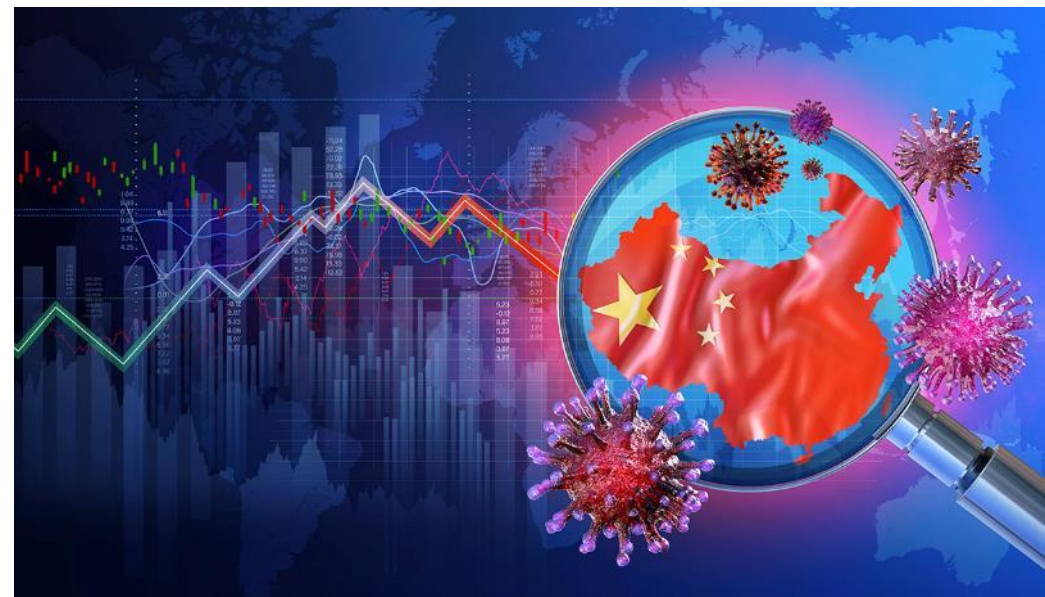


China Fintech Opportunities & Challenges

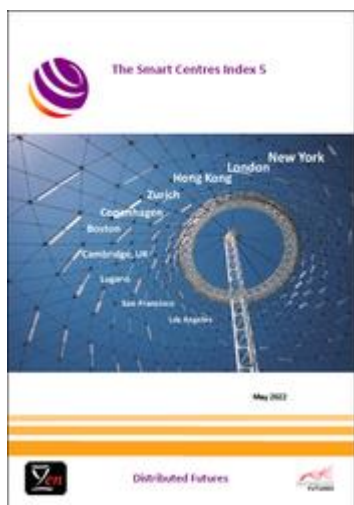
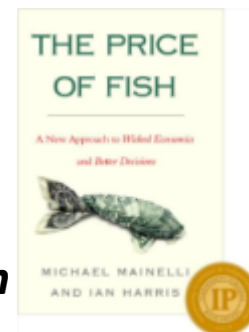
Professor Michael Mainelli
Chairman, Z/Yen Group

22 June 2022, LSE, Centre Building, Houghton Street, London WC2A 2AE



City Of London's Leading Commercial Think-Tank

- ◆ Services – projects, strategy, expertise on demand, coaching, research, analytics, modern systems
- ◆ Sectors – technology, finance, voluntary, professional services, outsourcing
 - *Sunday Times* Book of the Week, **Clean Business Cuisine**
 - Independent Publisher Book Awards Finance, Investment & Economics Gold Prize for **The Price of Fish**
 - British Computer Society **IT Director of the Year 2004** for PropheZy and VizZy
 - DTI **Smart Award 2003** for PropheZy
 - £1.9M **Foresight Challenge Award** for Financial Laboratory visualising financial risk 1997
- ◆ Innovation – policy performance bonds, prediction markets, medical imaging, support vector machines, low-loss electric cables, risk visualisation, smart ledgers, etc.



Agenda

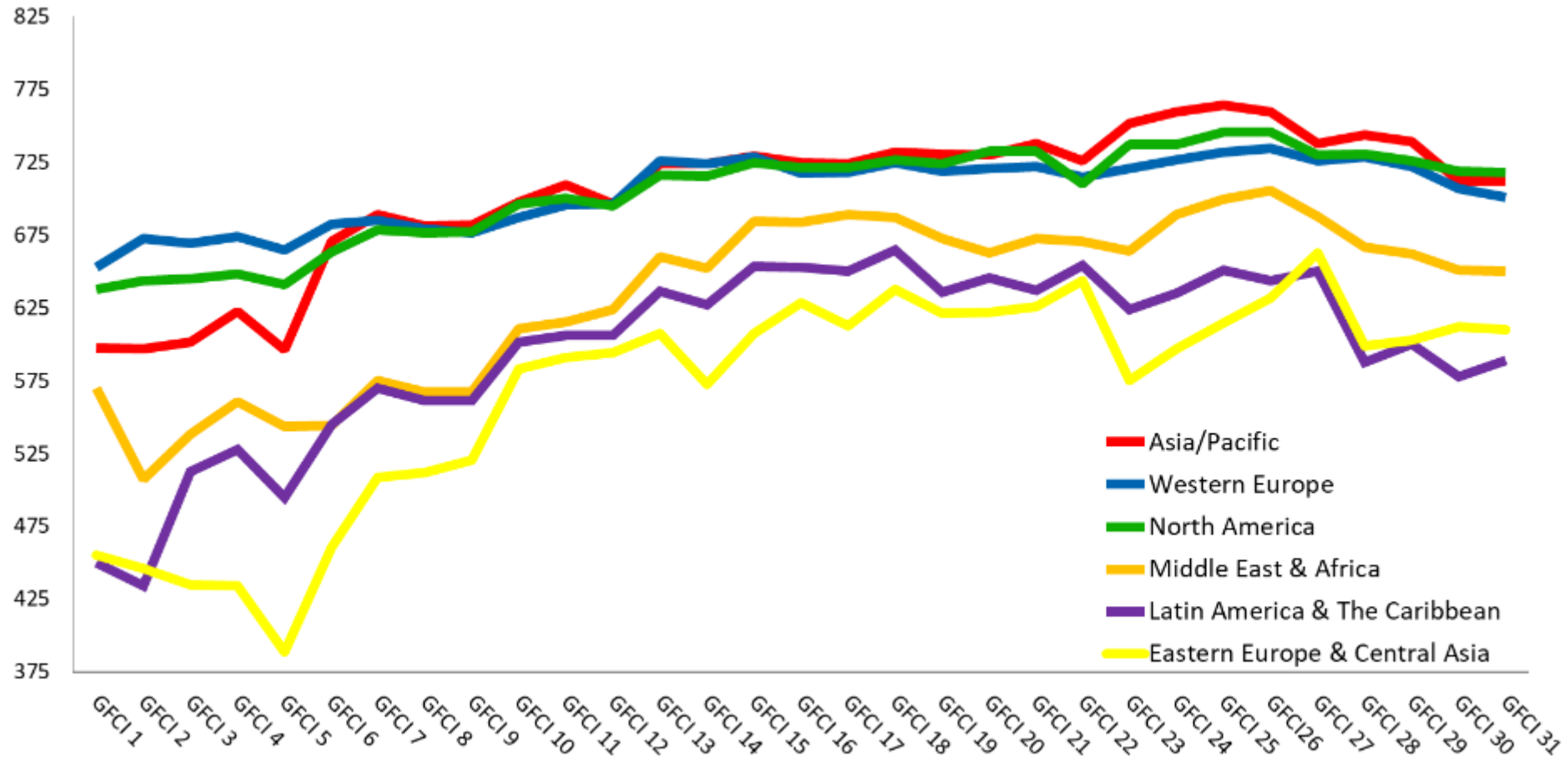
- Chinese Fintech – An Index View
 - Global Financial Centres Index
 - Smart Centres Index
- Observations
 - market size
 - talent
 - innovation
 - structure
 - regulation
- Some Questions



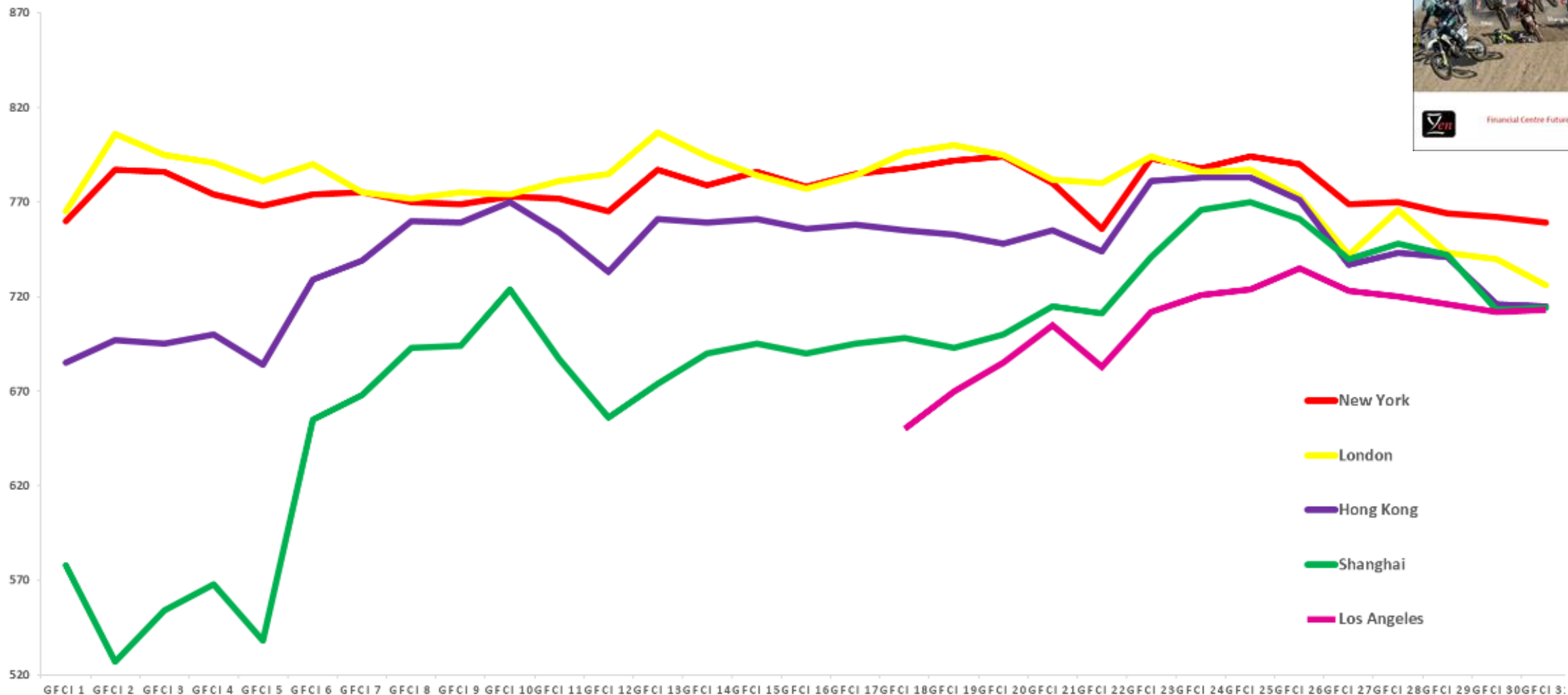
**"Get a detailed grip on the big picture."
Chao Kli Ning**

The Two Decade Asia Story

Average GFCI Rating Of The Top Five Centres In Each Region

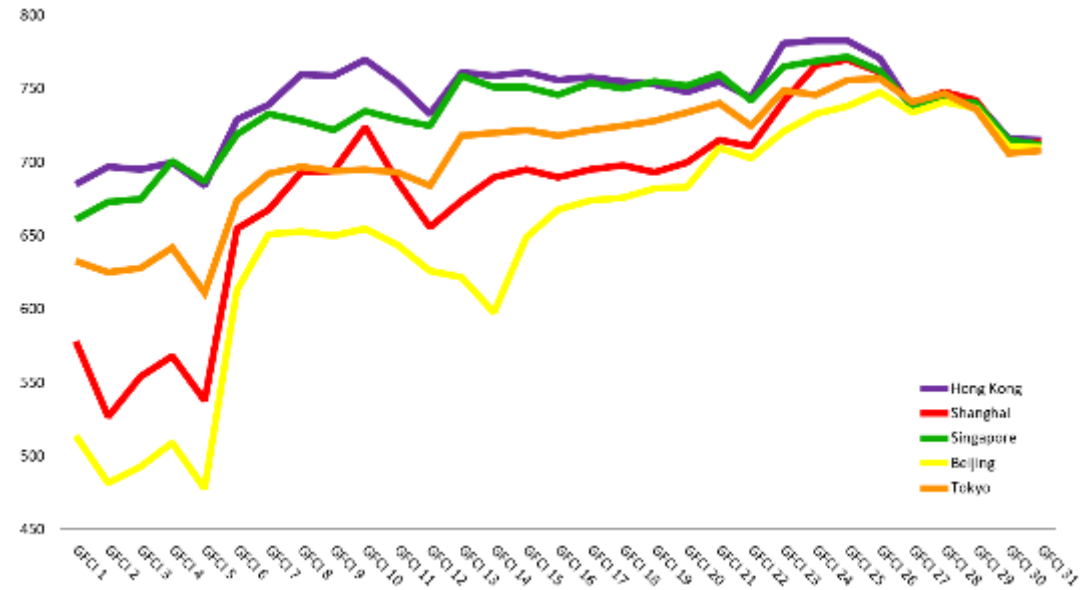


Top Five Centres – Ratings Over Time



Asia/Pacific – Leading Centres

Centre	GFCI 31		GFCI 30		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Hong Kong	3	715	3	716	0	▼ 1
Shanghai	4	714	6	713	▲ 2	▲ 1
Singapore	6	712	4	715	▼ 2	▼ 3
Beijing	8	710	8	711	0	▼ 1
Tokyo	9	708	9	706	0	▲ 2
Shenzhen	10	707	16	699	▲ 6	▲ 8
Seoul	12	705	13	702	▲ 1	▲ 3
Sydney	23	682	25	686	▲ 2	▼ 4
Guangzhou	24	681	32	677	▲ 8	▲ 4
Busan	30	673	33	675	▲ 3	▼ 2



Industry Sector Sub-Indices

Rank	Banking	Investment Management	Insurance	Professional Services	Government & Regulatory	Finance	FinTech	Trading
1	New York	New York	Shenzhen	New York	New York	New York	New York	New York
2	Shenzhen	London	New York	London	London	Beijing	Singapore	London
3	Hong Kong	Singapore	Hong Kong	Singapore	Singapore	Shanghai	London	Shanghai
4	London	Beijing	London	Hong Kong	Zurich	Shenzhen	Shanghai	Hong Kong
5	Singapore	Shanghai	Shanghai	San Francisco	Hong Kong	London	Hong Kong	Beijing
6	Beijing	Hong Kong	Singapore	Shenzhen	Shanghai	Hong Kong	Beijing	Singapore
7	Shanghai	Shenzhen	Paris	Shanghai	Dubai	Tokyo	Tokyo	Tokyo
8	Tokyo	Zurich	Beijing	Zurich	Frankfurt	Singapore	Luxembourg	Zurich
9	Osaka	Los Angeles	Tokyo	Luxembourg	Geneva	Zurich	Shenzhen	San Francisco
10	Zurich	Geneva	Zurich	Toronto	Seoul	Frankfurt	San Francisco	Los Angeles
11	Sydney	Luxembourg	Frankfurt	Frankfurt	Tokyo	Los Angeles	Dubai	Chicago
12	Luxembourg	San Francisco	Seoul	Washington DC	Los Angeles	Luxembourg	Zurich	Shenzhen
13	Paris	Paris	Luxembourg	Seoul	Oslo	Edinburgh	Frankfurt	Frankfurt
14	Los Angeles	Chicago	Sydney	Dubai	Washington DC	Geneva	Washington DC	Washington DC
15	San Francisco	Amsterdam	Los Angeles	Geneva	Luxembourg	San Francisco	Qingdao	Stuttgart

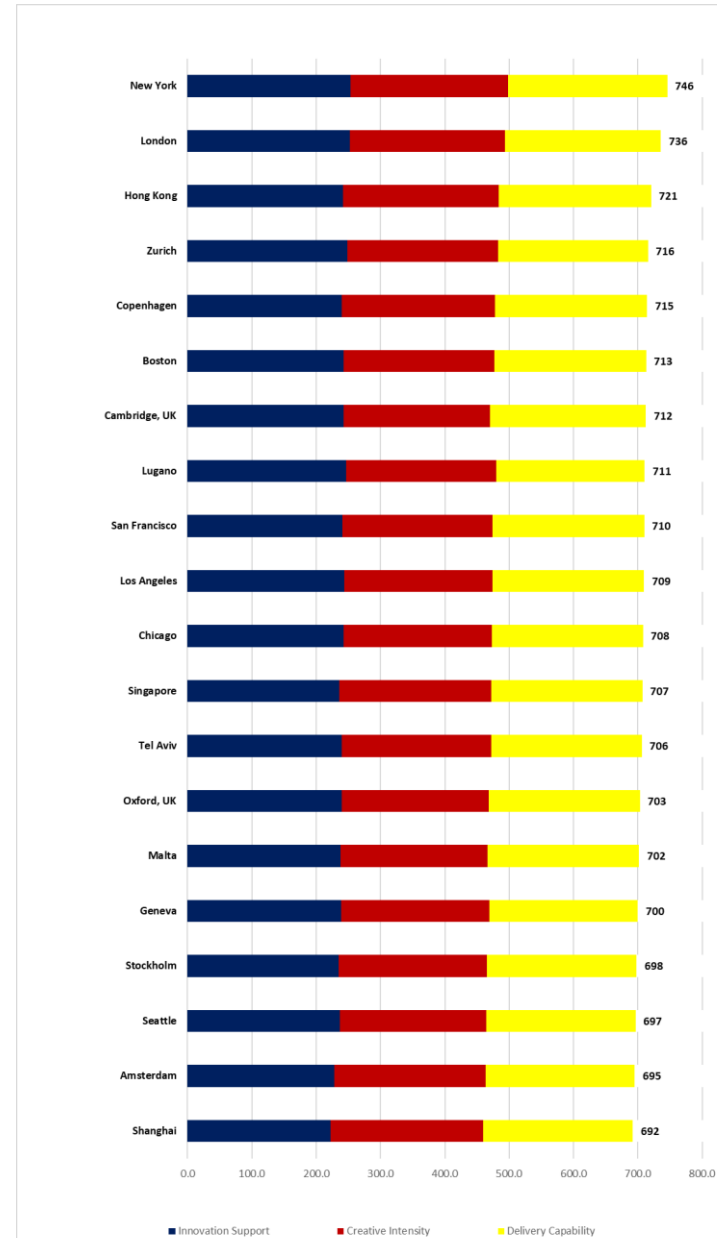
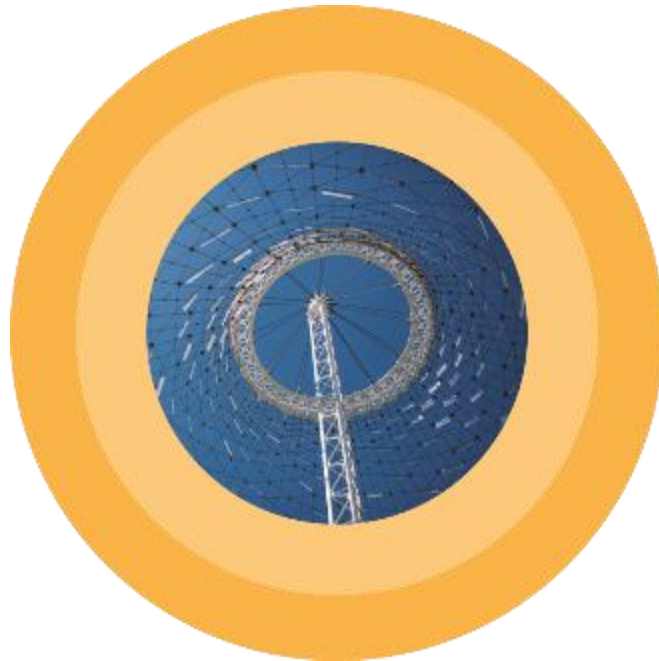
GFCI 31 FinTech Rating

Centre	GFCI 31		GFCI 30		Change In Rank	Change in Rating
	FinTech Rank	FinTech Rating	FinTech Rank	FinTech Rating		
New York	1	721	1	723	0	▼ 2
✓ Shanghai	2	705	2	695	0	▲ 10
✓ Beijing	3	701	5	692	▲ 2	▲ 9
San Francisco	4	693	4	693	0	0
London	5	692	3	694	▼ 2	▼ 2
✓ Shenzhen	6	691	7	686	▲ 1	▲ 5
Los Angeles	7	690	6	689	▼ 1	▲ 1
✓ Hong Kong	8	682	8	679	0	▲ 3
Chicago	9	680	12	675	▲ 3	▲ 5
Boston	10	679	14	673	▲ 4	▲ 6
Washington DC	11	678	9	678	▼ 2	0
✓ Guangzhou	12	677	13	674	▲ 1	▲ 3
Singapore	13	676	10	677	▼ 3	▼ 1
Seoul	14	666	11	676	▼ 3	▼ 10
Tokyo	15	654	16	651	▲ 1	▲ 3
Paris	16	651	15	661	▼ 1	▼ 10
Madrid	17	649	24	638	▲ 7	▲ 11
Frankfurt	18	646	17	649	▼ 1	▼ 3
Toronto	19	645	19	645	0	0
Edinburgh	20	644	21	642	▲ 1	▲ 2

SCI 5 Top Twenty Centres By Dimension

The SCI Dimensions

- Innovation Support
- Creative Intensity
- Delivery Capability



Asia/Pacific – Top 10

Centre	SCI 5		SCI 4		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Hong Kong	3	721	5	702	▲ 2	▲ 19
Shanghai	20	692	28	659	▲ 8	▲ 33
Beijing	22	685	23	664	▲ 1	▲ 21
Shenzhen	34	669	48	628	▲ 14	▲ 41
Chengdu	52	643	New	New	New	New
Tianjin	59	625	57	612	▼ 2	▲ 13
Manila	61	623	68	573	▲ 7	▲ 50
Taipei	74	562	70	546	▼ 4	▲ 16
Mumbai	75	501	71	458	▼ 4	▲ 43
New Delhi	76	472	72	446	▼ 4	▲ 26

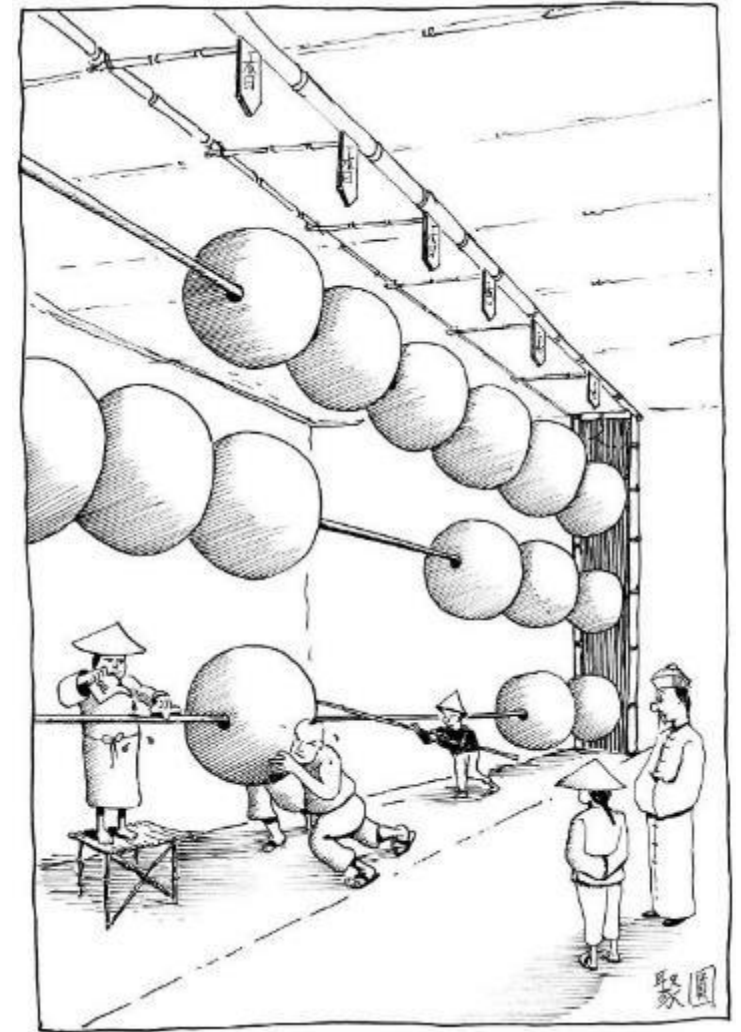
- 21 Asia/Pacific centres now feature in the SCI, with Chengdu joining the index for the first time
- Hong Kong and Shanghai rank in the top 20 in the world

Fintech Analysis Issues

- Market size
- Talent
- Innovation
- Structure
- Regulation

Standards – implicit or explicit

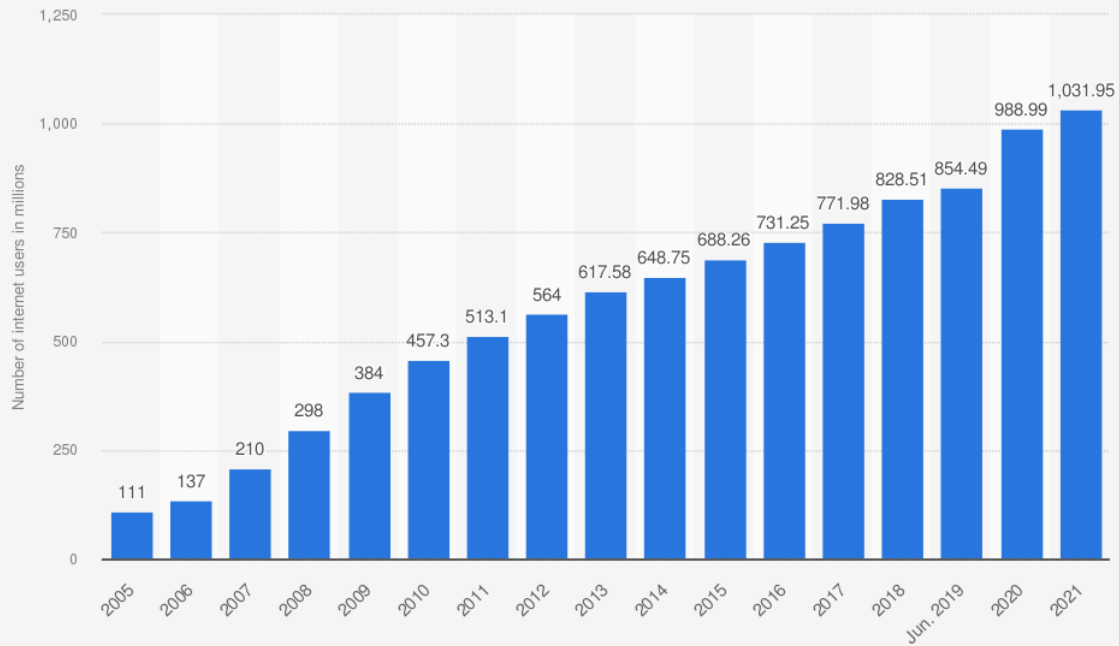
Innovation versus standards diagrams from
Professor Peter Swann, The Empirical Economics of Standards, DTI Economics
Paper No. 12, London (2005).



“Get a big picture grip on the details.”
Chao Kli Ning

Market Size - A Rising Tide

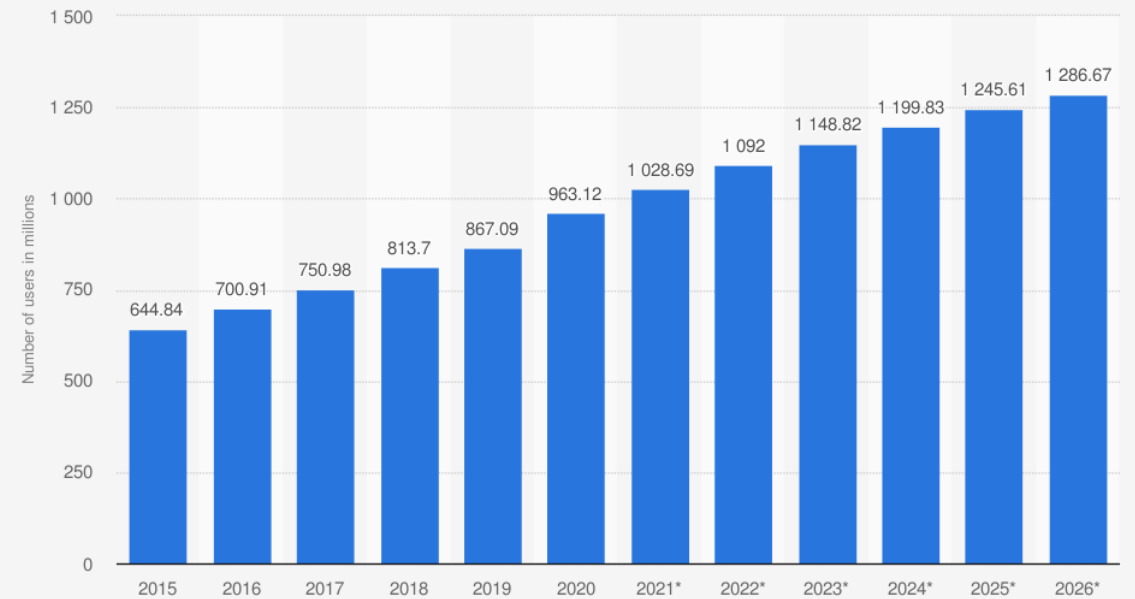
Number of internet users in China from 2008 to 2021 (in millions)



Source
CNNIC
© Statista 2022

Additional Information:
China; 2008 to 2021

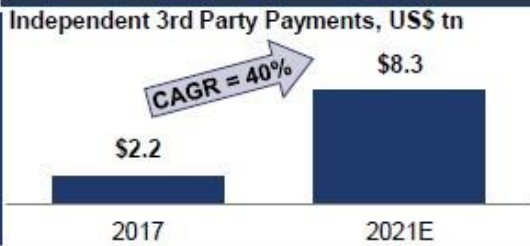



Number of mobile internet users in China from 2015 to 2020 with a forecast until 2026 (in millions)



Sources
Statista; Statista Digital Market Outlook
© Statista 2021

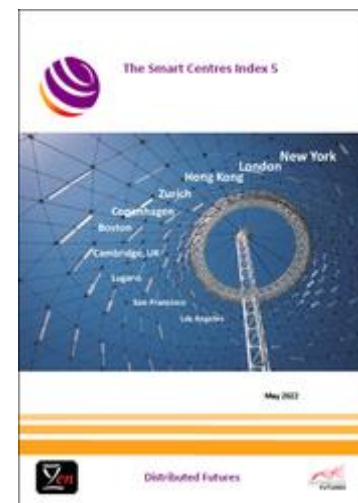
Additional Information:
China; Statista Digital Market Outlook; 2015 to 2020; excluding Hong Kong

Market Size – Right Place, Right Time

	Opportunity	Balance of Power			Commentary
		Internet Giants	Incumbents	Start-Ups	
Payments	<p>Independent 3rd Party Payments, US\$ tn</p>  <p>2017: \$2.2, 2021E: \$8.3, CAGR = 40%</p>	Mobile / Online	Offline	Limited	Highly concentrated between Ant and Tencent
Credit / Lending	<p>Loan Balance of Online Consumer Finance, US\$ bn</p>  <p>2017: \$161, 2022E: \$511, CAGR = 26%</p>	Enablement / Distribution	Super Prime	Prime / Near-Prime	Significant start-up activity
Wealth Management / Asset Management	<p>AUM of Online Wealth Management, US\$ tn</p>  <p>2017: \$0.5, 2022E: \$2.1, CAGR = 33%</p>	Enablement / Distribution	Manufacturing / Distribution	Manufacturing / Distribution	Market developing
Insurance	<p>Insuretech – GWP, US\$ bn</p>  <p>2015: \$37, 2020E: \$174, CAGR = 36%</p>	Distribution	Manufacturing	Varied	Incumbents well-positioned

Talent - Smart Centres Index Top Twenty Centres

Centre	SCI 5		SCI 4		Change In	
	Rank	Rating	Rank	Rating	Rank	Rating
New York	1	746	1	731	0	▲ 15
London	2	736	2	730	0	▲ 6
✓ Hong Kong	3	721	5	702	▲ 2	▲ 19
Zurich	4	716	7	696	▲ 3	▲ 20
Copenhagen	5	715	8	695	▲ 3	▲ 20
Boston	6	713	16	687	▲ 10	▲ 26
Cambridge, UK	7	712	4	707	▼ 3	▲ 5
Lugano	8	711	12	691	▲ 4	▲ 20
San Francisco	9	710	17	686	▲ 8	▲ 24
Los Angeles	10	709	13	690	▲ 3	▲ 19
Chicago	11	708	11	692	0	▲ 16
Singapore	12	707	6	700	▼ 6	▲ 7
Tel Aviv	13	706	18	685	▲ 5	▲ 21
Oxford, UK	14	703	3	710	▼ 11	▼ 7
Malta	15	702	20	683	▲ 5	▲ 19
Geneva	16	700	15	688	▼ 1	▲ 12
Stockholm	17	698	9	694	▼ 8	▲ 4
Seattle	18	697	14	689	▼ 4	▲ 8
Amsterdam	19	695	19	684	0	▲ 11
✓ Shanghai	20	692	28	659	▲ 8	▲ 33

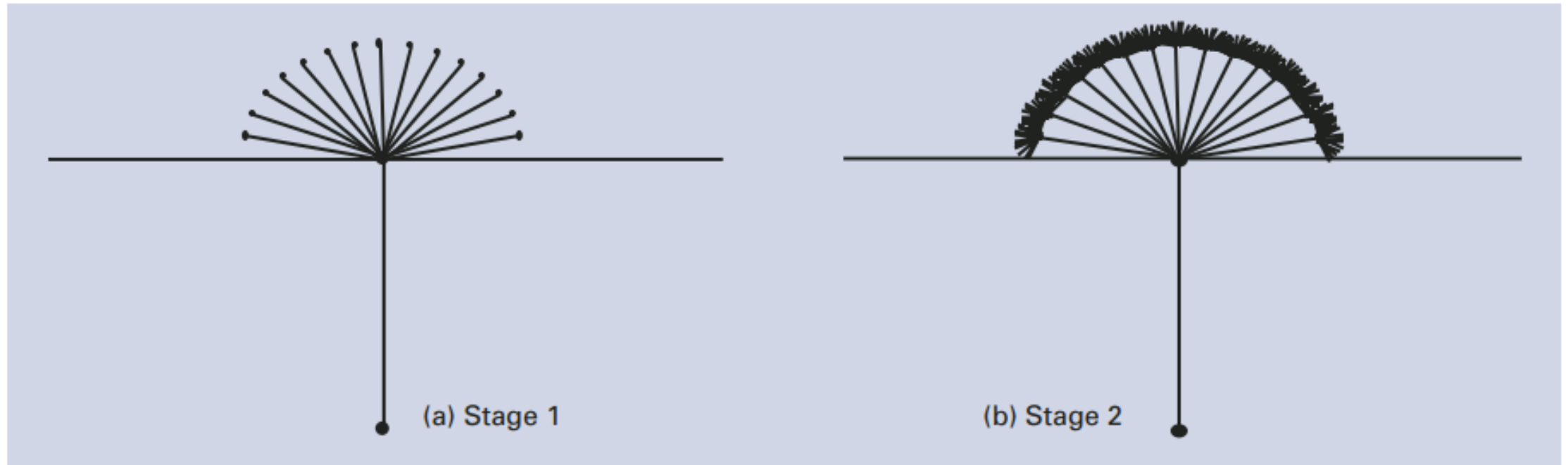


Talent - Top Universities In Science & Technology

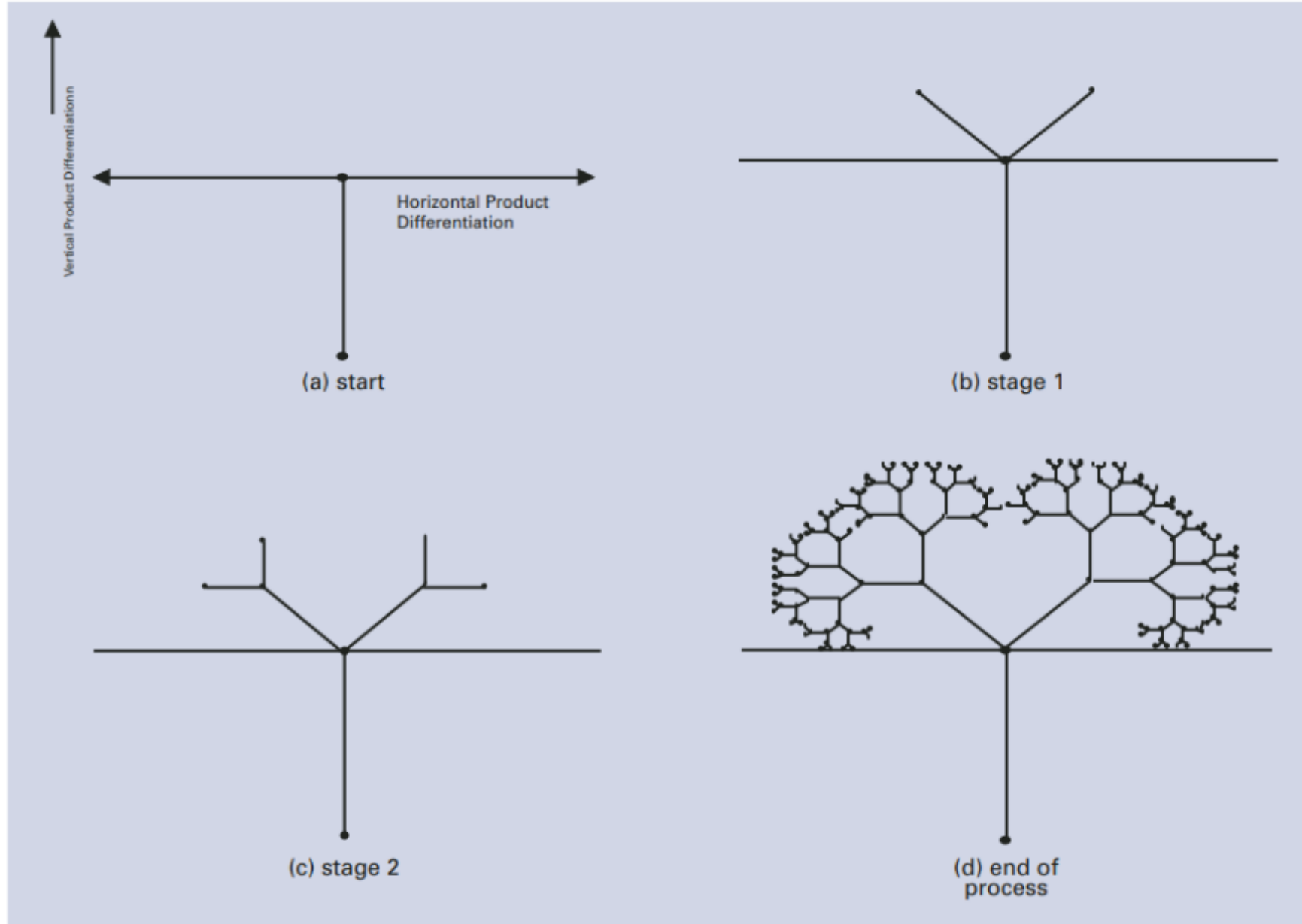
Country	Number Of Top 20 Universities In Engineering & Technology	Number Of Top 20 universities In Natural Sciences
US	7	8
UK	3	3
Singapore	2	2
France		3
Switzerland	2	2
Netherlands	1	
Italy	1	
✓ China	1	
Japan	1	1
Germany	1	
South Korea	1	
Russian Federation		1

Source: QS Top Universities Subject Ranking

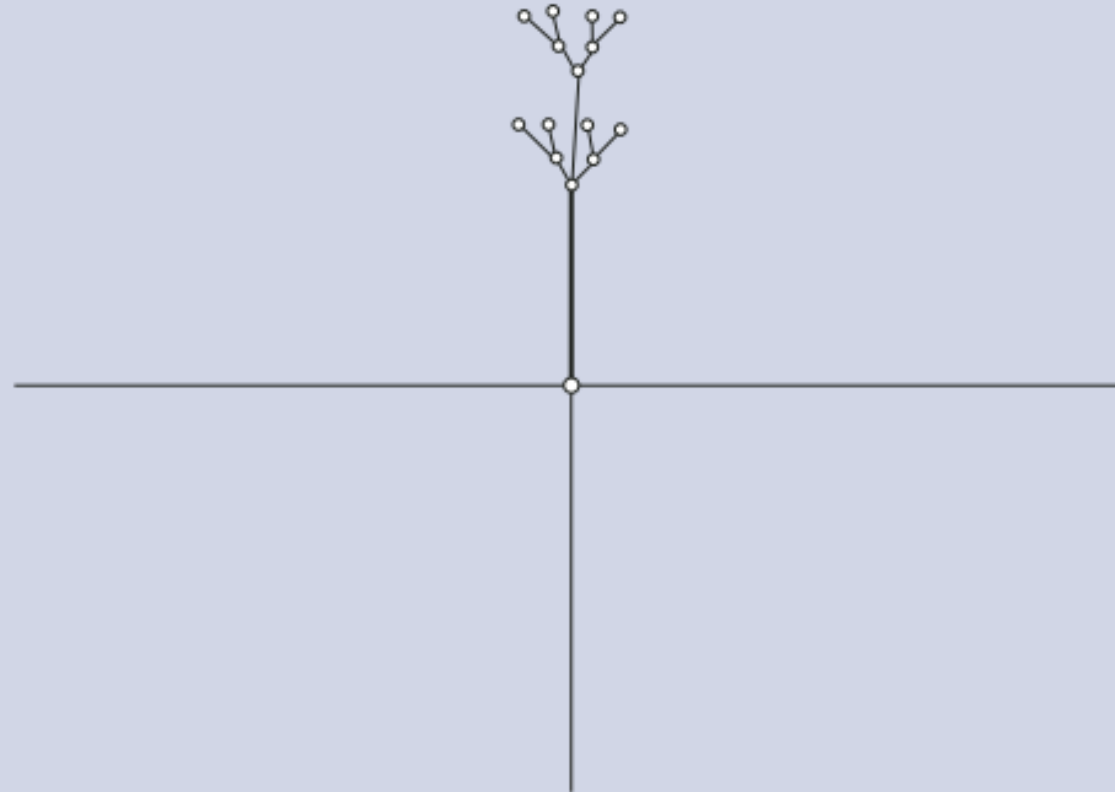
Product Innovation Without Standardisation



Product Innovation With Standardisation



Product Innovation With A Proprietary De Facto Standard

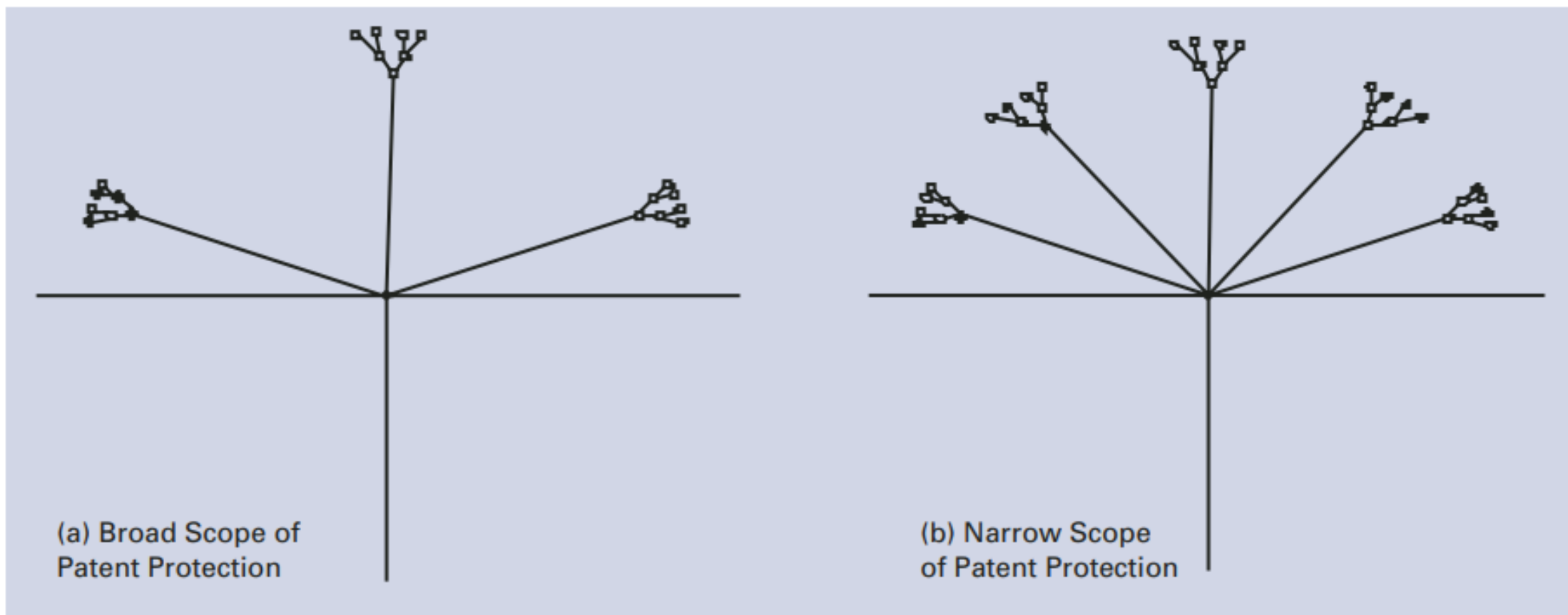


Innovation - Number Of Patent Applications?

Country	2020 Rank	2020 Patent Applications	2019 Rank	2019 Patent Applications
China	1	1,441,086	1	1,328,067
United States	2	496,123	2	521,738
Japan	3	423,264	3	453,816
South Korea	4	260,614	4	248,550
Germany	5	168,092	5	178,359
France	6	64,287	6	67,389
United Kingdom	7	53,079	7	54,794
Switzerland	8	44,806	8	46,147
India	9	37,895	10	34,052
Netherlands	10	32,812	9	35,468
Italy	11	32,551	11	32,028
Russia	12	30,283	12	29,712
Sweden	13	26,221	13	27,772
Canada	14	23,855	14	25,174
Israel	15	16,223	15	16,095

Source: World Intellectual Property Organisation

Product Innovation With Patenting



Structure - De Facto Standards, Or Oligopolies?

Fintech Unicorns in China by Sector 2021

CFTE

PAYMENTS



WEALTH TECH



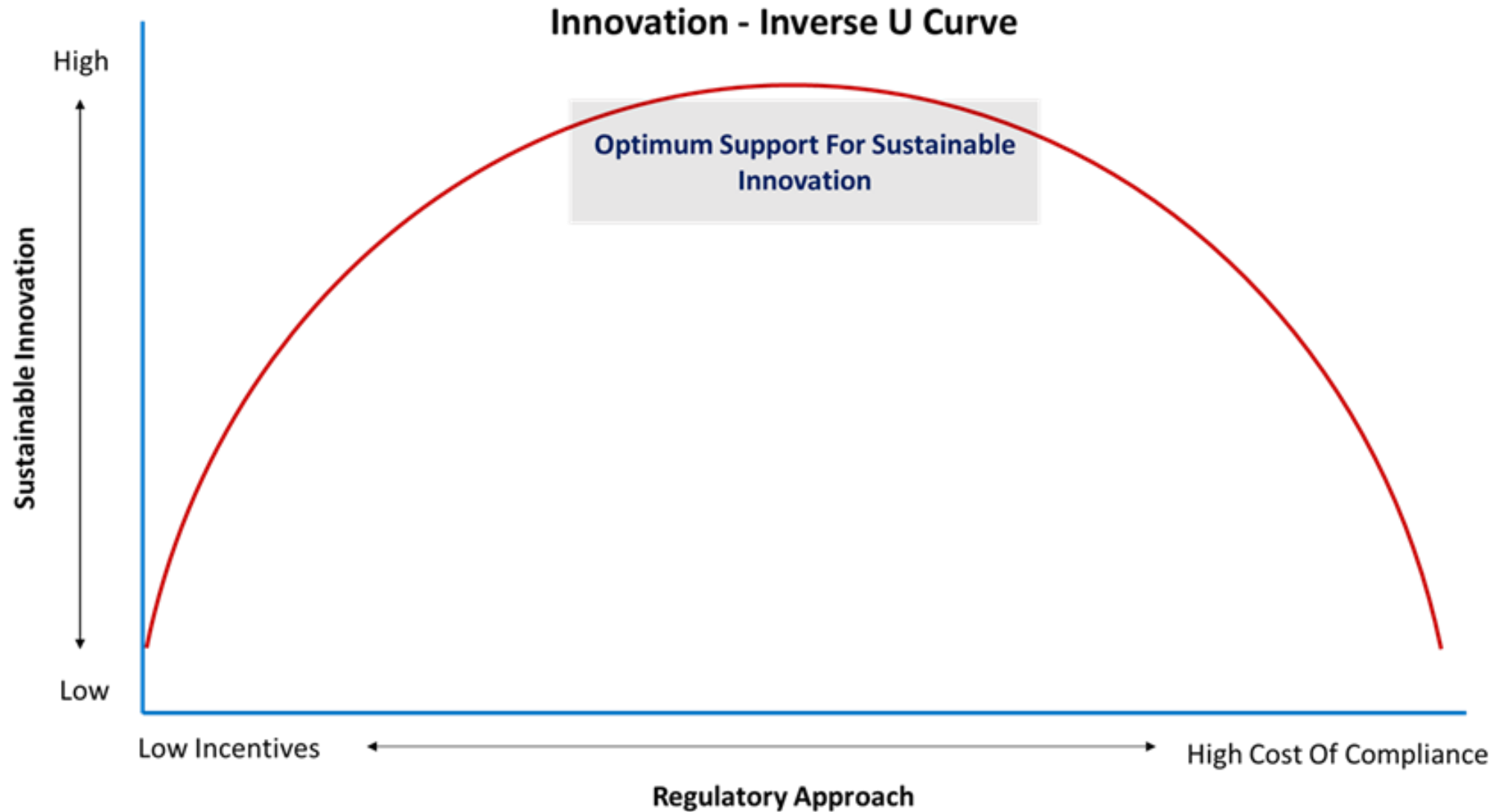
INSURTECH



LENDING

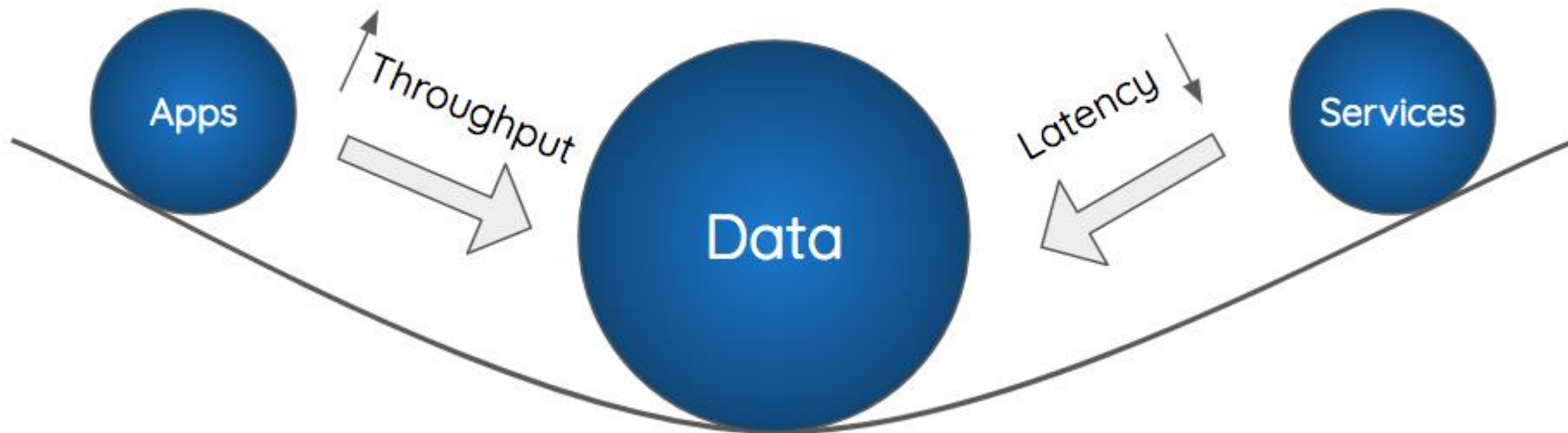


Regulatory Goals



'Data Gravity' Gaining Ground

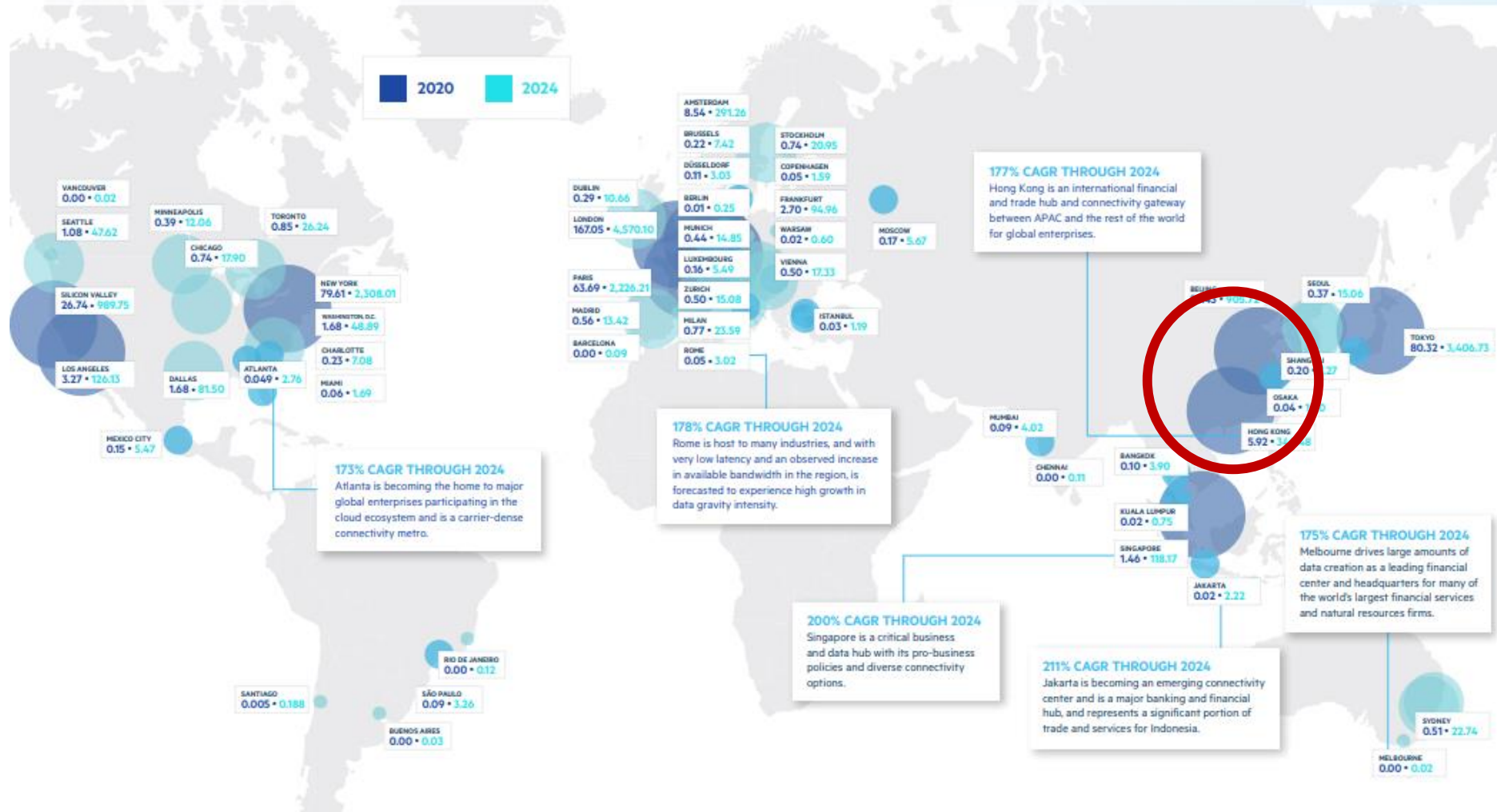
- Different data regimes – GDPR, State, Wild West
- Data value is intimately related to communities, e.g. consumer moves from WhatsApp to Signal in 2021
- Data support taking geography into account as much as jurisdiction
- One-sided value may be disappearing, from easy-to-capture data exhaust trails to tighter data ownership with negotiated value sharing



Data Gravity On The Ground – A Divider?

EXPLORE KEY FINDINGS FOR THE FORBES GLOBAL 2000 ENTERPRISES ACROSS 53 METROS

The Data Gravity Index™ v1.5 is a global forecast that measures the intensity and gravitational force of enterprise data growth for 53 metros and 23 industries.

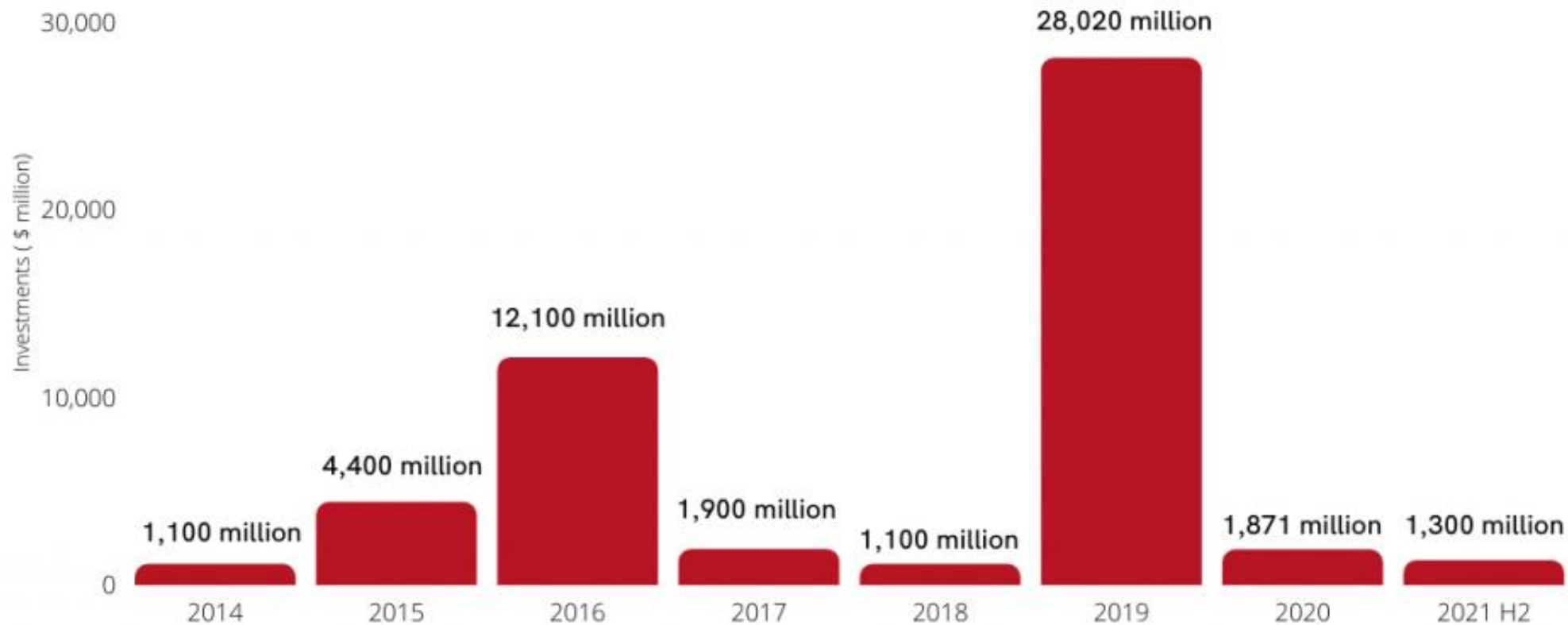


Party Over?

Investments in Fintech in China 2014 - 2021



Investments in \$ million



Source: Pulse of Fintech H1'21

Some Questions

- Two strong payment platforms and ‘leapfrogging’ led to efficient innovation, though it might be inappropriate ahead
- Government connections & policy matter too much, well beyond just regulation
- Where is the true strength of Chinese fintech?
 - market size
 - talent
 - innovation
 - structure
 - regulation

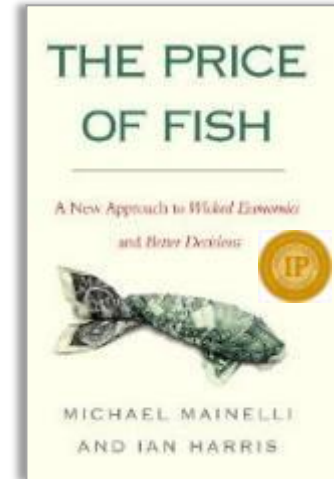


**"Get a detailed grip on the big picture."
Chao Kli Ning**

When Would We Know Our Commerce Is Working?



“Get a big picture grip on the details.”
Chao Kli Ning



Thank you!

www.youtube.com/zyengroup

