

# ANTITRUST ENFORCEMENT AND LITIGATION IN THE SEMICONDUCTOR INDUSTRY IN CHINA (PATTERNS AND UPDATES)



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# I. THE SEMICONDUCTOR INDUSTRY AND ANTITRUST

Semiconductors are materials used to produce integrated circuits (“ICs” or “chips”).<sup>2</sup> Many semiconductor products are subject to intellectual property rights (“IPRs”) covering both their production and design.

China is the largest semiconductor market in the world. As early as 2015, China’s imports of semiconductors had already surpassed its imports of crude oil.<sup>3</sup> According to a McKinsey report, China consumed 45 percent of chips globally, and more than 90 percent of its consumption of chips derived from imports.<sup>4</sup>

Many products (such as smartphones and TVs) are made in China, and are purchased both by Chinese consumers and exporters. Obviously, these products rely on semiconductors for their functionality.<sup>5</sup> On the one hand, China is highly dependent on other countries for ICs, but on the other hand, ICs have a crucial impact on China’s economy. China therefore has a strategic interest in the development of the semiconductor industry. To this end, the National Semiconductor Industry Development Guidelines were formulated, the IC Industry Equity Investment Funds were established. And the national strategic plan “Made in China 2025” sets out a clear goal to localize semiconductor production.<sup>6</sup>

The Anti-Monopoly Law (“AML”) plays an important role in the development of China’s semiconductor industry. This is in part due to the characteristics of the semiconductor industry itself.

First, from a global perspective, the semiconductor industry is no longer growing quickly. It is in a mature period, and players are restructuring and integrating through mergers.<sup>7</sup> Many such mergers have occurred between leading companies, such as *Avago/Broadcom*, *NXP/Freescale*, and the planned *Qualcomm/NXP* transaction. Accordingly, the number of merger reviews<sup>8</sup> in the semiconductor industry has increased.

Second, as a result of these mergers, only a few undertakings remain in each segment of the semiconductor industry. The market is hence highly concentrated and may display oligopolistic characteristics. Under conventional antitrust economics, such a market structure is conducive to anti-competitive behavior, including collaboration among undertakings.

Third, the semiconductor industry is technology-intensive and IPR barriers are high. New entrants may face the problem of being unable to obtain IPR licenses, or when they are licensed, they may not have strong bargaining power, so may have to passively accept conditions offered by IPR holders. When such IPR holders are deemed to have market dominance, their licensing behavior risks violating the AML.

Therefore, when analyzing antitrust enforcement (both by public bodies and through private litigation) in the semiconductor industry in China, the focus should not only be on the legal analysis under the AML, but also on the specific characteristics of the semiconductor industry and its importance to China’s economy.

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2 “Notice of Merger Review Decision on Approval with Restrictive Conditions of Broadcom Ltd.’s Acquisition of Brocade Communications Systems, Inc.,” Notice of the Ministry of Commerce, No.46 of 2017.

3 Wen Jing, “How A ‘Core’ Is Refined: It Requires 5000 Processes,” Beijing Youth Daily, April 23, 2018, [http://www.xinhuanet.com/fortune/2018-04/23/c\\_129856744.htm](http://www.xinhuanet.com/fortune/2018-04/23/c_129856744.htm).

4 Gordon Orr & Christopher Thomas, “Semiconductors in China: Brave New World or Same Old Story?,” McKinsey, August 2014.

5 Semiconductors have a very wide range of downstream applications, including electronics (computers, etc.), automotive optoelectronics, LED lighting, optical communications, receiving, controlling, and transmitting devices.

6 The goal to localize semiconductor production in the “Made in China 2025” goals is set out as follows: “by 2020, localization rate of 90-32 nanometer process equipment shall reach 50%, localization rate of 90-nanometer lithography machine shall be realized, and localization rate of assembly and testing key equipment shall reach 50%. By 2025, the localization rate of 20-14 nanometer process equipment shall reach 30%, realizing the localization of immersion lithography machine. By 2030, it shall realize the localization of 18-inch process equipment, EUV lithography machine and assembly and testing equipment.”

7 Chen Kai, “Why Is Now A Good Time For the Semiconductor Industry?,” Jiye Changqing Economic Research Institute, June 16, 2019, <https://www.iyiou.com/p/102955.html>. As to the reasons for the players in the semiconductor industry choosing M&A to boost growth, see “Recharge Semiconductor Growth with M&A” Accenture, January 4, 2020, <https://www.accenture.com/us-en/insights/strategy/semiconductor-mergers-acquisitions>.

8 In this article, “merger” and “concentration” are used interchangeably.

## II. RECENT ANTITRUST ENFORCEMENT IN SEMICONDUCTORS IN CHINA

### A. Merger Review is the Focus of Enforcement

In a total of 41 merger cases approved with conditions, eight involve the semiconductor industry,<sup>9</sup> including the more recent cases of *Il-VI/Finisar* ("Finisar"), *KLA-Tencor* ("KLA-Tencor")/*Orbotech*, *Ase Semiconductor* ("ASE")/*Siliconware Precision Industry* ("Spil"), and the earlier cases of *Broadcom/Brocade*, *NXP/Freescale*, and much more earlier cases of *MediaTek* ("MTK")/*MStar*, *Western Digital/Hitachi Storage*, and *Seagate/Samsung Electronics HDD business*. A statistical analysis of those 41 merger cases based on industry categorization show that the semiconductor industry appears to receive more attention as compared to other industries.

### B. Enforcement of Abuse of Dominance Rules Occasionally Targets the Semiconductor Industry

China's first investigation into an alleged abuse of dominance involving the semiconductor industry was launched against Qualcomm (the "*Qualcomm* investigation"). Decision found that Qualcomm held a dominant position in the CDMA baseband chip market, the WCDMA baseband chip market and the LTE baseband chip market. It found that Qualcomm abused its position in those markets by requiring standard-essential patent ("SEP") implementers to accept the terms of a non-challenge patent license agreement. Otherwise Qualcomm would refuse to supply chips. The authority found that this amounted to attaching unreasonable trading conditions to a transaction, contrary to the AML. As a result, Qualcomm was fined CNY 6.88 billion.<sup>10</sup>

In May 2018, the enforcement agency again launched an investigation against undertakings in the semiconductor industry, namely Samsung, Hynix and Micron, the three largest memory chip suppliers in the world (the "*memory chips* investigation"). According to publicly available information, the main trigger for this investigation was the increasing prices of DRAMs. Zhenguo Wu, the Director of the Antimonopoly Bureau of the State Administration of Market Regulation ("SAMR") announced, in a progress report to the media, that "the Antimonopoly Bureau will ... research .... the relevant market definition ... market dominance and [any] abusive behavior engaged [in] by the firms."<sup>11</sup> Based on this, it appears that the investigation is being conducted within the framework of the abuse of market dominance provisions of the AML. According to the *Beijing Business Daily*, the main alleged behavior concerned by the investigation is tying.<sup>12</sup>

### C. The Semiconductor Industry is Seldom of Concern in Antitrust Lawsuits, but SEP Licensing Conduct in the Industry has Caused Concerns

So far, the only antitrust lawsuit that has directly involved the semiconductor industry is *Apple v. Qualcomm*. Apple alleged that Qualcomm abused its dominant position in the global baseband chip market and claimed CNY 1 billion.<sup>13</sup> The case eventually ended in April 2019 with a worldwide settlement between the parties.

9 Most mergers in the semiconductor industry have been approved, including the *Shenzhen Huiding Technology/NXP* merger, *NXP/Meiman Electronic Technology* merger, *Ziguang Guoxin Microelectronics/Beijing Ziguang Liansheng Technology* merger, *MediaTek Technology/Victronics (Tianjin) Electronic Technology* merger, *Bain Capital/Toshiba Memory* merger, *Microchip Technology/Microsemi* merger, *Marvell/Cavium* merger, *Micron/IM Flash* merger, etc. See Elaine Lin, "ESMC Inventory: 2018 Semiconductor Mergers Total Transaction Volume Exceeded 734.5 Billion (Part 1)," International Electronic Information, January 22, 2019, <https://www.esmchina.com/news/4693.html>; "ESMC Inventory: 2018 Semiconductor Mergers Total Transaction Volume Exceeded 734.5 Billion (Part 2), International Electronic Information, January 23, 2019, <https://www.esmchina.com/news/4689.html>.

10 The National Development and Reform Commission, "Fa Gai Jia Jian Chu Fa [2015] No. 1 Administrative Penalty Decision."

11 Han Shengjiang, "SAMR: Significant Progress Has Been Made in the Anti-monopoly Investigation Against Samsung, Hynix and Micron," The Paper, November 16, 2018, [https://www.thepaper.cn/newsDetail\\_forward\\_2639731](https://www.thepaper.cn/newsDetail_forward_2639731).

12 Shi Feiyue, "Samsung, Micron and Hynix Are Under Antitrust Investigation," Beijing Business Daily, June 4, 2018, [http://www.sohu.com/a/233925535\\_115865](http://www.sohu.com/a/233925535_115865).

13 "Apple Sues Qualcomm for Abuse of Market Position in China" *ChinaTechNews*, February 7, 2017, <https://www.chinatechnews.com/2017/02/06/24737-apple-sues-qualcomm-for-abuse-of-market-position-in-china>.



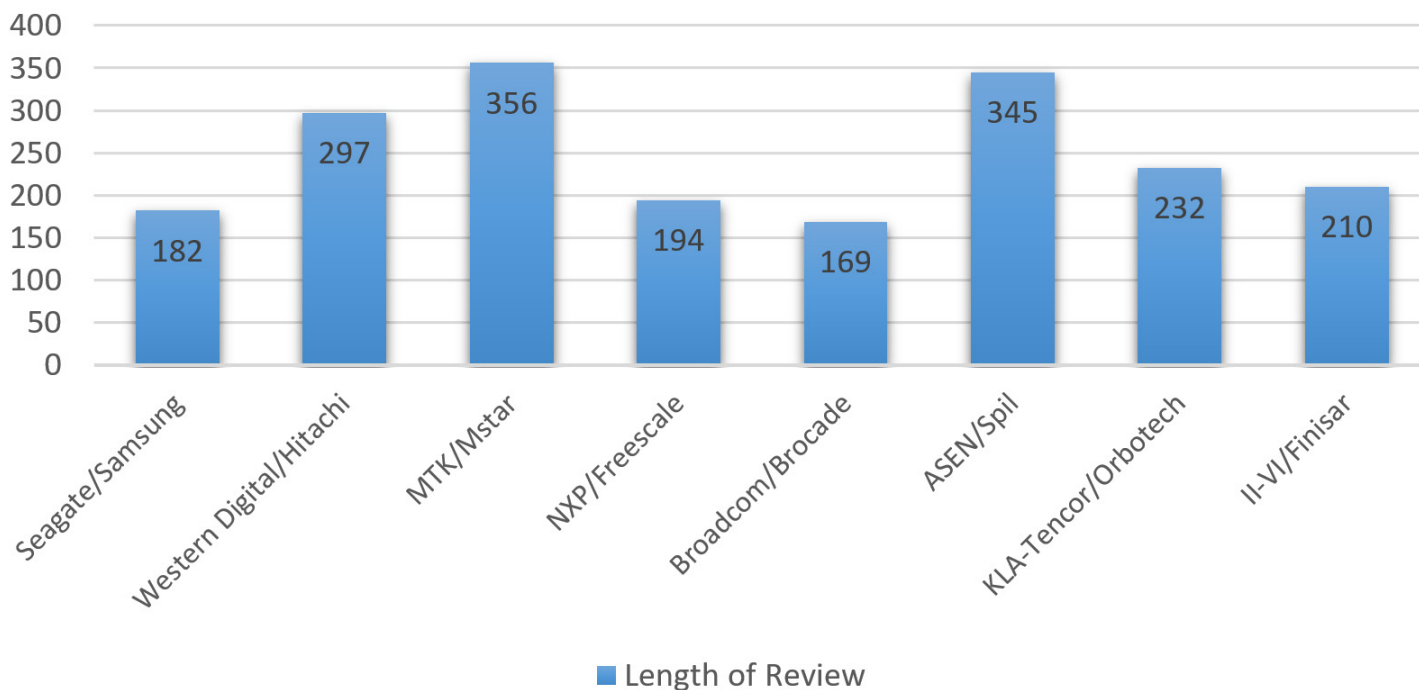
SEP licensing in the semiconductor industry has triggered numerous antitrust lawsuits in China. Yet, with the exception of the abuse of dominance case of *Huawei v. IDC*, there has been no judgement on the merits in other antitrust lawsuits against SEP licensing practices to date. Most cases have ended with a settlement between the parties following the determination of jurisdiction. These cases include the aforementioned *Apple v. Qualcomm* matter, as well as *Qualcomm v. Meizu*, *ZTE v. Vringo*, *Yulong v. Ericsson*. Currently, OPPO and Xiaomi are involved in antitrust lawsuits that they have filed against Sisvel concerning wireless SEP licensing in Guangzhou and Beijing.<sup>14</sup>

### III. CHARACTERISTICS AND COMMON CONCERNS IN ANTITRUST ENFORCEMENT ACTIONS IN THE SEMICONDUCTOR INDUSTRY

#### A. Observations on Merger Review Decisions Conditionally Approving Concentrations in the Semiconductor Industry

##### 1. The Time Limit for Reviewing Concentrations is Generally Longer

Based on a review of the eight merger cases noted above, the time spent reviewing these cases is generally above-average. The enforcement agency took an average of 248 days from the beginning of the review to the final decision. The review of *MTK/MStar* took 356 days (the longest case), while *Broadcom/Brocade* took 169 days (the shortest). Compared with the average time spent reviewing conditionally approved merger cases, i.e. 201 days, the time spent reviewing mergers in semiconductor industry is therefore longer than average.



*Merger review statistics (days to final decision)*

There are two main reasons for which the authority takes a relatively long time to review these cases.

First, in these eight cases, the parties to were often the leading companies in the industry, and had market power in the relevant market(s). The enforcement agency tends to be more cautious in such situations, as such concentrations could result in the removal of close competitors. For example, Finisar and II-VI respectively ranked as the second and third largest players in the global wavelength selective switch market. ASE and Spil were the first and third largest firms in the global semiconductor assembly and packaging service market. Freescale and NXP respectively ranked as the first and second largest players in the global RF power transistor market.

<sup>14</sup> Jingqiu Chen, "Xiaomi Sued Sisvel! What Happened?" *China Intellectual Property News*, December 11, 2019, <https://tech.sina.com.cn/roll/2019-12-11/doc-iihnzahi6701183.shtml>; "OPPO, Xiaomi Sued Sisvel for Not Granting Patents on Fair Terms," December 18, 2019, [http://www.sohu.com/a/361241704\\_99900743](http://www.sohu.com/a/361241704_99900743).

Second, as noted above, semiconductor industry is significant to China's economic development. Therefore, when there are major concentrations, stakeholders and relevant government departments express their concerns about their impact from their respective perspectives. The enforcement agency needs to take more time and energy to listen to relevant opinions, convey those opinions to the undertakings concerned, and wait for their responses.

## 2. The Main Concerns Reflected in the Eight Merger Cases

### a) Main concerns relating to horizontal concentrations

Of the eight cases, five concerned horizontal mergers: *ASE/Spil*, *NXP/Freescale*, *MTK/MStar*, *Western Digital/Hitachi Storage*, and *Seagate/Samsung HDD business*. The *II-VI/Finisar* concentration involved both horizontal overlaps and vertically related and complementary businesses.

Regarding these horizontal concentrations and the *II-VI/Finisar* concentration, the enforcement agency expressed three common concerns. Firstly, the removal of close competitors could have adversely affected effective competition restraints on the post-merger entity. Second, all the concentrations would have resulted in the reduction of alternative suppliers for downstream customers. Third, barriers to entry in the relevant markets were significant, and thus new entry would be difficult.

In terms of theories of harm, coordinated effects were raised in *II-VI/Finisar*, *Western Digital/Hitachi storage*, and *Seagate/Samsung HDD Business*. The unilateral effects theory was applied in *ASE/Spil*. In *NXP/Freescale* and *MTK/MStar*, neither coordinated nor unilateral effects concerns were raised.

The reason unilateral effects concerns were raised in *ASE/Spil* is because the merger concerned outsourced semiconductor assembly and testing services. This market is different from the relevant markets concerned in the other three concentrations, which are highly concentrated, with only a few competitors.<sup>15</sup> Following the *ASE/Spil* transaction, the post-merger entity's market share would only have been 25 to 30 percent, and at least three other competitors would remain on the relevant market.<sup>16</sup> This market structure was therefore not conducive to the implementation of coordinated conduct.

In *NXP/Freescale* and *MTK/MStar*, the main reason for not applying either the unilateral effect or coordinated effects theories was that after the concentrations, the market shares of the post-merger entities would have exceeded 50 percent.<sup>17</sup> According to the AML, these post-merger entities could therefore be presumed to have a dominant market position, which would mean that they could have had the ability to implement unilateral conduct to harm competition. Therefore, the decisions only emphasize that the post-merger entities would enhance their control over the market or have a dominant market position.<sup>18</sup>

Based on these decisions, it appears that the main concerns of the enforcement agency concerning horizontal mergers in the semiconductor industry do not deviate from the concerns normally raised in such cases, i.e. whether the post-merger entity could implement unilateral conduct or coordinate with incumbents to harm competition.

The enforcement agency also takes into account industry features and trends when assessing the competitive effects of concentrations. This is evident in *ASE/Spil* and *MTK/MStar*. Based on the wording of these two decisions, the attitudes of the enforcement agency towards unstable competition and quickly evolving technologies are consistent, even though it has been four years since the enforcement agency considered them for the first time in its review of *MTK/MStar*. Specifically, the enforcement agency recognizes that where competition in the relevant market is not stable, and technologies are evolving quickly, any unfavorable consequences of a merger can be compensated for to some degree. However, any such compensation is not necessarily enough to eliminate the merger's potential to lessen or exclude competition.

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<sup>15</sup> The Notice of the Merger Review Decision to Conditionally Approving the Stock Acquisition of Spil by ASE, <http://fldj.mofcom.gov.cn/article/zbxx/201711/20171102675701.shtml>.

<sup>16</sup> *Ibid.*

<sup>17</sup> The Notice of the Merger Review Decision to Conditionally Approving the Stock Acquisition of Freescale by NXP, <http://fldj.mofcom.gov.cn/article/zbxx/201511/20151101196182.shtml>, The Notice of the Merger Review Decision to Conditionally Approving the Concentration between MTK and MStar, <http://fldj.mofcom.gov.cn/article/zbxx/201308/20130800269821.shtml>.

<sup>18</sup> *Ibid.*

## b) Main concerns relating to non-horizontal concentrations

The key non-horizontal merger cases in this industry are *Broadcom/Brocade* and *KLA-Tencor/Orbotech*. Although the *II-VI/Finisar* concentration also involved businesses that were vertically related and complementary, the enforcement agency did not raise concerns. In *Broadcom/Brocade* and *KLA-Tencor/Orbotech*, there were two concerns in common. First, the improper use of sensitive commercial information by the post-merger entity could have resulted in the elimination or restriction of competition. Second, the implementation of conduct such as tying and bundling by the post-merger entity could have resulted in the leveraging of market power, and thus market foreclosure.

Undertakings in the upstream and downstream portions of the semiconductor supply chain cooperate very closely. Upstream semiconductor design companies need to cooperate closely with downstream manufacturing companies, which, in turn, need to maintain close communication with assembly and testing companies. Currently, cooperation is even closer due to the trend of integrating manufacturing, assembly and testing technologies.

This close cooperation leads the enforcement agency to pay close attention to the use of sensitive information when it reviews non-horizontal concentrations. As this close cooperation enables upstream manufacturers to obtain sensitive commercial information from their downstream clients, through improper use of such sensitive commercial information, upstream manufacturers could potentially disadvantage the competitors of acquired downstream undertakings.

A post-merger entity with market power in a relevant market may not be a necessary precondition for raising such concerns. In other words, such concerns appeared to be triggered mainly by the features of the semiconductor industry, rather than any change in market power due to a concentration. Moreover, one should be aware that close cooperation between undertakings in the semiconductor industry is not limited to upstream and downstream manufacturers. Since components used in end-products need to be compatible, suppliers of different components may need to closely cooperate with each other, too. Therefore, the improper use of sensitive commercial information can also lead to the elimination or restriction of competition in adjacent markets. The decision to conditionally approve *Broadcom/Brocade* provides a typical example of such reasoning.<sup>19</sup>

The theories of harm used to assess non-horizontal concentrations are mainly based on possible market foreclosure, and the analysis focuses on whether the post-merger entity would have the ability or the incentive to foreclose competition. In both *Broadcom/Brocade* and *KLA-Tencor/Orbotech* the transactions would have given the post-merger entities dominant market positions. As a result, the enforcement agency considered that the post-merger entities had the ability to implement conduct like bundling and tying to foreclose competition.

With respect to the incentive to foreclose, the decision in *Broadcom/Brocade* does not touch upon this issue. However, in *KLA-Tencor/Orbotech*, the enforcement agency carried out its assessment carefully. It pointed out that, on the one hand, Orbotech had occupied a particular place in the markets for special applications, advanced packaging deposition equipment and special application and advanced packaging etching equipment (the “SAAPDE” and “SAAPEE” markets). The concentration hence created conditions that would enable the post-merger entity to expand its business in these markets. On the other hand, it paid attention to the fact that the SAAPDE and SAAPEE markets are very large, with prospects for future development.<sup>20</sup>

Therefore, although the enforcement agency did not analyze the question further, it is reasonable to conclude that to increase its profit, the post-merger entity in *KLA-Tencor/Orbotech* would have sought to expand its business in the SAAPDE and SAAPEE markets. The post-merger entity would hence have had the incentive to implement conduct such as refusals to deal, discrimination against different customers, imposing unreasonable trade conditions, bundling, and tying, to eliminate or restrict competition in the SAAPDE and SAAPEE markets.

The enforcement agency also believed that the *KLA-Tencor/Orbotech* concentration would have adversely affected competition in the market for frontier application deposition and etching equipment (the “FADEE” market). The basic logic behind this concern was that with the strength of KLA-Tencor, Orbotech could enter into the businesses of producing and selling frontier application deposition and etching equipment.<sup>21</sup>

<sup>19</sup> See “Notice of the Merger Review Decision to Conditionally Approving the Broadcom/Brocade Concentration,” <http://fldj.mofcom.gov.cn/article/zbxx/201708/20170802632065.shtml>.

<sup>20</sup> See “Notice on the Merger Review Decision to Conditionally Approving the KLA-Tencor/Orbotech Concentration,” [http://gkml.samr.gov.cn/nsjg/xwxs/201902/t20190220\\_290940.html](http://gkml.samr.gov.cn/nsjg/xwxs/201902/t20190220_290940.html).

<sup>21</sup> *Ibid.*

According to this logic, the direct consequence of the concentration would have been the creation of a potential competitor in FADEE. However, the enforcement agency held that KLA-Tencor could have restricted the competitors of Orbotech, which were also clients of KLA-Tencor, from carrying out R&D, by treating them discriminatorily, and tying and bundling products, through using its advantages in the market for process control equipment. Thus, it could have raised barriers to entry in FADEE. As a result, potential competition FADEE could have been affected.<sup>22</sup>

Based solely on the *KLA-Tencor/Orbotech* decision, concerns relating to potential competition as expressed by the enforcement agency appear not to be consistent with the ordinary understanding of potential competition. The theory of potential competition typically cuts two ways in merger review. When a concentration results in the elimination of a potential competitor, the relevant antitrust law enforcement agencies might consider blocking the concentration (or imposing conditions for approval). The existence of potential competition, on the flipside, could lead enforcers to believe that the post-merger entity would remain subject to effective competitive restraints. As a result, even if the post-merger entity might have market power, it could still potentially be approved.<sup>23</sup>

Therefore, the above conclusion of the enforcement agency that potential competition in FADEE could have been harmed does not appear to be based on a finding of any elimination of a potential competitor, but rather on the mere assumption that the *KLA-Tencor/Orbotech* deal would raise barriers to entry in FADEE, even though it could simultaneously have created a potential competitor.<sup>24</sup>

One of the conditions imposed on the *KLA-Tencor/Orbotech* concentration was that both parties and the post-merger entity would be required to follow the fair, reasonable and non-discriminatory (“FRAND”) principle, and continue to supply process control equipment and related services to China’s manufacturers of disposition and/or etching equipment in a stable manner.<sup>25</sup> The FRAND principle originates from obligations placed on holders of SEPs by standard setting organizations, and aims at restraining the licensing practices of SEP holders. It is quite rare for the FRAND principle to be used outside the area of SEP licensing.

This notwithstanding, the above condition is favorable to Chinese manufacturers of disposition and etching equipment. China is devoting its efforts to boosting growth in the semiconductor industry, and it is not strange for the enforcement agency to consider industrial policy in merger review. As such, the imposition of this condition may be unexpected, yet it is also somehow inevitable.

## ***B. Abuses of Dominance in the Semiconductor Industry: Possible New Moves and Concerns***

As noted, the *Qualcomm* case is the most prominent investigation initiated by the enforcement agency against an undertaking in the semiconductor industry concerning a possible abuse of dominance. Not much public information is currently available on the *memory chips* investigation. Thus, unlike in the domain of merger review, synthesizing abuse of dominance investigations in the semiconductor industry and common features and concerns does not seem feasible. Moreover, as the facts involved in the *Qualcomm* investigation and the *memory chips* investigation are different, it is difficult to see how the analysis and rationale in the *Qualcomm* decision would affect the *memory chips* investigation.

Nevertheless, it is worth noting, in relation to the tying conduct in the *memory chips* investigation, that in 2019, the enforcement agency adopted its Interim Provisions on Prohibition of Abuse of Dominant Market Position, which amended the rules on tying conduct: whether the undertaking has “mandatorily” bundled or combined different product is no longer the key factor to determine whether an undertaking’s behavior constitutes illegal tying. The impact of this amendment on the ongoing investigation remain unclear, and further observations are needed.<sup>26</sup>

Since the enforcement agency is investigating Samsung, Hynix and Micron at the same time, it can be reasonably inferred that the investigation may involve allegations of collective dominance. In practice, the enforcement agency has applied the concept of collective dominance in the *Isoniazid* and *Chlorpheniramine* cases, where undertakings involved were subject to antitrust penalties. In the *Chlorpheniramine* case, although only one of the undertakings with collective dominance sold goods at an unfairly high price, this did not affect the enforcement agency’s

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<sup>22</sup> *Ibid.*

<sup>23</sup> Mats A. Bergman “Potential Competition: Theory, Empirical Evidence and Legal Practice” Department of Economics, Uppsala University, September 9, 2003.

<sup>24</sup> Compare Stephanie Wu “KLA/Orbotech Obtain Conditional Clearance from SAMR,” *Competition Law China*, February 25, 2019. <http://competitionlawchina.com/2019/02/25/kla-orbotech-obtain-conditional-clearance-from-samr/>.

<sup>25</sup> *Supra* note 20.

<sup>26</sup> The State Administration of Market Supervision, Interim Provisions on Prohibiting Abuse of Market Dominance, Article 18.



finding there was an abuse of a collectively dominant position.<sup>27</sup> The issues still unresolved in the *Chlorpheniramine* case include: (1) whether one of the undertaking's conduct would play a positive role in maintaining and enhancing the alleged collective dominant market position; and (2) whether that role would constitute a prerequisite to find the behavior of one of the undertakings to be abusive. Whether the investigation of the three major memory chip suppliers can further develop and improve the concept of collective dominance under the AML needs to be further analyzed based on the final decisions.

### ***C. How Potential New Developments in SEP Antitrust Litigation Will Influence the Semiconductor and Related Industries Needs to be Further Observed***

After the release of the *Huawei v. IDC* judgment and the administrative penalty decision on Qualcomm, antitrust litigation has become an increasingly important means for China's mobile phone companies to counter SEP holders. This might be attributed to the lower burden of proof borne by mobile phone companies, because both the Guangdong Higher People's Court and the enforcement agency have adopted essentially the same logic in defining relevant markets and determining the existence of a dominant position.

However, regarding the licensing of SEPs, there are still opposing opinions on the determination of the Guangdong Higher People's Court and the enforcement agency. In addition, the Supreme People's Court has granted IDC's motion for a retrial.<sup>28</sup> It is still too early to say whether the findings of the Guangdong Higher People's Court will stand.

Meanwhile, SEP holders are gradually beginning to solicit royalties for automobile chips, automobile parts, and automobiles that use certain wireless communication technology. Already, Daimler has made a complaint to the EU, alleging that Nokia's licensing activities violate competition law.<sup>29</sup> Other entities who joined Daimler's action also brought litigation against automobile-related SEP licensors, such as AVANCI, in other countries.<sup>30</sup> China has been vigorously developing its automobile industry in recent years. As such, it is predicted that automobile companies may become another set of key players who will use the AML to defend their rights and interests.

## **IV. SUMMARY**

In summary, antitrust enforcement in China's semiconductor industry relates, for the most part, to merger review. Other enforcement actions mainly target abuses of dominance. Up to now, based on publicly available information, there has not yet been an investigation targeting anti-competitive agreements in this sector. In addition, there are only a limited number of antitrust lawsuits in the semiconductor industry, but SEP licensing practices in this industry are facing much scrutiny, as demonstrated by the amount of SEP-related litigation in recent years. However, since the Supreme People's Court has granted IDC's motion for a retrial, it is possible that SEP antitrust litigation will see new developments in future.

Looking through the merger review decisions that approved concentrations subject to conditions, the agency appears to be more cautious when it comes to reviewing concentrations in this industry, and generally takes a longer time to conduct its review. The main concerns raised generally do not deviate from those normally raised by other concentrations, and the specific characteristics of the semiconductor industry have been considered in some cases. However, as of now, the agency still does not appear to consider that the dynamic market structure and rapid technological developments in semiconductors are sufficient factors to compensate for potential impacts on competition. In addition, the conditions the authority has imposed demonstrate a more and more obvious emphasis on the protection of China's semiconductor suppliers. This clearly reflects the impact of China's overall semiconductor development strategy on merger review.

Looking at the merger and abuse of dominance decisions in the semiconductor industry as a whole, and although the competitive assessment may be different, bundling conduct appears to be the most common concern. Undertakings in this industry should therefore be aware of the potentially high antitrust risk associated with tying in ensuring their businesses comply with the AML.

27 Administrative Penalty Decision of the State Administration of Market Supervision, [2018] No. 21; Administrative Penalty Decision of the State Administration of Market Supervision, [2018] No. 22.

28 Civil Ruling of the Supreme People's Court [Docket No. (2014) Min Shen Zi No. 677].

29 "Nokia Aims to Settle EU Patent Licensing Row With Daimler" *Zacks Equity Research*, December 1, 2019, <https://finance.yahoo.com/news/nokia-aims-settle-eu-patent-130401171.html>.

30 *Continental Automotive Systems, Inc. v. Avanci, LLC et al.*, Case: 5:19-cv-02520.

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