

China's Merger Control of Non-Horizontal Transactions: The Growing Role of Economic Analyses and Behavioral Remedies

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China has become one of the largest economies in the world based on purchasing power parity calculations,² so it is not surprising that China's approach to competition policy under the 2008 Anti-Monopoly Law (AML) has garnered much attention from academics, regulators, and policymakers.³ In 2020, China accounted for approximately 15 percent of the global mergers and acquisitions in transaction volume and value.⁴ From 2016 to 2020, M&A in China saw an 11 percent increase in terms of the transaction count and a 30 percent increase in terms of the transaction value, reaching \$733.8 billion in total.⁵ The growth in M&A activities in China highlights the importance of understanding China's merger control policy. This article focuses on issues related to economic analyses and remedies that have surfaced in recent non-horizontal merger cases that may set precedents or references for future proposed transactions.

The implementation of the AML in 2008 marked a turning point in China's competition policy, including its approach to merger review. Prior to 2008, China had implemented several laws addressing competition-related issues such as unfair trade practices, price control, and M&A activities with respect to acquisitions of domestic businesses by foreign investors. The AML established an "economy-wide legislation [that would] take precedence over previous laws and regulations in cases of conflict."⁶ Enforcement of the AML was divided across three agencies: the National Development and Reform Commission (NDRC) for the enforcement of price-related monopoly behaviors including monopoly agreements (such as cartels and resale price maintenance) and abuse of dominance; the State Administration for Industry and Commerce (SAIC) for the enforcement of non-price related monopoly behaviors in terms of monopoly agreements and abuse of dominance; and the Ministry of Commerce (MOFCOM) for the enforcement of merger control, which included

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² International Monetary Fund, *GDP, current prices (Billions of U.S. dollars)—List (2021)*, <https://www.imf.org/external/datamapper/NGDPDP@WE0/OEMDC/ADVEC/WEOWORLD>.

³ See Maureen K. Ohlhausen, *Illuminating the Story of China's Anti-monopoly Law*, ANTITRUST SOURCE (Oct. 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/illuminating-story-chinas-anti-monopoly-law/1310amlstory.pdf. Eleanor M. Fox, *An Anti-Monopoly Law for China—Scaling the Walls of Government Restraints*, 75 ANTITRUST L.J. 3 No. 1, 173-194, (2008). Vanessa Y. Zhang and Xinzhu Zhang, *Chinese Merger Control: Patterns and Implications*, J COMPET LAW ECON, 477-496, 2010 6(2). Allan Fels, *China's Antimonopoly Law 2008: An Overview*, REV IND ORGAN 41, No. 1/2, 7, (2012) ("Fels 2012").

⁴ PricewaterhouseCoopers, *China Corporate M&A Market Review 2020 and Forecast 2021*, Jan. 2021, at 6.

⁵ *Id.* at 12-18.

⁶ Fels 2012 at 11. The AML was included on the legislative agenda in May 1994, and the first complete draft of the AML was available in November 1999. *Id.* at 12.

mergers and other forms of joint ventures and strategic business alliances.⁷ Merger control is addressed in Articles 20 through 31 of the AML, where Article 27 discusses the “factors [that] shall be taken into consideration in the review” and Article 28 acknowledges possible pro-competitive justifications.⁸ The agencies have also released supplementary guidelines that provide more details about their approaches to assessing specific issues, such as *Guidelines Concerning the Definition of Relevant Markets* in 2009 and *Interim Regulations on the Assessment of the Competition Effects of Concentrations of Undertakings under the Anti-Monopoly Law* in 2011.⁹

In 2018, China consolidated competition policy enforcement under the newly created State Administration for Market Regulation (SAMR).¹⁰ SAMR has also taken steps to “consolidate antimonopoly laws and regulations, unify antimonopoly working systems and rules, strengthen the efforts of antimonopoly law enforcement, and efficiently carry out international cooperation in combating anticompetitive conduct.”¹¹ For example, to increase consistency of AML enforcement, SAMR has created “30 working policies and 62 law enforcement document templates covering the whole process and the entire field of anti-monopoly work” and issued “15 template documents . . . to provincial Administrations for Market Regulation to improve the quality and efficiency of anti-monopoly law enforcement.”¹² On November 18, 2021, the National Anti-Monopoly Bureau was officially established, aiming at elevating and strengthening anti-monopoly supervision in China. At the opening ceremony, Wang Yong, Head of the Anti-Monopoly Commission of the State Council, explained that the move reflects the great importance that the Central Committee of the Chinese Communist Party and the State Council place on antitrust enforcement work.¹³ Gan Lin, Deputy Chief of SAMR, was appointed as head of the new bureau. The new administration consists of three divisions, each focusing on a different task: policymaking, antitrust enforcement, and merger reviews.¹⁴ The Competition Policy and Big Data Center was also launched to strengthen theoretical research and technical support on antitrust and competition policy enforcement.¹⁵ The systematic organizational change will strengthen and enlarge antitrust enforcement in the near future.

⁷ Susan Ning, Kate Peng, Sibao Gao and Ting Gong, *NDRC's Enforcement in 2016*, CPI Antitrust Chronicle (Mar. 2017), <https://www.competitionpolicyinternational.com/wp-content/uploads/2017/03/CPI-Ning.pdf>

“Concentrations” may refer to “three types of business transactions/practices: (1) mergers of multiple undertakings; (2) acquisitions of control of other business undertakings via purchase of equities or assets; and (3) acquisition, via contracts or other means, of control of other undertakings or of the capability to exercise a decisive influence on other undertakings.” *Id.* As a shorthand, this article will generally refer to concentrations as mergers.

⁸ Ministry of Commerce People's Republic of China, *Anti-monopoly Law of the People's Republic of China*, (Aug. 3, 2008), <http://english.mofcom.gov.cn/article/policyrelease/Businessregulations/201303/20130300045909.shtml>.

⁹ See below for further discussion. See also Ping Lin and Jingjing Zhao, *Merger Control Policy under China's Anti-Monopoly Law*, REV IND ORGAN 41, 109-132, (2012), at 115-116.

¹⁰ Interview with Wu Zhenguo, Director General, Anti-Monopoly Bureau of the State Administration for Market Regulation (SAMR), People's Republic of China, ANTITRUST SOURCE (June 2021), <https://www.cqn.com.cn/zj/attachment/2021-07/07/5f5a25b6-909f-4d33-bdfa-30e2066263d6.pdf>, at 1.

¹¹ *Id.*

¹² *Id.* at 3.

¹³ Xinhua, *China establishes anti-monopoly bureau to secure fair competition*, CHINA DAILY (Nov. 19, 2021), <https://www.chinadaily.com.cn/a/202111/19/WS61973a37a310cdd39bc765f5.html>.

¹⁴ Zhang Zhi, *National Anti-monopoly Bureau Established with Three New Divisions, Making it Imperative to Break the Super Platform Monopoly*, CHINATIMES (Nov. 20, 2021), <https://www.chinatimes.net.cn/article/112501.html>.

¹⁵ Press Release, China Discipline Inspection and Supervision News, Reform and Innovation to Open Up a New Anti-Monopoly Prospect—An Interview with Gan Lin, Deputy Chief of SAMR, Director-General of National Anti-Monopoly Bureau and Secretary-General of Anti-Monopoly Commission of the State Council (Dec. 19, 2021), https://www.samr.gov.cn/xw/mtjj/202112/t20211219_338196.html.

China's merger control policy has evolved significantly in recent years, with growing use of economic analysis and behavioral remedies adopted by Chinese regulators.

Early assessments of China's merger control policy raised some issues of non-transparency, political interests, and lack of rigorous economic analysis. For example, in a 2012 survey of attorneys at Chambers-ranked international law firms outside of China, respondents relayed that "Chinese merger review lacks the intellectual foundations of U.S. or E.U. industrial organization economics as the driver of merger control" and that "in [conditionally approved] cases, antitrust economic analysis plays a minor role relative to the same or similar mergers in Europe or the United States."¹⁶ Similarly, an overview of China's AML published in 2012 claimed the following "Chinese characteristics" of its competition law: "[state-owned enterprises] have a special role in the Chinese economy"; "a desire not to unduly inhibit the development of Chinese businesses"; and "distinctive challenges that arise from the widespread existence of administrative monopoly and local protectionism."¹⁷

However, China's merger control policy has evolved significantly in recent years, with growing use of economic analysis and behavioral remedies adopted by Chinese regulators. In particular, we focus on conditionally approved, non-horizontal transactions in the last four years after SAMR was formed. In the words of the article summarizing the 2012 practitioner survey, conditionally approved cases are the "cases where differences in approaches would matter the most."¹⁸ Drawing on SAMR's publicly released decisions regarding conditionally approved (or enjoined) transactions, we show how SAMR's approach in practice aligns with the economic principles that China has delineated in its guidelines and provisions.

Trends in China's Merger Control of Non-Horizontal Transactions

As of July 2021, 3,770 merger cases have been closed in China since 2008, of which 50, or approximately 1.33 percent, were conditionally approved, and three were rejected.¹⁹ In its 2019 *Annual Report on Antitrust Enforcement in China*, SAMR reported a marked increase in the number of conglomerate transactions and decrease in horizontal transactions that year. Specifically, there were 206 horizontal transactions (or 44 percent of merger filings in 2019), which is a drop of 17 percent from 2018; 94 vertical transactions (or 20 percent of merger filings in 2019), which is a decrease of 4 percent from 2018; and 165 conglomerate transactions (or 36 percent of merger filings in 2019), which is an increase of 35 percent from 2018.²⁰ In 2020, the number of vertical and conglomerate transactions accounted for 16 percent (78 transactions) and 34 percent (160 transactions), respectively, of the merger filings.²¹ Even so, the fact that 50 percent (or more) of merger filings had vertical or conglomerate elements in 2019 and 2020 represents a far greater share than in 2011, when vertical and conglomerate transactions accounted for only 8 percent and 26 percent, respectively.²²

¹⁶ D. Daniel Sokol, *Merger Control under China's Anti-Monopoly Law*, N.Y.U. J. LAW & BUS. 10, No. 1 (2013): 16 and 18 ("Sokol 2013").

¹⁷ Fels 2012 at 27.

¹⁸ Sokol 2013 at 18.

¹⁹ Chenying Zhang, *Reinforce Anti-monopoly Review of the Concentration of Undertakings and Promote the Standardized and Orderly Development of Platform Economy*, CE.CN (July 10, 2021), http://www.samr.gov.cn/xw/mtjj/202107/t20210710_332526.html

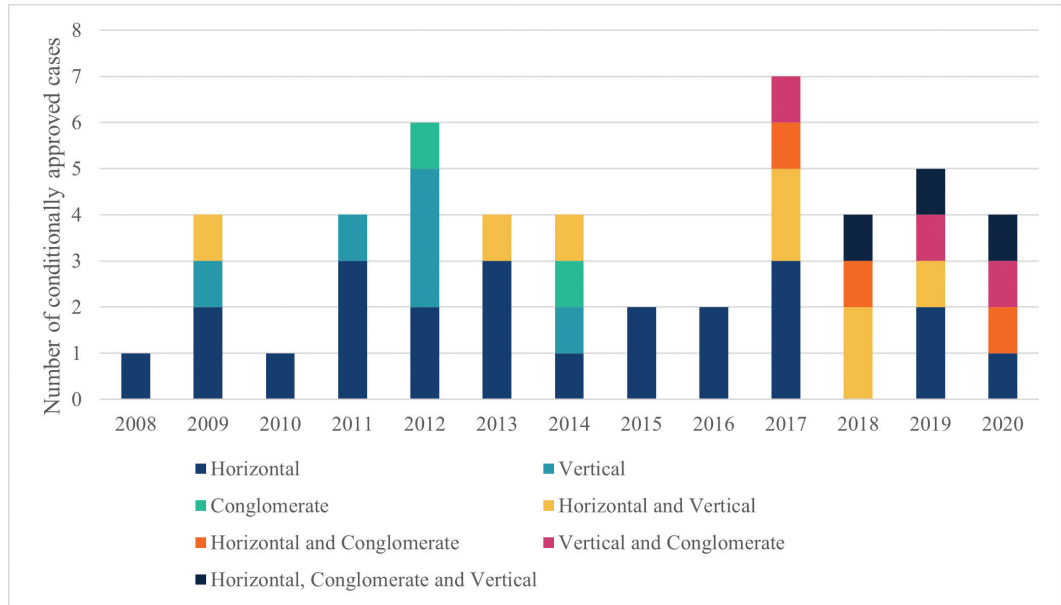
²⁰ State Administration for Market Regulation, *Annual Report on Antitrust Enforcement in China (2019)* (Dec. 25, 2020), <http://www.gov.cn/xinwen/2020-12/25/5573435/files/195171fdee024615933c10d57f141171.pdf>, at 19.

²¹ State Administration for Market Regulation, *Annual Report on Antitrust Enforcement in China (2020)*, (Sept. 3, 2021), <http://www.gov.cn/xinwen/2021-09/24/5639102/files/77006c5bccc04555aa05f30c9a296267.pdf>, at 42.

²² Press Release, State Council Information Office, Press Conference on the 2012 Antitrust Work Progress Held by the Ministry of Commerce (Dec. 31, 2012), <http://www.scio.gov.cn/xwfbh/gbwxwfbh/xwfbh/swb/Document/1263553/1263553.htm>.

Figure 1 below depicts the number of conditionally approved cases by year and by transaction type.²³ Conditionally approved pure horizontal cases accounted for 40 percent and 25 percent, respectively, in 2019 and 2020, much lower than 75 percent in 2011, indicating a substantial decrease of pure horizontal cases.

Figure 1. Number of Conditionally Approved Merger Cases by Transaction Type, 2008 through 2020



Source: State Administration for Market Regulation, *Annual Report on Antitrust Enforcement in China (2020)* September 3, 2021, at 45.

Table 1 provides a summary of the 14 transactions with non-horizontal components between 2017 and 2020. Eleven of the 14 transactions also have horizontal overlap between the merging parties. Similarly, 11 of the 14 transactions have vertical overlap, and 9 transactions involve a conglomerate. During this period, the most common transaction type among conditionally approved non-horizontal transactions is “horizontal and vertical” in five transactions and the remaining three types (“horizontal and conglomerate,” “vertical and conglomerate,” and “horizontal, vertical, and conglomerate”) account for three transactions each.

²³ The transaction types are summarized in each announcement issued by MOFCOM (before Mar. 2018) and SAMR. The announcements are publicly available at Anti-monopoly Bureau, MOFCOM, <http://fldj.mofcom.gov.cn/article/ztxx/> and State Administration for Market Regulation, <http://www.samr.gov.cn/fldj/tzgg/ftjtz/>.

Table 1. Summary of Conditionally Approved Non-Horizontal Transactions in China, 2017 through 2020

Approval Date	Merging Parties	Industry	Transaction Types	Remedy Type
May 2, 2017	Dow / Dupont	Agriculture & Chemicals	Horizontal & Vertical	Behavioral/Structural
Aug 22, 2017	Broadcom / Brocade	Semiconductor	Vertical & Conglomerate	Behavioral
Oct 5, 2017	HP / Samsung	Printer	Horizontal & Conglomerate	Behavioral
Nov 7, 2017	Maersk / Hamburg Süd	Shipping	Horizontal & Vertical	Behavioral
Mar 13, 2018	Bayer / Monsanto	Agriculture	Horizontal & Vertical	Behavioral/Structural
Jul 25, 2018	Essilor / Luxottica	Eyewear Products	Horizontal, Vertical & Conglomerate	Behavioral
Sep 30, 2018	Linde / Praxair	Industrial Gases	Horizontal & Vertical	Behavioral/Structural
Nov 23, 2018	United Tech. / Rockwell Collins	Aircraft	Horizontal & Conglomerate	Behavioral/Structural
Feb 13, 2019	KLA-Tencor / Orbotech	Semiconductor	Vertical & Conglomerate	Behavioral
Sep 23, 2019	II-VI / Finisar	Optical Communications	Horizontal, Vertical & Conglomerate	Behavioral
Oct 18, 2019	Garden Bio-chem / Royal DSM	Biomedical	Horizontal & Vertical	Behavioral
Apr 2, 2020	Infineon / Cyprus	Semiconductor	Horizontal & Conglomerate	Behavioral
Apr 16, 2020	Nvidia / Mellanox	Biomedical	Vertical & Conglomerate	Behavioral
May 15, 2020	ZF Friedrichshafen AG / Wabco	Auto Parts	Horizontal, Vertical & Conglomerate	Behavioral

Sources: Announcements issued by the State Administration for Market Regulation and the Ministry of Commerce.

Growing Role of Economic Analyses in Merger Review

China's merger control policy relies on economic principles to define relevant markets and assess competitive effects. These principles are delineated in the 2009 *Guidelines Concerning the Definition of Relevant Markets* and 2011 *Interim Provisions on Assessing the Impact of Concentration of Undertakings on Competition*, respectively.²⁴ These guidelines and provisions highlight the economic factors and efficiency arguments that should be "comprehensively considered" in the analysis of horizontal and non-horizontal mergers. Below, we first discuss these elements in the context of market definition and then for competitive effects. To illustrate how these principles play out in practice, we offer examples from recent conditionally approved non-horizontal transactions.

Defining Relevant Markets. China's guidelines primarily utilize the concept of demand (and, where applicable, supply) substitution to define a relevant market in antitrust analysis, regardless of whether the transaction is horizontal or non-horizontal.²⁵ Chinese regulators consider characteristics and functionalities of the product, price differentials, and sales channels, among other things, when defining relevant markets.²⁶ In particular, important factors include transportation costs and characteristics, the area in which consumers choose a product or suppliers distribute a product, and trade barriers such as tariffs.²⁷ The guidelines also describe the hypothetical

²⁴ General Office of the State Council, *Guidelines of the Anti-Monopoly Commission of the State Council on the Definition of Relevant Markets* (May 24, 2009), http://www.gov.cn/zwhd/2009-07/07/content_1355288.htm ("Guidelines on the Definition of Relevant Markets"); Ministry of Commerce of People's Republic of China, *Interim Provisions on Assessing the Impact of Concentration of Undertakings on Competition*, (Aug. 29, 2011), www.gov.cn/zwgk/2011-09/02/content_1939083.htm ("Interim Provisions on Assessing the Impact of Concentration").

²⁵ Guidelines on the Definition of Relevant Markets at Articles IV-VI.

²⁶ *Id.* at Article VIII.

²⁷ *Id.* at Article IX.

monopolist test as an analytical tool that can “help resolve uncertainties that may arise in the definition of the relevant market.”²⁸

In its merger-review decision announcements, SAMR specifies the relevant market(s) and whether the relationships between firms are horizontal, vertical, or adjacent. For example, in its review of the proposed merger between Essilor and Luxottica (which was conditionally approved in July 2018), SAMR defined the relevant product markets as wholesale of optical lenses, wholesale of optical frames, wholesale of sunglasses, and retail eyewear products.²⁹ SAMR further identified mid-to-high-end and low-end submarkets within the wholesale markets for optical lenses, optical frames, and sunglasses based on analyses of differences in product pricing, the opinions of industry associations and participants, and conclusions from two market surveys.³⁰ SAMR documented the market shares of the merging entities and of the top competitors for each relevant market.³¹ Across these markets, SAMR found horizontal, vertical, and adjacent relationships. For example, Essilor and Luxottica have “limited horizontal overlap” in mid-to-high-end sunglasses (as well as mid-to-high-end and low-end optical lenses), a vertical relationship between the wholesale markets and retail market, and an adjacent relationship between the optical lens, optical frames, and sunglasses wholesale markets.³² For mid-to-high-end sunglasses, SAMR noted that Luxottica either owns or licenses marquee brand names such as Oakley, Ray-Ban, Chanel, and Bulgari, while Essilor has acquired locally known brands such as Tyrannosaurus, Mosen, and Baosheng in recent years.³³ Therefore, the merger would further “strengthen” the position of Essilor and Luxottica in the mid-to-high-end sunglasses market.

Regarding the relevant geographic markets, SAMR tends to define a global market in industries involving global trade such as semiconductors, shipping, and potassium chloride fertilizer. Examples include ASE Group’s acquisition of Siliconware Precision Industries, Google’s acquisition of Motorola Mobility Holdings, and the merger of Agrium and Potash Corporation of Saskatchewan.³⁴ SAMR has found that these industries engage in global transactions and that tariff and transportation costs do not constitute substantial entry barriers. In contrast, for consumer products such as eyewear (as in the Essilor/Luxottica transaction), SAMR has defined China-specific markets.³⁵ In the case of eyewear, SAMR noted that, because of the importance of adapting eyewear to the

²⁸ *Id.* at Article X. In Article XI, the guidelines discuss potential problems that may arise with the application of the hypothetical monopolist test. For example, in abuse of dominance cases, the current price may be supra-competitive and it needs to be adjusted to the competitive level. As another example, substitution responses may vary across groups of consumers, and different ranges of price increases may be used.

²⁹ State Administration for Market Regulation, *Announcement of the State Administration of Market Supervision on the Decision to Approve the Anti-monopoly Review of the Merger of Essilor International and Luxottica Group with Additional Restrictive Conditions*, (July 25, 2018), www.samr.gov.cn/fldj/tzgg/ftjz/202003/t20200309_312682.html (“Essilor/Luxottica Decision”).

³⁰ Essilor/Luxottica Decision at § 3(1). SAMR concluded that the market for retail eyewear products did not need to be segmented because retailers tended to sell all products and, although there are direct and indirect sales channels, the sales models are “strong substitutes for each other.”

³¹ *Id.* at § 4(1)1 and § 4(1)2.

³² *Id.* at § 3(1).

³³ *Id.* at § 4(1)2.

³⁴ MOFCOM, *Announcement of the conditional approval of ASE Group’s acquisition of Siliconware Precision Industries Co., Ltd.* (November 24, 2017), <http://www.mofcom.gov.cn/article/b/c/201712/20171202690190.shtml>; MOFCOM, *Announcement of the conditional approval of Google’s acquisition of Motorola Mobility Holdings, Inc.* (May 19, 2012), <http://www.mofcom.gov.cn/article/b/c/201205/20120508134325.shtml>; MOFCOM, *Announcement of the conditional approval of the merger of Agrium Inc. and Potash Corporation of Saskatchewan Inc.* (Nov. 6, 2017), <http://www.mofcom.gov.cn/article/b/c/201711/20171102669581.shtml>.

³⁵ Essilor/Luxottica Decision at § 3(2)1 and §3(2)2.

In its assessment of competitive effects of horizontal and non-horizontal mergers, China focuses on potential unilateral effects, coordinated effects, and foreclosure possibilities.

facial features of Chinese people, the relevant geographic market for wholesale optical lenses, optical frames, and sunglasses is the Chinese market.³⁶ Outside the consumer products sector, another example is the market for aluminum auto body panels (as in the Novelis/Aleris case), where SAMR recognized the significant differences in the competitive structure of the Chinese market from other jurisdictions, and the fact that the major foreign operators localized their production by establishing plants in China. Therefore, SAMR concluded that the relevant geographic market was limited to China only.³⁷

Analyzing Competitive Effects in Non-Horizontal Transactions. In its assessment of competitive effects of horizontal and non-horizontal mergers, China focuses on potential unilateral effects, coordinated effects, and foreclosure possibilities.³⁸ More specifically, for vertical mergers, the theories of harm may involve input foreclosure (*i.e.*, the ability of the merged entity to restrict access by downstream competitors to upstream products) and customer foreclosure (*i.e.*, the ability of the merged entity to prevent upstream competitors from accessing downstream customers). For conglomerate mergers, the theory of harm may hinge upon foreclosure via the merged firm leveraging its position in an adjacent market, such as a bundling or tying arrangement.

As exemplified in the merger between ZF Friedrichshafen and WABCO Holding Company, which was conditionally approved in May 2020, SAMR used economic analysis to quantify the incentive of the merged entity to foreclose rivals.³⁹ In particular, SAMR analyzed whether it would be profitable for the combined entity to implement a “raw material refusal to deal strategy” (*i.e.*, a form of input foreclosure) on the mechanical automatic transmission controller, which is the core component of the mechanical automatic transmission.⁴⁰ SAMR determined that the combined entity could profitably refuse to deal because WABCO’s Chinese customers’ purchase volume was significantly less than the purchase volume in the global market, enabling it to achieve input foreclosure with lower costs in the Chinese market; moreover, WABCO’s Chinese customers lacked supply contract protections.⁴¹ In addition, with the anticipated expansion of the Chinese mechanical automatic transmission market (as the penetration rate of mechanical automatic transmissions is expected to increase from 2 percent in 2018 to 20 percent in 2023), foreclosure would likely strengthen the position of the combined entity and enable it to capture the growing market at the expense of its downstream competitors.⁴²

To analyze anticompetitive effects in adjacent markets through bundling or tying, SAMR has used diversion ratios to quantify the potential impact. In its analysis of the merger between Essilor and Luxottica, SAMR conducted a critical diversion ratio analysis on the wholesale prices and gross profit margins of Essilor’s optical lenses and Luxottica’s optical frames.⁴³ The results showed that the combined entity could increase its profits through bundling, which could exclude

³⁶ *Id.* at § 3(2)1.

³⁷ Novelis/Aleris Decision at § 3(2).

³⁸ Interim Provisions on Assessing the Impact of Concentration, at Articles IV and V.

³⁹ State Administration for Market Regulation, *Announcement of the State Administration for Market Regulation on the Anti-Monopoly Review Decision on Approving ZF’s Acquisition of Equity in WABCO Holding Company with Additional Restrictive Conditions* (May 15, 2020), http://www.samr.gov.cn/fldj/tzgg/ftjz/202005/t20200515_315255.html (“ZF/WABCO Decision”).

⁴⁰ ZF/WABCO Decision at § 4(2)1.

⁴¹ *Id.*

⁴² *Id.* at § 4(2)2.

⁴³ Essilor/Luxottica Decision at §4(2)1.

Whereas other jurisdictions (such as the United States and European Union) tend to favor structural remedies to address anticompetitive concerns in mergers, China tends to prefer behavioral remedies and imposes structural remedies in relatively few cases.

competitors in both markets.⁴⁴ SAMR also found that the merged firm would have incentives to bundle or tie the wholesale of optical lenses (both mid-to-high-end and low-end) with mid-to-high-end sunglasses.⁴⁵ As specified in its license agreements for sunglasses, Luxottica is required to meet minimum sales levels over the five- to ten-year duration of the contract. Thus, Luxottica has the incentive to “promote the sale of sunglasses,” which may be facilitated through bundling or tying its wholesale optical lenses and sunglasses products.⁴⁶

Use of Behavioral Remedies in China’s Merger Control

Whereas other jurisdictions (such as the United States and European Union) tend to favor structural remedies to address anticompetitive concerns in mergers, China tends to prefer behavioral remedies and imposes structural remedies in relatively few cases.⁴⁷ Of the 48 mergers that were approved with conditions from 2008 to 2020, the Chinese authorities adopted behavioral remedies in 39 mergers (or 81.3 percent), whereas structural remedies were required in 20 mergers (or 41.7 percent).⁴⁸ Among non-horizontal transactions, the differences are even starker: there have been 25 conditionally approved mergers with behavioral remedies (representing 100 percent of conditionally approved non-horizontal transactions) compared with just six non-horizontal mergers with structural remedies.⁴⁹

Compared with structural remedies, SAMR views behavioral remedies as more flexible, particularly in addressing anticompetitive concerns in non-horizontal transactions. In an interview with *The Antitrust Source*, Mr. Wu Zhenguo (Director-General of the Anti-Monopoly Bureau of SAMR) summarized the advantages of behavioral remedies as follows:

[B]ehavioral conditions can reduce the adverse effects of concentration on competition and maximize the efficiency of concentration, which can effectively maintain market competition and fully protect the interests of the parties concerned. In some cases, as the market can change rapidly and the competition issues are complicated, behavioral conditions can be designed according to the specific circumstances of the cases. Also, in the process of monitoring the implementation of the restrictive conditions, behavioral conditions have their unique advantage because they can be adjusted in time with the change of the market.⁵⁰

⁴⁴ *Id.*

⁴⁵ *Id.* at § 4(2)2.

⁴⁶ *Id.*

⁴⁷ For competition harm due to high market concentration after merger, SAMR not only adopted common structural remedies, but also adopted the restrictive condition of “hold-separate” and set certain conditions on expiration and relief. From 2008 to 2020, there are eight cases involving the “hold-separate” condition, three of which occurred in 2019. The period of remedy is between two and five years.

The eight cases with a “hold-separate” condition are: Seagate’s acquisition of Samsung’s hard disk drive business (2011); Western Digital Corp’s acquisition of Hitachi LG Storage, Inc. (2012); Marubeni Corporation’s acquisition of Gohigh (2013); MediaTek’s merger with MStar Semiconductor, Inc. (Cayman) (2013); ASE Group’s acquisition of Siliconware Precision Industries Co., Ltd. (2017); Cargotec’s acquisition of Derris (2019); II-VI Incorporated’s acquisition of Finisar (2019); and the joint venture between Zhejiang Garden Biochemical High-Tech Co., Ltd. and Royal DSM (2019).

⁴⁸ Over the same period, there have been 12 transactions with both behavioral and structural remedies. See announcements issued by the Anti-Monopoly Bureau of MOFCOM, <http://fdj.mofcom.gov.cn/article/ztxx/>, and SAMR, <http://www.samr.gov.cn/>.

⁴⁹ *Id.* Over the same period, there have been no non-horizontal cases with purely structural restrictions imposed.

⁵⁰ Interview with Wu Zhenguo, Director General, Anti-Monopoly Bureau of the State Administration for Market Regulation (SAMR), People’s Republic of China, ANTITRUST SOURCE (June 2021), <https://www.cqn.com.cn/zj/attachment/2021-07/07/5f5a25b6-909f-4d33-bdfa-30e2066263d6.pdf>, at 12-13.

To address exclusionary behavior through, for example, anticompetitive bundling and tying arrangements or input foreclosure, SAMR has adopted behavioral remedies such as prohibiting the practice of bundling and tying, ensuring continuous supply, and ensuring interoperability or compatibility.⁵¹ When input foreclosure threatens to harm competition among Chinese companies, SAMR may impose conditions on the merging entities to ensure continuous supply of the input product(s) under the principle of fair, reasonable, and non-discriminatory (“FRAND”) dealing.⁵² Since 2017, the typical duration of the behavioral obligations ranges from five to ten years.⁵³ At the end of the remedy period, the combined entity may submit a request to the agency to relieve the obligation(s).⁵⁴ As illustrated in the case involving Corun, Toyota China, Primearth EV Energy (PEVE), Changshu Xinzongyuan, and Toyota Tsusho, SAMR has lifted restricted conditions when industry conditions have evolved in a way that alleviates competitive concerns.⁵⁵

Compared with its counterparts in other jurisdictions, China has at times taken a more cautious stance toward conglomerate mergers, as shown by its decisions to adopt behavioral remedies in certain transactions that were approved unconditionally in other jurisdictions. For example, in NVIDIA Corporation’s acquisition of Mellanox Technologies and Infineon Technologies’ acquisition of Cypress Semiconductor, SAMR expressed concerns that bundling and tying might occur after the close of the mergers and, in its remedies, prohibited the merging parties from bundling or imposing other unreasonable terms of sale.⁵⁶

Case Studies of Mergers with a Non-Horizontal Component

China, like other jurisdictions, has seen an increase in proposed transactions that involve a non-horizontal component. We highlight two recent cases that exemplify SAMR’s approach to assessing the competitive effects of vertical or adjacent relationships. First, we review KLA-Tencor’s acquisition of Orbotech, which was conditionally approved by SAMR in February 2019. The KLA-Tencor/Orbotech merger showcases SAMR’s focus on potential anticompetitive effects that may arise from input foreclosure, particularly in the semiconductor industry. Second, we discuss the proposed merger between HUYA and DouYu, which SAMR enjoined in July 2021. SAMR conducted a comprehensive review of the proposed transaction and raised concerns regarding both unilateral anti-competitive effects from the horizontal overlap in live game-streaming and anticompetitive effects

⁵¹ For example, see State Administration for Market Regulation, *SAMR’s announcement of the conditional approval of Infineon Technologies’ acquisition of Cypress Semiconductor Co.* (Apr. 8, 2020), http://www.samr.gov.cn/fldj/tzgg/ftjz/202004/t20200408_313950.html at § 6 (“Infineon/Cypress Decision”).

⁵² For example, see State Administration for Market Regulation, *SAMR’s announcement of the conditional approval of NVIDIA Corporation’s acquisition of Mellanox Technologies, Ltd.* (Apr. 16, 2020), http://www.samr.gov.cn/fldj/tzgg/ftjz/202004/t20200416_314327.html at § 6(2) (“NVIDIA/Mellanox Decision”).

⁵³ Examples include Broadcom’s acquisition of Brocade Communications Systems in 2017 and Novelis Aluminum’s acquisition of Aleris in 2019. See MOFCOM, *The Ministry of Commerce conditionally approved the case of Broadcom’s acquisition of Brocade Communications Systems* (Aug. 23, 2017), <http://www.mofcom.gov.cn/article/ae/ai/201708/20170802632081.shtml>; SAMR, *SAMR’s announcement of the conditional approval Novelis Aluminum’s acquisition of Aleris*, (Dec. 20, 2019), http://www.samr.gov.cn/fldj/tzgg/ftjz/201912/t20191220_309365.html.

⁵⁴ For example, see *Essilor/Luxottica Decision* at § 6(6).

⁵⁵ State Administration for Market Regulation, *Announcement of the State Administration for Market Regulation on Lifting the Restrictive Conditions for the Concentration of Operators in the Establishment of Corun, Toyota China, PEVE, Xinzongyuan, and Toyota Tsusho* (April 24, 2020), www.samr.gov.cn/fldj/tzgg/ftjz/202004/t20200424_314597.html.

⁵⁶ NVIDIA/Mellanox Decision at §§ 4, 6; Infineon/Cypress Decision at §§ 4, 6. The decisions specify that inputs would continue to be supplied to Chinese customers in accordance with FRAND principles. See NVIDIA/Mellanox Decision at § 6(2) and Infineon/Cypress Decision at § 6(4).

that may arise from the two-way vertical foreclosure of the game operation service market and live game-streaming market.

KLA-Tencor and Orbotech. On February 20, 2019, SAMR required restrictive conditions to the approval of KLA-Tencor's acquisition of Orbotech.⁵⁷ In contrast, the merger was unconditionally approved in other relevant jurisdictions, such as the U.S. and EU.⁵⁸ As discussed in more detail below, SAMR imposed behavioral remedies to address concerns of input foreclosure that could arise from the vertical relationship between KLA-Tencor and Orbotech.

SAMR defined three relevant product markets: (1) process control equipment; (2) specialty applications and advanced packaging deposition equipment; and (3) specialty applications and advanced packaging etching equipment.⁵⁹ Process control equipment is a necessary input for “evaluating the performance of deposition and etching equipment in the industry” and for providing “an important reference for end application customers to measure the technical capabilities of semiconductor device manufacturers and packaging companies.”⁶⁰ KLA-Tencor produces and sells semiconductor process control equipment, particularly “cutting-edge applications, specialty applications and advanced packaging process control equipment,” and Orbotech's business includes “specialty applications and advanced packaging deposition and etching equipment, and the possibility of entering the cutting-edge application deposition and etching equipment market.”⁶¹ Thus, there is a vertical relationship between the merging parties. Although the market for semiconductor equipment is global, SAMR focused on the impact of the merger in China.⁶²

SAMR found that KLA-Tencor has a “dominant market position in the process control equipment market.”⁶³ Specifically, KLA-Tencor holds 50 to 55 percent of the global process equipment market and 55 to 60 percent of the Chinese process equipment market (whereas the second and third largest competitors have 10 percent market share).⁶⁴ In addition, entry barriers are high because “[p]rocess control equipment is a technology- and capital-intensive industry.”⁶⁵ Over time, KLA-Tencor has “accumulated a lot of professional technology and rich industry experience . . . and invests huge amounts of money in research and development every year,” both of which will likely ensure KLA-Tencor's leading position in the short term.⁶⁶

Because process control equipment is a necessary input for deposition and etching equipment manufacturing and KLA-Tencor holds a “dominant” position in the process control equipment market, SAMR expressed concerns that the combined entity would have the “motivation and

⁵⁷ State Administration for Market Regulation, *Announcement of the State Administration for Market Regulation on the Anti-Monopoly Review Decision on Approving KLA-Tencor Corporation's Acquisition of Equities in Orbotech Ltd. With Additional Restrictive Conditions*, (Feb. 20, 2019), https://gkml.samr.gov.cn/nsjg/xwxc/201902/t20190220_290940.html (“KLA-Tencor/Orbotech Decision”).

⁵⁸ Vanesa Yanhua Zhang, John Jiong Gong and Amanda Jing Yang, *Non-Horizontal Mergers in China: A Case Study of KLA-Tencor/Orbotech*, CPI ANTITRUST CHRONICLE (Aug. 2019), <https://www.competitionpolicyinternational.com/non-horizontal-mergers-in-china-a-case-study-of-kla-tencor-orbotech/> at 7 (“Zhang et al. 2019”).

⁵⁹ KLA-Tencor/Orbotech Decision at § 3(1)2. In addition, SAMR considered the potential impact of the merger on “the deposition and etching equipment market for cutting-edge applications.”

⁶⁰ *Id.* at § 4(1)2 and § 4(1)3.

⁶¹ *Id.* at § 3(1)2.

⁶² *Id.* at § 3(2).

⁶³ *Id.* at § 4(1)1.

⁶⁴ *Id.*

⁶⁵ *Id.* at § 4(1)4.

⁶⁶ *Id.*

capabilities to eliminate and restrict market competition in the deposition and etching equipment market⁶⁷ in at least five ways:

1. The combined entity would be able to impose a “vertical foreclosure” on Orbotech’s competitors in the deposition and etching equipment market. Examples of such conduct include: (i) “[refusing, restricting or delaying] the provision of process control equipment and services... and hinder the R&D of competitors’ equipment”; (ii) “[providing] Orbotech with priority or exclusive provision of technology, products, services, etc.”; and (iii) “[charging] Orbotech’s competitors with unreasonably high prices, reduce the quality of their after-sales service, and interfere with the performance evaluation of their equipment. . . .”⁶⁸
2. The combined entity may bundle its process control equipment with deposition and etching equipment and thereby “force semiconductor device manufacturers and packaging companies to abandon purchase of deposition and etching equipment from competitors of Orbotech. . . .”⁶⁹
3. The combined entity may benefit from sensitive information about Orbotech’s competitors, such as their “equipment situation and market trends.”⁷⁰
4. The combined entity may raise rivals’ costs to enter into the market of cutting-edge applications of deposition and etching equipment.⁷¹
5. The combined entity may raise costs for semiconductor device manufacturers and packaging companies by bundling KLA-Tencor’s process control equipment and Orbotech’s deposition and etching equipment in a way that does not allow these customers to choose alternative deposition and etching equipment manufacturers.⁷²

As illustrated in the KLA-Tencor/Orbotech transaction, SAMR continues to closely scrutinize merger filings in the semiconductor industry.

Based on its analysis of competitive effects, SAMR prescribed three behavioral remedies that would expire after five years. The remedies include: (1) the provision of semiconductor process control equipment and related services to manufacturers in the Chinese market in accordance with the FRAND principle; (2) prohibition of tying or bundling the sales of process control equipment and deposition and etching equipment “in any way, or adding other non-conforming equipment without justifiable reasons”; and (3) protection of sensitive information of Orbotech’s competitors in deposition and/or etching equipment manufacturing.⁷³ These remedies directly address the competitive concerns related to a potential “vertical foreclosure,” bundling or tying, and exchange of sensitive business information.

As illustrated in the KLA-Tencor/Orbotech transaction, SAMR continues to closely scrutinize merger filings in the semiconductor industry. Apart from alleviating concerns from potential harm to competition, there is also some indication in the nature of the imposed behavioral remedies that SAMR may also pay attention to fostering growth of the Chinese semiconductor industry, such as requiring the merged entity to supply semiconductor process control equipment and related

⁶⁷ *Id.* at § 4(2).

⁶⁸ *Id.* at § 4(3)1.

⁶⁹ *Id.* at § 4(3)2.

⁷⁰ *Id.* at § 4(3)3.

⁷¹ *Id.* at § 4(3)4.

⁷² *Id.* at § 4(3)5.

⁷³ *Id.* at § 6.

services to manufacturers in the Chinese market in accordance with the FRAND principle and to establish an information firewall for the protection of sensitive business information.⁷⁴

HUYA and DouYu. On July 10, 2021, SAMR blocked the merger of HUYA and DouYu.⁷⁵ Since the implementation of the Anti-Monopoly Law in 2008, this was only the third rejection of a proposed merger and the first blocked merger in the Internet sector.⁷⁶ The HUYA/DouYu transaction showcases SAMR's comprehensive approach to assessing both horizontal and non-horizontal competitive concerns in merger review.

SAMR defined three relevant product markets in this case: (1) live game-streaming; (2) short videos, which are recorded as opposed to broadcast live; and (3) online game operation service.⁷⁷ SAMR defined the relevant geographic market as China because the businesses are required to obtain permits from Chinese regulatory agencies and games are produced in Chinese.⁷⁸ The merging entities—HUYA and DouYu—compete in the live game-streaming and short video markets. In addition, a vertical relationship arises from the relationships of the companies with Tencent. Tencent, which provides online game operation services, has sole control of HUYA and jointly controls DouYu with the team of DouYu's founder, Chen Shaojie.⁷⁹

In its analysis of competitive effects, SAMR raised competitive concerns from both horizontal and vertical perspectives:

- From the horizontal perspective, SAMR focused on the impact of the proposed merger on the live game-streaming market. HUYA and DouYu are leaders of live game-streaming platforms. Considering the business model of platform enterprises, SAMR analyzed market shares and concentration along three dimensions: number of active users, turnover, and streamers (i.e., individuals who provide game-streaming content). In these market, the combined shares of the two merging companies exceed 80 percent, 70 percent, and 60 percent, respectively. Moreover, barriers to entry in the live game-streaming market are high because of copyright use, licensing, funding, and resources available to streamers. Therefore, in the short term, HUYA and DouYu would be expected to remain dominant in the market. The proposed merger between HUYA and DouYu would likely reduce consumers' and streamers' choices of platforms and thereby allow the combined entity to "reduce product quality, increase service prices, or reduce user experience, and harm consumer rights."⁸⁰
- From the vertical perspective, SAMR analyzed Tencent's incentive and ability to conduct "two-way vertical foreclosure" in the upstream online game operation service market and the downstream live game-streaming market.⁸¹ In addition to the combined entity's high market share in the downstream market (at least 60 percent), Tencent's market share in the upstream market of online game operation service is more than 40 percent, which ranks first and far

⁷⁴ Zhang et al. 2019 at 5.

⁷⁵ State Administration for Market Regulation, *Announcement of the State Administration for Market Regulation on the Anti-Monopoly Review Decision on Prohibiting the Merger between HUYA Company and DouYu International Holdings Co., Ltd.* (July 10, 2021), www.samr.gov.cn/fldj/tzgg/ftjtz/202107/t20210708_332421.html ("HUYA/DouYu Decision").

⁷⁶ See *supra* note 19; Zen Soo, *Chinese regulator halts HUYA-Douyu game-streaming merger*, AP NEWS (July 10, 2021), <https://apnews.com/article/business-technology-9d06902bae41db5d87082b810a186c0c>.

⁷⁷ HUYA/DouYu Decision at § 3(1).

⁷⁸ *Id.* at § 3(2).

⁷⁹ *Id.* at § 2.

⁸⁰ *Id.* at § 4(1).

⁸¹ *Id.* at § 4(2)1.

The HUYA/DouYu transaction exemplifies SAMR’s comprehensive approach to assessing a proposed merger in digital platforms and in the internet sector. SAMR did not limit its analysis to horizontal overlap but also highlighted concerns of market dominance from a vertical standpoint.

exceeds that of other competitors.⁸² Entry barriers are high in online game operation service because of “capital and time costs” as well as the need for “relevant qualifications” and the “game license number.”⁸³ Thus, the combined entity would have dominant market positions in both upstream and downstream markets, and it would have the “ability and motivation” to create a “closed loop.”⁸⁴ Downstream live game-streaming platforms rely on upstream online game operation service for content; therefore, the combined entity could use its dominance in the upstream market to “eliminate or restrict competition” in the live game-streaming market.⁸⁵ Upstream online game operation service providers rely on downstream streaming platforms for “promotion of game content;” therefore, the combined entity could use its dominance in the downstream market to block upstream competitors.⁸⁶ Through both channels, the combined entity could foreclose existing competitors and stifle potential competitors in the upstream and downstream markets.

SAMR determined that the commitment scheme of restrictive conditions submitted by the merging entities was insufficient to alleviate the concerns of competitive harms in the live game-streaming and online game operation service markets.⁸⁷ The parties also failed to present pro-competitive justifications (or “the beneficial effects of concentration on competition”) that would arise from the proposed merger.⁸⁸ Thus, SAMR decided to enjoin the merger.

The HUYA/DouYu transaction exemplifies SAMR’s comprehensive approach to assessing a proposed merger in digital platforms and in the internet sector. SAMR did not limit its analysis to horizontal overlap but also highlighted concerns of market dominance from a vertical standpoint. Proposed mergers in the future should take heed of the theories of harm and analyses raised in HUYA/DouYu.

Conclusion

As more non-horizontal transactions continue to appear in China, the roles of economic analyses and behavioral remedies have also expanded in China’s merger control policy. Recent cases illustrate how guidelines concerning market definition and competitive effects, which were published in 2009 and 2011, respectively, are implemented by the Chinese competition authority in practice. Recent conditionally approved mergers also show China’s propensity to adopt behavioral remedies to address potential anticompetitive effects from theories of harm that can arise from non-horizontal mergers, such as input or customer foreclosure. Two case studies—KLA-Tencor/Orbotech and HUYA/DouYu—exemplify the ways in which economic analyses and behavioral remedies can fit together, as well as SAMR’s comprehensive approach (from both horizontal and vertical perspectives) to merger review. We anticipate that these trends in China’s merger control policy will persist alongside the growth in non-horizontal transactions. ●

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.* at § 4(2)2.

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.* at § 5.

⁸⁸ *Id.*