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BIG DATA MARKETS AND COMPETITION LAW IN ASIA

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The sheer size of e-commerce markets in Asia and their projected growth are remarkable. South Korea's projected e-commerce revenues in 2025, for example, are comparable to France and Italy, and Indonesia's projected revenues exceed Italy's. Further, key parameters such as consumer behavior related to the frequency of online shopping, use of mobile phones to conduct online transactions, and the number of mobile phone users are often significantly higher than those observed in many developed countries. As consumer and business online transactions increase, the amount of Big Data accumulated and analyzed by e-commerce firms and platforms increases dramatically. This setting in many Asian economies offers an opportunity to take a deeper look at the potential competition problems that may emerge due to consolidation of Big Data. After discussing the scale and scope of e-commerce markets and related attributes, this article presents some competition law initiatives in selected Asian countries. While many competition authorities have concerns about consolidation of Big Data and its effects on M&As, firms' behavior that may result in dominance, and potentially algorithmic collusion, they are also cognizant of the innovations these firms and emerging markets bring to their countries and consumer welfare.

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I. INTRODUCTION

E-commerce platforms and online retailers collect unique consumer data during search and transactions. Algorithms and machine learning techniques can analyze these data, which can then be used by the online platform itself as well as sold to third-parties for targeted advertising. The more are the data amassed by an online platform or retailer, the more likely it is to bestow the owner of the data a potential competitive advantage. An advantage is not guaranteed, and will depend on the nature and amount of data accumulated, actual and potential competitors, and market dynamics.

When such data collection takes place in truly massive amounts, it is referred to as Big Data. Many characteristics define and complement Big Data, such as the required technology for creating, storing, processing, and analyzing, among other aspects. Firms with the most advanced technologies in this dimension can use these data for modeling and predicting consumer behavior. Along with creating potential competitive advantage, Big Data can also significantly affect firms' innovation, new offerings of products and services, and growth. In recent years, there has been a marked shift in the behavior of consumers towards e-commerce. Worldwide, there are numerous e-commerce platforms, some with global reach while others are country or region specific. The sheer scale of data being collected and analyzed by firms is staggering, with potential competition concerns under specific instances.

Since a large number of papers and reports have provided detailed description of Big Data and e-commerce markets, and their potential to harm competition that may come with greater consolidation and anti-competitive behaviors, I will not repeat those issues here.²

Instead, in this article, I provide a broad overview of the size and scope of e-commerce markets in selected Asian countries, comment on the challenges presented by Big Data being collected, and present competition law initiatives related to it in selected Asian countries.

II. SIZE AND SCOPE OF ECOMMERCE MARKETS IN ASIA

In this section I provide a perspective on the size, scope and growth of ecommerce markets, and smartphone use and penetration rates in selected Asia countries.

Table 1 presents e-commerce revenues. The Projections for 2025 show China's e-commerce revenues to considerably exceed those of the U.S.; and South Korea's, for example, are comparable to France and Italy. Indonesia's projected revenues exceed Italy's.

Table 1. E-Commerce Revenues

Selected Asian countries	2017	2018	2019	2020	2021	2022	2023	2024	2025
China	1,015,370	1,052,679	1,097,993	1,260,402	1,368,457	1,412,109	1,482,246	1,538,348	1,625,784
Japan	94,226	104,592	115,233	142,629	187,958	215,113	246,426	282,621	324,601
India	28,770	36,283	45,773	64,773	85,423	99,438	116,694	138,218	165,428
South Korea	63,052	72,936	83,587	100,869	119,487	124,177	129,124	134,081	139,270
Singapore	1,616	2,218	2,993	4,573	6,284	7,293	8,464	9,834	11,448
Indonesia	9,010	14,652	22,407	35,342	55,975	62,593	70,258	79,306	90,192
Malaysia	2,270	3,176	4,285	6,155	8,591	10,119	11,950	14,154	16,834
Philippines	6,780	8,177	9,839	13,809	17,251	20,182	23,579	27,859	32,702
Thailand	3,896	5,383	7,421	11,139	19,550	22,201	25,335	29,074	33,577
Vietnam	3,643	5,025	6,709	9,525	12,842	14,814	17,195	20,107	23,705

2 Some insightful details are contained in: "Big Data: An Antitrust Perspective. CPI Antitrust Chronicle," (May) 2015. Stephen Dnes, "Big Data Protection: Big Problem? CPI Antitrust Chronicle (June) 2021. "OECD Handbook on Competition Policy in the Digital Age," 2022. "Common Issues Relating to the Digital Economy and Competition Report of the International Developments and Comments Task Force on Positions Expressed by the ABA Antitrust Law Section between 2017 and 2019," (February) 2020. Katherine B. Forrest, "Big Data and online advertising: Emerging competition concerns," CPI Antitrust Chronicle, (April) 2019. Alden F. Abbott, "Big Data and Competition Policy: A US FTC Perspective," (July) 2019. D. Daniel Sokol & Jingyuan (Mary) Ma, "Understanding Online Markets and Antitrust Analysis," Northwestern Journal of Technology and Intellectual Property, (Spring) 2017. Charlotte Slaiman, "How Big Data Fuels Big Tech's Anticompetitive Conduct and Gatekeeping Power," Promarket, (October 14, 2021). D. Daniel Sokol & Roisin E. Comerford, "Does Antitrust Have a Role to Play in Regulating Big Data?" Cambridge Handbook of Antitrust, Intellectual Property and High Tech, Roger D. Blair & D. Daniel Sokol editors, Cambridge University Press, 2017.

Selected developed countries									
United States	449,031	493,024	542,231	675,831	799,650	907,790	1,034,785	1,184,975	1,364,628
United Kingdom	125,422	129,054	134,152	163,388	177,517	199,873	225,009	253,358	285,555
Germany	65,298	71,785	79,053	102,435	127,501	141,161	156,898	174,834	195,451
France	49,484	54,206	59,382	80,306	92,709	102,815	114,446	127,764	143,200
Italy	17,325	20,838	25,116	36,822	47,365	54,953	63,886	74,458	87,042

Source: Statista. “Digital market outlook: eCommerce worldwide,” 2021. Data are revenues in USD (millions). Data include actual revenues up to 2021, and projections for future years.

Examining projected retail e-commerce sales growth in 2022, some of the fastest growing countries are:³ Philippines (25.9 percent), India (25.5 percent), Indonesia (23 percent), Vietnam (19 percent), Malaysia (18.3 percent) and Thailand (18 percent). To provide a contrast, the growth for United States is projected at 15.9 percent.

In combination, the data on the size and expected growth of e-commerce markets in Asia make them fertile for existing firms to grow, as well as facilitate entry and innovation with new products and services offered to consumers.

Consumer online behavior is a critical aspect of the development of e-commerce markets. Greater volume and frequency of e-commerce transactions facilitates development of the markets, and firms offering new products and services. Examining consumer behavior, we see stark difference. In terms of frequency of online shopping, the percentage of respondents who reported shopping 2-3 times per week or more online was:⁴ China (72 percent), India (49 percent), Indonesia (47 percent), and Thailand (49 percent). Compare these to developed countries such as Australia (38 percent) and Japan (13 percent).

Table 2 presents data on the e-commerce share of retail. By a wide margin, Asia-Pacific dominates other regions.

Table 2. E-Commerce Share of Retail

	2020 (%)	2025 (%)
Asia-Pacific	51	61
Europe	16	19
Latin America	11	13
Middle East & Africa	7	10
North America	20	26

Source: Statista. “Regional e-commerce share of retail in 2020, with a forecast for 2025.”

For the Asia Pacific region, data for 2018 show the following shares (in percent) of online marketplaces used by retailers Asia Pacific 2018 by platform:⁵ Tmall (46 percent), JD.com (30 percent), Lazada (27 percent), Zalora (27 percent), Amazon (24 percent), Taobao (16 percent), Alibaba (15 percent), and Shopee (13 percent).

The totality of the information above suggests that the e-commerce markets in Asia are vibrant, and on track to show dramatic growth. Consumer behavior has become more attuned to online shopping compared to more traditional bricks-and-mortar, and COVID likely has accelerated the process. Given the nature of transactions on platforms and online retailers, the amount of consumer data being collected is growing dramatically. The greater the frequency and volume of transactions, the data in possession of the platforms and online retailers is growing almost exponentially.

³ Statista. “The fastest-growing retail e-commerce countries in 2022.”

⁴ Statista. “Frequency of online shopping in selected Asia-Pacific countries in 2021.”

⁵ Statista. “Share of online marketplaces used by retailers Asia Pacific 2018 by platform,” 2018.

III. SMARTPHONES

Smartphones have increasingly become the main device consumers use to shop online. Table 3 presents data on the number of users and smartphone penetration rate. The sheer number of users is staggering, and with this comes voluminous data collected by online retailers and platforms.

Table 3. Smartphone Users and Penetration Rate

	Users (millions)	Penetration rate (%)
China	935	65
India	748	54
Indonesia	184	67
Japan	99	79
Philippines	79	72
Vietnam	69	71
Thailand	54	77
South Korea	47	92

Source: Data are from two Statista reports, 2021: “Smartphone users in Asia 2020, by country,” and “Smartphone penetration in Asia 2020, by country.”

The share of mobile phone website traffic in Asia was about 48 percent in 2015. In 2021, mobile phones accounted for approximately 64 percent of the total web traffic in Asia.⁶ Focusing on smartphones is important as consumers have shifted towards using them as the main device for transactions. Smartphones not only provide a treasure-trove of transactions and characteristics data, but also location information which contributes to the growing Big Data problems and potential for anti-competitive behavior.

IV. BIG DATA AND COMPETITION LAW INITIATIVES IN SELECTED ASIAN COUNTRIES

The sheer size, ongoing growth, and scope of the e-commerce markets presents interesting and complicated challenges for competition law and enforcement. Use of Big Data and algorithms can affect virtually all aspects of competition concern: mergers and acquisitions, establishing dominant position in markets, anti-competitive behavior such as predatory pricing, collusive activity, among others.

Given the scale and scope of many of the economies in Asia, competition authorities have been active in studying the behavior of the key firms, domestic and foreign, and have moved to enact laws and restrain potential anti-competitive influences on markets. In this section I provide some highlights for selected countries.

A. Japan

The Japan Fair Trade Commission (“JFTC”) has explored Big Data related issues and is of the view that e-commerce platforms have the potential of wielding significant market power based on the extent to which they possess and control data. Based on this, JFTC has potential concerns about M&As that increase the consolidation of such data. Their approach, consistent with other areas of competition law is to examine such issues on a case-by-case basis as opposed to any blanket judgement on digital platforms and e-commerce markets.

As noted by Dokei et al. (2018),⁷ the JFTC is grappling with the complexities of Big Data and e-commerce markets, how to define them, and tests to delineate problematic transactions. For example, the report highlights:

“...that a digital platform comprises several layers of markets with different types of consumers or users (also referred to as a ‘multilevel market’), where ‘free’ services might be provided in one market (for example, the social media service market) but compensation is paid in another (for instance, the online advertisement market). The report argues that the SSNIP test

⁶ Source: Statista. “Share of mobile phone website traffic in Asia from 2012 to 2021.”

⁷ Toshio Dokei, Hideo Nakajima & Takako Onoki, “Japan: Big Data and the big reveal,” White and Case, 2018.

does not necessarily apply to this type of ‘free’ market, and suggests considering the substitutability of consumers and/or suppliers using another method, such as the SSNDQ (small but significant and non-transitory decrease in quality) test, which focuses on functionality and quality rather than price.”

Considering the above, and that Big Data accumulation and corollary benefits likely take time to accrue benefits to the firm in terms of potential market power and innovations, the JFTC report discusses allowing it to scrutinize M&As and other transactions that may appear innocuous under traditional screens, but pose data-related concerns.

Finally, Japan’s “Act to Improve the Transparency and Fairness of Specified Digital Platforms” was outlined in 2020. This Act compels firms to abide by data and information disclosure rules, and will likely have a meaningful impact on e-commerce platforms.⁸

The JFTC (2021)⁹ report notes that:

“It is concerned that characteristics of digital markets such as network effects can enable digital platform operators, which accumulate huge amount of data, to monopolize/oligopolize markets, exclude rivals and deter new entrants. However, it should be noted that interventions in response to these concerns must not be too excessive to harm innovation.”

B. South Korea

The new Korea Fair Trade Commission (“KFTC”) guidelines define Big Data as an information asset.¹⁰ The information, or data, can be used by the firm for a wide range of its business operations. In the M&As context, the KFTC guidelines focus on consolidation and dominance in such information (i.e. Big Data) assets as it may lessen competition. This allows KFTC to focus not just on the more traditional price competition aspects, but also non-price competition. This information-based approach is in contrast to the more traditional approach of focusing on sales revenues-based market shares.

In addition, the KFTC, in its initiatives on Big Data and digital advertising markets, and in particular its efforts at better understanding competitive effects, has established greater investigative powers in its ICT taskforce.¹¹ The ICT team’s powers cover a wide range, such as app markets, digital advertising, automobile software platforms, semiconductors, and intellectual property.

As an example of enforcement action, South Korea passed a law that mandated Apple Inc. and Alphabet Inc.’s Google to open their mobile app stores to allow alternative payment methods. Apple, subject to complaints by wireless carriers and consumers, had to take corrective action. Google was subject to a \$177 million fine for hindering rivals’ participation in the Android OS. In other actions, the KFTC ordered Delivery Hero SE to divest a local unit before acquisition of rival Woowa Brothers Corp.¹²

C. China

The urge to accumulate and control big data at the forefront of business behavior. In a large and rapidly growing e-commerce market like China, this can have significant repercussions and potential for competitive harm.

In November 2020, China’s State Administration for Market Regulation (“SAMR”) issued draft Antitrust Guidelines on the Field of Platform Economy soliciting public opinions related to big data and its role in monopoly agreements, abuse of dominance, and merger control.¹³ Price discrimination driven by big data has also been the focus of China’s regulators. The SAMR announced that it sought public comment on

8 Japan Fair Trade Commission. “Report of Study Group on Data and Competition Policy,” 2017.

Toshiaki Takigawa. “Super Platforms, Big Data, and the Competition Law: The Japanese Approach in Contrast with the US and the EU,” *Journal of Antitrust Enforcement*, 2021, 289–312.

Hideki Utsunomiya & Yusuke Takamiya, “E-Commerce Competition Enforcement Guide: Japan,” *Global Competition Review*, 2020.

9 Japan Fair Trade Commission. “Report of the Study Group on Competition Policy for Data Markets,” 2021.

10 Brian Tae-Hyun Chung, Miles Chung & Youngjin Jung. “KFTC Introduces Standards for Reviewing Innovation Market and Big Data Mergers,” *Kluwer Competition Law Blog*, 2019.

11 Wooyoung Lee, “Antitrust, privacy regulators in South Korea in subtle competition over digital-ad regulation,” *MLex*, 2021. Sohee Kim. “Top Antitrust Cop Steers Korea Away From Hard Tech Crackdown,” *Bloomberg*, 2021.

12 Sohee Kim, “Top Antitrust Cop Steers Korea Away From Hard Tech Crackdown,” *Bloomberg*, 2021.

13 Jet Deng & Ken Dai, “Big Data and Competition in China: Antitrust Regulation and Beyond,” *CPI Antitrust Chronicle*, (March) 2021.

the draft rules. The penalty criteria for violations of laws and regulations are significant: “...e-commerce platform operators would be subject to fines of between 0.1 percent and 0.5 percent of their sales income from the preceding year if they take advantage of big data analysis, among other technological means, to set different prices for the same product, per the draft rules.”¹⁴

In terms of antitrust actions, Meituan was fined CNY 3.4 billion for abuse of dominant position with an order to refund exclusive partnership deposits to online retailers and file annual compliance reports to SAMR for the next three years.¹⁵ Alibaba was fined CNY 18 billion for abuse of dominant position on the e-commerce platform services market. Alibaba was accused of imposing punitive measures on online retailers. Among some of the other cases that related to e-commerce and big data, are the Alibaba versus SF Express data sharing; Tencent versus ByteDance; and Tencent versus Huawei.¹⁶

D. India

Data use was recognized as a competition law concern by the Competition Commission of India (“CCI”) in 2012. The case related to Matrimony.com Ltd versus Google, where Matrimony alleged that Google had abused its dominant position in the online search advertising market. Google was accused of discriminatory behavior, where they displayed their own websites prominently in comparison to other search results. In 2017, the CCI investigated issues related to data aggregation in the Vinod Kumar Gupta versus WhatsApp Inc. case. WhatsApp was accused of predatory pricing, and using its dominant position by compelling users to share data and account details with Facebook.¹⁷

As of March 2021, the CCI has signaled a balanced approach to big data and market dominance and competition concerns. They stated: *“in a data-driven ecosystem, the competition law needs to examine whether the excessive data collection and the extent to which such collected data is subsequently put to use or otherwise shared, have anti-competitive implications...”*

E. Taiwan

In Taiwan, the “Personal Data and Protection Act” (“PDPA”) provides guidelines for use of individuals’ data. It requires the firm to notify individuals and obtain consent for storing, use and other criteria. For competition law enforcement purposes, Taiwan’s Fair Trade Act (“FTA”) focuses on use of Big Data in combination with AI algorithms for collusive activities, sharing information about markets, costs, and business strategy. In terms of Big Data markets such as digital platforms and online retail, there appear to be mixed views on potential competitive harm. This is mainly due to the relatively underdeveloped markets in this dimension, and the tradeoffs between market power and innovation. This discussion is ongoing, and there have been no specific initiatives to revise competition laws and address enforcement in Big Data markets.¹⁸

V. FINAL THOUGHTS

There is considerable concern that consolidation of power in online markets has the potential to create significant competition concerns. As the Korea Fair Trade Commission has noted: *“As platform companies grow big, some of them become gatekeeping monopolies and exploit that power, exerting a dual position as a judge and a player in the market Individual merchants cannot survive without online platforms. The balance of power has broken.”*¹⁹

While the European Commission, and more recently the U.S., has started taking more aggressive actions against the dominant platforms, many other countries (some I noted above) have taken a more nuanced approach where they try to balance the potential anticompetitive aspects with the innovations such platforms and e-commerce firms may bring to their economies.

I end my discussion with comments about potential competition, as this is a crucial aspect of competition law. In India, in the battle between Amazon and Reliance, Reliance has apparently given Amazon a run for its money and disrupted its plans:

14 Global Times, “Big data-enabled price discrimination in China’s regulatory crosshairs with fines of up to 0.5% of annual sales,” (July) 2021.

15 Alexandr Svetlicinii & Xie Fali, “Main Developments in Competition Law and Policy 2021 – China,” Kluwer Competition Law Blog, (January) 2022.

16 Ken Dai & Jet Deng, “China: Big Data and Antitrust Risks In Close-Up: From the Perspective of Real Cases,” Mondaq, (November) 2020.

17 “Regulating Big Data: Contextualising CCI probe into WhatsApp’s privacy policy,” Rachael Israel, Sarangan Rajeshkumar & Dhanush Dinesh, VCCI RCLE, (April) 2021.

18 Robin Chang & Eddie Hsiung, “AI, Machine Learning, and Big Data Laws and Regulations: Taiwan,” Global Legal Insights, 2021.

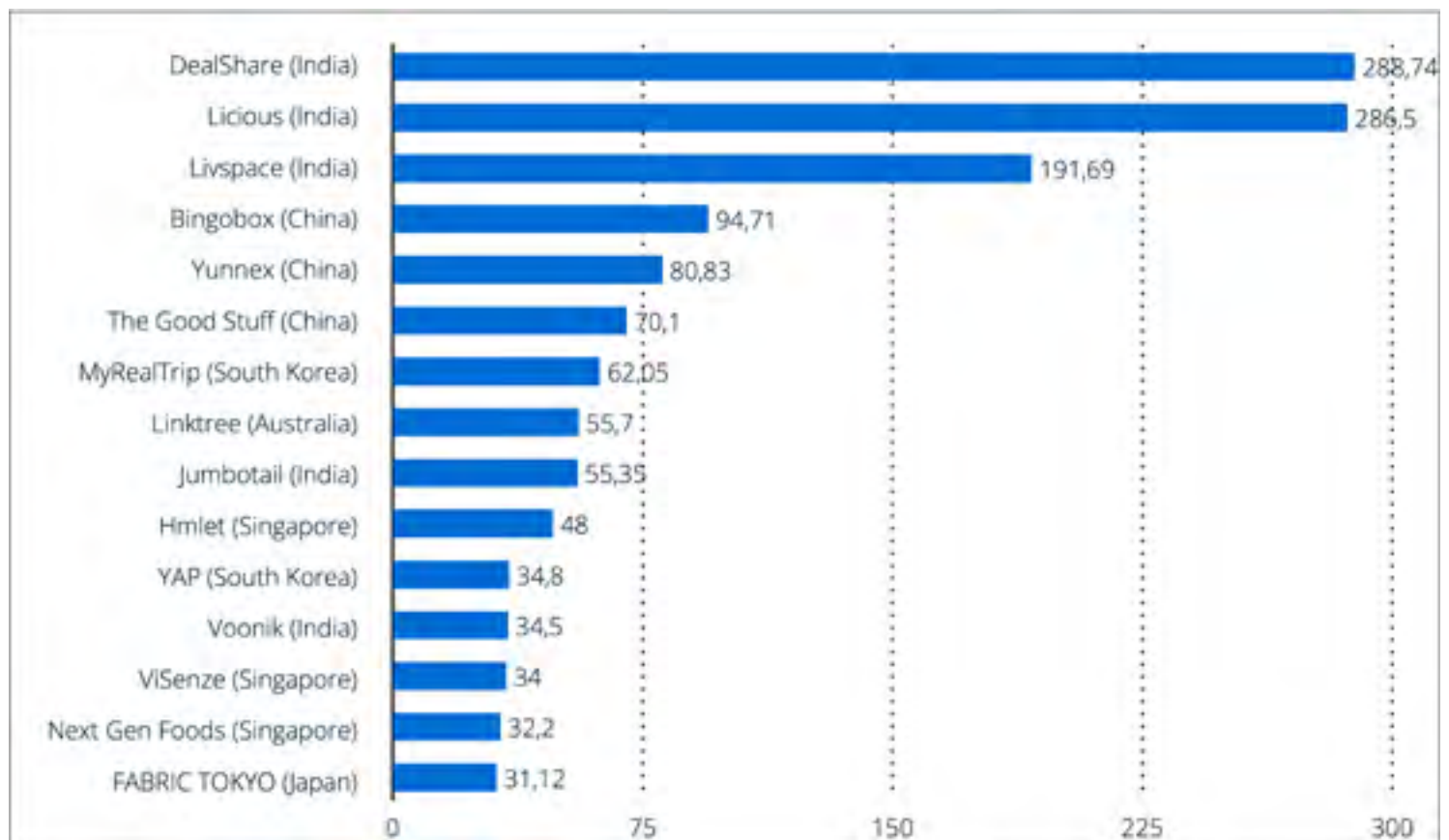
19 Sohee Kim, “Top Antitrust Cop Steers Korea Away from Hard Tech Crackdown,” Bloomberg, 2021.

*"Across India . . . India's biggest conglomerate run by Mukesh Ambani, the country's richest man, presses ahead with a shock de facto takeover of prized retail real estate that Amazon.com Inc has been keen to take part-ownership of. The high-profile bitter dispute between corporate titans in which Amazon has sought to block Reliance's planned \$3.4 billion purchase of Future Group's retail assets is currently before India's Supreme Court. . . .Reliance's sudden possession of the stores appears to have landed what some analysts are calling a coup de grace that spoils Amazon's chances of untangling the transfer of Future's assets to Reliance. That's despite a series of legal battles won by the U.S. e-commerce giant to date blocking the 2020 deal announced between the two Indian companies."*²⁰

This goes to show that global giants like Amazon can be challenged in different countries, with home grown firms offering significant competition.

Another aspect of potential competition is to examine e-commerce startups in the Asia-Pacific region. Figure 1 presents data for 2021. Startups and (potential) competition seem alive and well. Of the 15 startups listed, 5 are from India and 3 from China. The challenge for competition law in markets as large and fast growing as in Asia is to strike the right balance between minimizing anti-competitive behavior and promoting innovation that may help their economies.

Figure 1. E-commerce Startups in Asia-Pacific Region



Source: Statista. "Leading e-commerce startups in the Asia-Pacific region in 2021, by total funding." Data are in million U.S. dollars.

²⁰ Aditya Kalra & Abhirup Roy, "The shops are gone: How Reliance stunned Amazon in battle for India's Future Retail," Reuters, March 6, 2022.

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