
 - USA (S&P 500 Software Index): 7.5x
- All historical data for the BDA Asian Software Index is based on the same list of 50 companies, beginning in the year that they become publicly-listed

Private markets

- We have identified 30 Software M&A transactions in Asia including minority stake acquisitions with disclosed deal sizes of at least US\$100m for the period between 1-Jan-19 and 31-Dec-23
- We have identified 81 Software capital raises in Asia with disclosed deal sizes of at least US\$100m for the period between 1-Jan-19 and 31-Dec-23

Glossary

General		Financial	
AI	Artificial intelligence	20XXA	Actual year 20XX
ASP	Application service provider	20XXE	Expected year 20XX
CEO	Chief Executive Officer	ARR	Annual recurring revenue
CRM	Customer relationship management	CAGR	Compounded annual growth rate
ERP	Enterprise resource planning	EBITDA	Earnings before interest, taxes, depreciation and amortisation
EVs	Electric vehicles	EV/Revenue	Enterprise value / revenue
FOMC	Federal open market committee	FY20XX	Fiscal year 20XX
GenAI	Generative artificial intelligence	GPM	Gross profit margin
HCM	Human capital management	LTM	Last twelve months
HR	Human resources	OCF	Operating cashflows
IPO	Initial public offering	US\$	United States Dollars
IT	Information technology	YTD	Year to date
IoT	Internet of things		
M&A	Mergers and acquisitions		
PE	Private equity		
POS	Point of sale	bn	Billion
SaaS	Software-as-a-service	m	Million
SEA	Southeast Asia		
SME	Small and medium enterprise		

Units of measurement

bn	Billion
m	Million

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