

# ANTITRUST MERCANTILISM: THE STRATEGIC DEVALUATION OF INTELLECTUAL PROPERTY RIGHTS IN WIRELESS MARKETS

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## ABSTRACT

Policy approaches to the enforcement and licensing of standard-essential patents (SEPs) in wireless communications markets reflect the competing interests of entities that specialize in the innovation or implementation segments of the technology supply chain. This same principle can anticipate the policy preferences of national jurisdictions that specialize in the chip-design or device-production segments of the global technology supply chain. Consistent with this principle, the legal treatment of SEP licensing and enforcement by regulators and courts in the People's Republic of China reflects a strategic effort to deploy competition and patent law to reduce input costs for domestic device producers that rely on wireless communications technology held by foreign chip suppliers. This mercantilist use of antitrust law has derived its intellectual foundation from patent holdup and royalty stacking models of market failure developed principally by U.S. scholars and has borrowed excessive pricing, essential facility, and other doctrines from E.U. competition and U.S. antitrust law, which have then been applied expansively by Chinese regulators and courts in service of geopolitical objectives. While this strategy promotes the short-term interests of a national economy that specializes in the implementation segments of the technology supply chain, it is unlikely to promote the global economy's longer-term interest in preserving the funding and transactional structures that have supported innovation and commercialization in the wireless technology ecosystem.

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## TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION</b> .....	260
<b>II.</b>	<b>THE GEOPOLITICAL ECONOMY OF THE WIRELESS TECHNOLOGY INDUSTRY</b> .....	267
A.	DIVISION OF LABOR IN THE WIRELESS COMMUNICATIONS ECOSYSTEM.....	267
B.	CHINA’S WIRELESS TECHNOLOGY DEFICIT .....	271
<b>III.</b>	<b>WESTERN MODELS OF MARKET FAILURE AND REGULATORY INTERVENTION</b> .....	273
<b>IV.</b>	<b>HOW CHINA DEVALUES INTELLECTUAL PROPERTY RIGHTS IN WIRELESS MARKETS</b> .....	277
A.	REGULATORY GUIDELINES.....	278
1.	<i>Excessive Pricing</i> .....	281
2.	<i>Essential Facility Doctrine</i> .....	282
3.	<i>FRAND Principle</i> .....	285
B.	REGULATORY INVESTIGATION AND ENFORCEMENT .....	289
C.	JUDICIAL ACTIONS .....	293
1.	<i>Injunctive Relief</i> .....	293
2.	<i>Reasonable Royalty and FRAND Rate Determinations</i> .....	295
3.	<i>Extra-Territorial Jurisdiction and Anti-Suit Injunctions</i> .....	299
<b>V.</b>	<b>MERCANTILIST ANTITRUST AND THE GLOBAL INNOVATION ECOSYSTEM</b> .....	307
<b>VI.</b>	<b>CONCLUSION</b> .....	311

### I. INTRODUCTION

Scholarly analysis of intellectual property (IP) policy generally assumes (whether explicitly or implicitly) a benevolent social planner who seeks to maximize social wealth through an optimally designed portfolio of policy instruments to incentivize innovation. Yet, as the public choice literature would anticipate, any real-world entity’s IP policy views and related advocacy and litigation efforts generally reflect its position in the technology supply chain and, in particular, whether it is a net producer or user of intellectual assets. This simple principle explains why hardware manufacturers and other implementers of wireless technologies have generally pursued legal changes

that weaken the ability to enforce and license patents.<sup>1</sup> For these entities, which are located at midstream and downstream points in the wireless technology supply chain, weakening patents supports a strategy of “use, then litigate”: that is, make use of patented technologies and then negotiate the terms of use in a legal environment in which the patent owner has little credible threat to deny access through an injunction. Conversely, entities that specialize in the design and supply of chip designs and chipsets in wireless technology have generally pursued legal changes that provide a secure infrastructure for licensing and enforcing patents.<sup>2</sup> For these entities, which are located at upstream points in the wireless technology supply chain, strengthening patents enables the negotiation of licensing terms in a legal environment in which infringers cannot freely make use of technologies developed by others. Net producers of wireless-technology innovations have mostly prevailed over net users concerning patent and antitrust policy, resulting in a quasi-compulsory licensing regime in which injunctions are rarely awarded and royalty rates are regularly determined by courts through litigation, rather than being negotiated by businesses in the marketplace.<sup>3</sup>

The relationship between an entity’s IP policy preferences and the specialized competencies it contributes to the technology supply chain applies not only to companies that pursue market leadership but to national jurisdictions that pursue geopolitical leadership. In this contribution, I show that this relationship accounts for actions taken by policymakers in the People’s Republic of China (China)<sup>4</sup> concerning patent licensing and enforcement in wireless-enabled markets, including mobile communications, automotive, and other markets. The highest levels of the Chinese government have prioritized the goal of achieving technological independence and leadership in the global marketplace and especially in the computing and communications sectors.<sup>5</sup> Consistent with this objective, Chinese courts,

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1. See generally Jonathan M. Barnett, *Antitrust Overreach: Undoing Cooperative Standardization in the Digital Economy*, 25 MICH. TECH. L. REV. 163, 226-230 (2019).

2. *Id.*

3. For a detailed history and analysis of these developments, see Barnett, *Antitrust Overreach*, *supra* note 1, at 207-226; Jonathan M. Barnett, *Has the Academy Led Patent Law Astray?*, 32 BERKELEY TECH. L. J. 1313, 1338-56 (2017).

4. All references to “China” or “Chinese” (unless used in a geographic sense) refer to the government of the People’s Republic of China, including the exercise of power by the Chinese Communist Party through governmental, private, or other entities. This usage follows Shaomin Li & Ilan Alon, *China’s Intellectual Property Rights Provocation: A Political Economy View*, 3 J. INT’L BUS. POL’Y 60, 61 (2020).

5. At a “study session” of the Chinese Communist Party Politburo in early 2023, President Xi Jinping emphasized the importance of achieving “S&T [*science and technology*] self-

competition regulators, and other policymakers have taken actions over approximately the past two decades to minimize local device producers' reliance on technology inputs supplied by foreign firms or, when that is not technologically feasible (the typical case in wireless communications), to minimize local producers' royalty obligations to foreign technology suppliers. The economic values at stake in the wireless communications industry are massive. In 2021, 1.43 billion units were shipped in the global smartphone market,<sup>6</sup> 67% of those units were produced in China,<sup>7</sup> and global smartphone sales were valued at \$508.1 billion.<sup>8</sup> Even these values understate substantially the size of the global market for wireless-enabled technologies, which encompasses not only wireless communications but a myriad of other industries within the emergent "Internet of Things."

It is expected that any national government would take steps to promote its economic interests through industrial and trade policies. However, China presents an unusual case in which it has deployed—sometimes explicitly, sometimes implicitly—the instruments of patent and competition law for this purpose.<sup>9</sup> This strategy relies on the weak rule-of-law constraints that

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reliance and self-improvement . . . to create a global S&T power." *Xi Jinping Emphasizes the Effective Strengthening of Basic Research and the Consolidation of the Foundation of Self-Reliance and Self-Improvement in S&T During the Third Collective Study Session of the Politburo of the CCP Central Committee*, INTERPRET: CHINA (Feb. 21, 2023), <https://interpret.csis.org/translations/xi-jinping-emphasizes-effective-strengthening-of-basic-research-and-consolidation-of-the-foundation-of-self-reliance-and-self-improvement-in-st-during-the-third-collective-study-session-of-the-po/> (English translation).

6. STATISTA, NUMBER OF SMARTPHONES SOLD TO END USERS WORLDWIDE FROM 2007 TO 2021 (2022), <https://www.statista.com/statistics/263437/global-smartphone-sales-to-end-users-since-2007/>.

7. Minsoo Kang, *China Accounted for 67% of Global Handset Production in 2021*, COUNTERPOINT (Sept. 13, 2022), <https://www.counterpointresearch.com/insights/global-handset-production-2021/>.

8. *Global Smartphones Market to Generate Revenue of \$789.5 Billion by 2028*, GLOBALNEWswire (Oct. 31, 2022), [https://www.globenewswire.com/news-release/2022/10/31/2544832/0/en/Global-Smartphones-Market-to-Generate-Revenue-of-789-5-Billion-by-2028-Apple-and-Samsung-Tops-the-Chart-with-Over-44-Market-Share.html#:~:text=Global%20smartphones%20market%20was%20valued,period%20\(2022%2D2028\)](https://www.globenewswire.com/news-release/2022/10/31/2544832/0/en/Global-Smartphones-Market-to-Generate-Revenue-of-789-5-Billion-by-2028-Apple-and-Samsung-Tops-the-Chart-with-Over-44-Market-Share.html#:~:text=Global%20smartphones%20market%20was%20valued,period%20(2022%2D2028).).

9. The integration of industrial trade policy is typical of Chinese regulators' approach to competition law generally, see Robert D. Atkinson, Nigel Cory & Stephen J. Ezell, *Stopping China's Mercantilism: A Doctrine of Constructive, Alliance-Backed Confrontation*, INFO. TECH. & INNOVATION FOUND. (2017), <https://www2.itif.org/2017-stopping-china-mercantilism.pdf>; U.S. CHAMBER OF COM., INTERNATIONAL AFFAIRS, *COMPETING INTERESTS IN CHINA'S COMPETITION LAW ENFORCEMENT: CHINA'S ANTI-MONOPOLY LAW APPLICATION AND THE ROLE OF INDUSTRIAL POLICY* (2014), [https://www.uschamber.com/assets/archived/images/ami\\_final\\_090814\\_final\\_locked.pdf](https://www.uschamber.com/assets/archived/images/ami_final_090814_final_locked.pdf).

characterize China's political system. As Shaomin Li and Ilan Alon describe this structure, "[t]he party-state [in China] follows rule *through* law (rule *by* law) as opposed to the rule *of* law, namely, the party uses the law subjectively and selectively for the purpose of maintaining its rule."<sup>10</sup> In a legal framework characterized both by weak rule-of-law constraints and no meaningful division of powers across the branches of government,<sup>11</sup> Chinese policymakers have deployed both patent and competition law for mercantilist purposes that advantage the economic interests of domestic device producers over foreign technology suppliers in the mobile communications device market. China's use of competition law for this purpose is consistent with a broader portfolio of policy tools—particularly, preferential credit and procurement policies,<sup>12</sup> compelled technology transfer to domestic joint venture partners,<sup>13</sup> requirements that foreign licensors provide domestic licensees with indemnification against third-party infringement claims and exclusive rights over improvements,<sup>14</sup> the use of administrative, licensing, and testing requirements to extract technological information,<sup>15</sup> cyber espionage and related forms of IP theft,<sup>16</sup> alleged obstacles to the enforcement by foreign

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10. Li & Alon, *supra* note 4, at 64. On the concept of “rule by law” or “party rule by law” in the Chinese legal system, see Jordan Link, Nina Palmer & Laura Edwards, *Beijing's Strategy for Asserting Its "Party Rule by Law" Abroad*, U. S. INST. OF PEACE, SPECIAL REP., No. 512 (2022), at 4, <https://www.usip.org/publications/2022/09/beijings-strategy-asserting-its-party-rule-law-abroad>.

11. Link et al., *supra* note 10, at 4–5 (noting that concept of “rule of law” in the Chinese legal system implies use of the legal apparatus to implement the political objectives of the Chinese Communist Party, as distinguished from internationally recognized understandings of the “rule of law” as an overarching principle to which all persons and institutions are subject); Ji Weidong, *The Judicial Reform in China: The Status Quo and Future Directions*, 20 IND. J. GLO. LEGAL STUD. 185, 186 (2013) (stating that “the principle of judicial independence is not established” in China); Li & Alon, *supra* note 4, at 64 (“To maintain one-party rule, the party cannot allow judiciary independence and various interest groups to be represented, such as the interest for better IPR protection”); Susan Finder, *Using Cases to Explain the Law in the New Era*, SUPREME PEOPLE'S CT. MONITOR (2013), <https://supremepeoplescourtmonitor.com/tag/model-cases/> (noting that, in a document issued by the Chinese Communist Party Congress on the importance of “publicizing knowledge about law,” the Supreme People's Court is “treated as any other state or Party organ”).

12. REPORT TO CONGRESS OF THE U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION 83–87 (2012) [hereinafter REPORT TO CONGRESS 2012].

13. *Id.* at 8.

14. *Id.* at 48.

15. Li & Alon, *supra* note 4, at 65.

16. *Id.* at 62 (specifically in the aerospace industry); *id.* at 63 (stating that “the [Chinese] party-state not only sponsors IPR theft and forced IPR transfer but also conducts them”); *id.* at 65 (providing data on U.S. federal prosecutions of IP theft by China-based entities, “most

owners of patents covering key technologies in strategically important industries,<sup>17</sup> and efforts to influence international standard-setting bodies<sup>18</sup>—that it has deployed to bolster the competitive position of its communications equipment and device manufacturers in the global marketplace.<sup>19</sup> Given the size of the Chinese market, both as the largest single producer and consumer of mobile communications devices, this use of patent and competition law for industrial trade purposes can impact the pricing of wireless technology inputs not only in the Chinese market but throughout the global supply chain.

These policy objectives run counter to the widely agreed-upon purpose of antitrust and competition law,<sup>20</sup> which is to enable the market to determine asset prices on a level playing field free of efforts by single firms, groups of firms, or state entities to distort the market pricing mechanism. Yet policy actions by Chinese courts and regulators, implemented through the apparatus of patent and competition law, are designed specifically to deflate the price of technology inputs in wireless markets, whether directly by determining royalty rates or indirectly by impeding patent owners' ability to legally block unauthorized usage. This contradicts the fundamental principles of international trade to which World Trade Organization (WTO) members are committed, as reflected by China's joint statement with the United States in 2014 to use competition law "to promote consumer welfare and economic efficiency, rather than promote particular competitors or industries."<sup>21</sup> Most

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of which were directed or sponsored by, or related to the Chinese government"). For further sources, see *infra* note 70.

17. Stu Woo & Daniel Michaels, *China's Newest Weapon to Nab Western Technology—Its Courts*, WALL ST. J. (Feb. 20, 2023) (reporting European Union survey in which "people expressed concerns about 'a tendency of [Chinese] court rulings to favor Chinese stakeholders when strategic sectors or companies, in particular state-owned enterprises, are concerned'", and providing examples of multiple cases in which protectionism was alleged to have motivated court decisions against foreign patent owners).

18. Alexandra Bruer & Doug Brake, *Mapping the 5G Leadership Landscape: The Impact of Global Telecommunications Standard Setting on U.S. Strategy and Policy*, INFO. TECH. & INNOVATION FOUND. (2021), at 19–20; Mark Leonard, *The New China Shock*, WIRE CHINA (Apr. 11, 2021), <https://www.thewirechina.com/2021/04/11/the-new-china-shock>.

19. Jeanne Suchodolski, Suzanne Harrison & Bowman Heiden, *Innovation Warfare*, 22 N.C. J. L. & TECH. 175, 195–203 (2020).

20. "Antitrust" and "competition law" are used interchangeably in this article.

21. U.S. CHAMBER OF COM., *supra* note 9, at 6–7 (citing U.S. Dept of the Treasury, Updated: U.S.-China Joint Fact Sheet Sixth Meeting of the Strategic and Economic Dialogue, July 11, 2014), <https://home.treasury.gov/news/press-releases/jl2563>. On China's failure in general to meet its WTO commitments, see U.S. TRADE REPRESENTATIVE, 2020 REPORT TO CONGRESS ON CHINA'S WTO COMPLIANCE 2 (2020), <https://ustr.gov/sites/default/files/files/reports/2020/2020USTRReportCongressChinaWTOCompliance.pdf> (stating that "China's record of compliance with the terms of its WTO

recently, efforts by Chinese courts to act as exclusive global rate-setters in litigations involving standard-essential patents (SEPs) relating to wireless technologies—which are enforced by the issuance of anti-suit injunctions to impede judicial proceedings in other countries—are incompatible with China’s treaty obligations under the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement,<sup>22</sup> as is currently alleged by the European Union (EU) before the WTO.<sup>23</sup>

Setting aside treaty commitments, China’s patent and antitrust policies make perfect sense for a national jurisdiction that is generally located at the midstream and downstream levels of the global technology supply chain. As observed by several Chinese scholars in 2020: “China’s massive industrial system is still at the mid-to-low end of the global value chain, and it has a serious lack of key core technologies . . . .”<sup>24</sup> IP payment flows are consistent with this assessment. During 2008–2017, China paid out \$185.2 billion to foreign IP owners, while China-based IP owners received only \$12.2 billion from foreign users, representing a net deficit of \$114.4 billion.<sup>25</sup> As of 2020, China had an IP payments deficit of \$30.38 billion; by contrast, the United States had an IP payments surplus of \$70.8 billion.<sup>26</sup> Moreover, this IP payments deficit understates by a large measure China’s technology deficit due to widespread unlicensed use in China of IP assets held by foreign entities.<sup>27</sup> This IP and technology deficit extends to wireless communications, in which

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membership has been poor” and noting that “China has continued to embrace a . . . mercantilist approach to the economy and trade.”).

22. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994). For further discussion, see *infra* notes 214–215 and accompanying discussion.

23. See *infra* notes 215–218 and accompanying text.

24. Cui Leilei, Du Xiangwan, Ge Qin, Li Bin & Liu Xiaolong, *Macro Research on the Development of Chinese Strategic Emerging Industries in the New Era*, INTERPRET: CHINA (Mar. 27, 2020), <https://interpret.csis.org/translations/macro-research-on-the-development-of-chinese-strategic-emerging-industries-in-the-new-era/> (English translation).

25. *Is China Leading in Global Innovation?* CHINA POWER, <https://chinapower.csis.org/china-innovation-global-leader/> (last accessed (updated Sept. 11, 2023) [hereinafter CHINA POWER, *Is China Leading*].

26. Author’s calculations are based on World Bank, Charges for the use of intellectual property, receipts (BoP, current US\$) and World Bank, Charges for the use of intellectual property, payments (BoP, current US\$), <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD>.

27. STATEMENT OF MARK A. COHEN BEFORE THE U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION, HEARING ON THE FOREIGN INVESTMENT CLIMATE IN CHINA: PRESENT CHALLENGES AND POTENTIAL FOR REFORM 3–4 (Jan. 28, 2015), [https://www.uscc.gov/sites/default/files/Mark%20Cohen\\_testimony.pdf](https://www.uscc.gov/sites/default/files/Mark%20Cohen_testimony.pdf).

China's device, equipment, and semiconductor producers have been unable to achieve technological parity with the handful of United States- and Europe-based firms that continue to lead innovation in the industry.

To address this technological and economic gap, Chinese policymakers have deployed patent and competition law to promote the interests of domestic device producers in minimizing the costs to secure technology assets that have been developed and are owned by foreign entities. In pursuit of this objective, Chinese regulators and courts have deployed an intellectual "transplant" strategy in which theories of "patent holdup" and "royalty stacking" developed by U.S. academics have been embraced and adapted in the Chinese context for purposes of industrial trade policy. Since approximately the mid-2000s, these conjectural models of market failure have provided the basis for U.S. and E.U. competition regulators' efforts to constrain the licensing and enforcement of SEPs by lead innovators in the wireless industry. Following this precedent, Chinese courts and regulators have implemented IP and IP-related competition policies that impose an across-the-board discount on the price of technology inputs in wireless-enabled markets. At the same time, Chinese courts and regulators have adopted and expanded certain doctrines from U.S. and E.U. competition law that impose a "duty to deal" on holders of "essential facilities" and departed from U.S. and (to a lesser extent) E.U. competition law by converting the "fair, reasonable and nondiscriminatory" (FRAND) licensing principle from a voluntary commitment made through contract to a mandatory requirement under competition law. Once adapted by Chinese regulators and courts, these legal principles have been placed in the service of mercantilist purposes, pursuing outcomes that diverge from the commonly understood objectives of patent and competition law.

Organization of this Article is as follows. In Part II, I review the wireless industry's division of labor among specialized providers of chip design, chip production, and device production capacities and, in light of that division of labor, the Chinese government's use of various policy tools to enhance the competitive position of Chinese firms in the global wireless ecosystem. In Part III, I describe the patent holdup and royalty stacking theories developed by scholars and adopted by regulators in the U.S. and Europe, and the empirical challenges to those theories. In Part IV, I describe how Chinese courts and regulators have deployed and adapted concepts and doctrines developed by U.S. and European scholars, regulators, and courts to impact the "rules of the game" in a manner that favors implementers over innovators in the wireless industry. In Part V, I assess the likely effects of China's mercantilist use of



patent and competition law on the global wireless technology ecosystem. A brief Conclusion then follows.

## II. THE GEOPOLITICAL ECONOMY OF THE WIRELESS TECHNOLOGY INDUSTRY

To understand the motivations behind China's strategic use of legal tools to secure national-competitive advantages in the global wireless market, it is necessary to appreciate the position occupied by the Chinese economy and China-based firms in that market. In this Part, I discuss in particular the extent to which China leads in the device production segments of the global wireless technology ecosystem but lags in the chip-design and production segments. I then discuss policy initiatives that the Chinese government has undertaken to address China's IP and technology deficit in wireless communications by achieving technological independence and, primarily, by reducing the costs incurred by domestic device producers to source technology inputs from foreign suppliers.

### A. DIVISION OF LABOR IN THE WIRELESS COMMUNICATIONS ECOSYSTEM

The global wireless communications supply chain exhibits a geographically skewed division of labor between China and the rest of the world. Innovation specialists, which focus on the design, production, and supply of the advanced semiconductors that are necessary to support the data-processing and transmission functionalities of mobile communications devices, are principally located in the United States and Europe. Implementation specialists, which focus on the production, distribution, and marketing of those devices, are principally based in China. Additionally, it should be noted that leading chip suppliers are vertically disintegrated entities that rely on stand-alone producers (principally located in Taiwan and Korea) to embody proprietary chip designs in physical chipsets for supply to device producers. Lastly, both innovation and implementation specialists rely on and, to varying extents, contribute to the standards-development services provided by organizations (most notably, ETSI and IEEE) that support the ubiquitous interoperability that characterizes the mobile communications device market.

**Table 1. Division of Labor in the Global Mobile Communications Market (simplified, as of 2022)**

Supply-chain function	Leading firms and headquarters locations	Principal headquarters locations	Principal location of physical production

UPSTREAM SEGMENTS			
Standard-setting	IEEE (US), ETSI (EU)	US, EU	N/a
Innovation (chip design)	CN: Huawei EU: ARM, Ericsson, Nokia KO: Samsung, LG US: Qualcomm	US, EU	TW
Chip production	TSMC (TW), Samsung (KO)	TW, KO	TW, KO
DOWNSTREAM SEGMENTS			
Implementation (device production and distribution)	CN: Huawei (prior to 2021), <sup>28</sup> Xiaomi, Oppo, Vivo KO: Samsung US: Apple	CN, US, KO	CN, VT
Device production (stand-alone <sup>29</sup> )	Hon Hai (Foxconn) (TW)	TW	CN

*Legend:* CN = China; EU = Europe (incl. U.K.); KO = South Korea; TW = Taiwan; US = United States; VT = Vietnam.

*Notes:* Leading entities in “Innovation (chip design)” selected based on shares of active and granted 5G self-declared patents as of Feb. 2022. Leading entities in “Implementation (device production and distribution)” selected based on shares of total smartphone shipments as of Q3 2022. ARM is based in the U.K. but owned by SoftBank Group, a Japan-based entity.

*Sources:* Parv Sharma, *TSMC Captures 70% Share of the Smartphone AP/SoC and Baseband Shipments in Q1 2022*, July 5, 2022 (smartphone chip production); Counterpoint, *Global Smartphone Shipments Market Data* (Q4 2020-Q3 2022) (smartphone handset sales); U.S. Patent &

28. Huawei’s participation in the global handset market has declined substantially since imposition of U.S. sanctions in 2021. *See* Arjun Kharpal, *From No. 1 to No. 6, Huawei Smartphone Shipments Plunge 41% as U.S. Sanctions Bite*, CNBC (Jan. 28, 2021), <https://www.cnbc.com/2021/01/28/huawei-q4-smartphone-shipments-plunge-41percent-as-us-sanctions-bite.html>.

29. “Stand-alone” refers to entities that perform a specialized service on a contractual basis for another entity.

Trademark Office, *Patenting activity by companies developing 5G* (Feb. 2022) (5G SEPs). Other information sourced from companies' annual investor reports.

China leads in the downstream segments of the wireless technology supply chain, both directly in the device production segment and indirectly as the principal location of facilities that produce devices for foreign firms. However, with the exception of Huawei (a qualified exception for reasons discussed below), China lacks any leading firms in the upstream chip-design segments of the supply chain that provide the technological inputs on which device producers rely. This observation may be surprising given widely-covered statistics that China's patent office grants the most applications worldwide, representing 43.4% of all patents granted in 2019 (as compared to only 17% in 2009), and that China-resident inventors lead the world in the total number of patent applications (domestic and international).<sup>30</sup> However, these aggregate statistics (typically based on data reported by the World Intellectual Property Organization) obscure the fact that most patents granted by China's patent office (and an even larger portion of the patents granted by that office to China-resident inventors<sup>31</sup>) are "utility model" patents granted for a limited term without substantive examination and are therefore not equivalent to the "utility" patents granted by the U.S. Patent & Trademark Office (USPTO) and other leading patent offices.<sup>32</sup>

More generally, there are widely expressed concerns that China excels in patent quantity but lags in patent quality, in which case patenting outputs do not provide a reliable metric of innovation outputs. Several standard proxies for patent quality favor this hypothesis. First, an unusually high percentage of China-resident inventors granted patents at China's patent office do not make a patent filing abroad (as of 2016, only 4%, as compared to 43% of US-resident and Japan-resident patent grantees<sup>33</sup>). Second, China-resident inventors lag substantially among filers of triadic patents—that is, patents granted in the patent offices of Japan, the European Union, and the United States. As of

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30. WIPO, *WORLD INTELLECTUAL PROPERTY INDICATORS 2019*, at 7–8, [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_941\\_2019.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_941_2019.pdf)

31. *Are Patents Indicative of Chinese Innovation*, CHINA POWER, <https://chinapower.csis.org/patents/> (last accessed Sept. 11, 2023) [hereinafter CHINA POWER, *Are Patents Indicative of Chinese Innovation*].

32. For extensive analysis, see Jonathan Putnam, Hieu Luu, & Ngoc Ngo, *Innovative Output in China* (Working Paper Jan. 21, 2021), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3760816](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3760816). As of 2019, the Chinese patent office granted 96.9% of all "utility model" patents granted in the entire world, see WIPO, *supra* note 30, at 7.

33. WIPO, *supra* note 30, at 79–80.

2020, China-resident inventors received 5.9% of all triadic patents, while Japan, U.S., and E.U.-resident inventors received 30.4%, 22.6%, and 11.2%, respectively.<sup>34</sup> Third, two other leading measures of patent quality, forward citations and payment of maintenance fees, suggest that patents issued to China-resident inventors do not compare favorably with patents issued to inventors in other high-patenting countries. As of 2017, it was reported that 61% of Chinese “utility model” patents and 37% of Chinese invention patents (equivalent to USPTO utility patents) were not renewed after three years following issuance, as compared to 15% of U.S. utility patents issued during the same period.<sup>35</sup>

Data on the telecommunications industries identifies a similar mismatch between patent quantity and quality by China-based entities. Concerning only patents relating to telecommunications, a sector targeted heavily by Chinese R&D expenditures<sup>36</sup> and government subsidies, grants and other assistance to national champions like Huawei and ZTE,<sup>37</sup> the rate at which China-resident inventors make a foreign patent filing in addition to a domestic patent filing is less than half the rate for US-resident inventors in the same sector.<sup>38</sup> Huawei, China’s most significant firm in the wireless technology industry and single largest patent filer, excels in patent quantity but lags on quality compared to global competitors. Based on several sources, Huawei leads worldwide in terms of the number of patents self-declared as (potentially) essential to the 5G wireless communications standard.<sup>39</sup> However, multiple analyses of the quality of Huawei’s patent portfolio, including a study released in 2022 by the USPTO,

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34. Author’s calculations, based on OECD, Triadic patent families, <https://data.oecd.org/rd/triadic-patent-families.htm>.

35. CHINA POWER, *Are Patents Indicative of Chinese Innovation?*, *supra* note 31 (citing Lulu Yilun Chen, *China Claims More Patents Than Any Country—Most Are Worthless*, BLOOMBERG (Sept. 27, 2018), <https://www.bloomberg.com/news/articles/2018-09-26/china-claims-more-patents-than-any-country-most-are-worthless>).

36. *Is China a Global Leader in Research and Development*, CHINA POWER, <https://chinapower.csis.org/china-research-and-development-rnd/> (last accessed Sept. 11, 2023).

37. REPORT TO CONGRESS 2012, *supra* note 12, at 83–87.

38. Putnam et al., *supra* note 32, at 15.

39. U.S. PATENT & TRADEMARK OFFICE, PATENTING ACTIVITY BY COMPANIES DEVELOPING 5G (Feb. 2022), at 5. For additional source showing that Huawei leads in number of declared 5G patents, see *Who Owns Core 5G Patents? Essentiality Check on 5G Declared Patents*, GREYB, <https://www.greyb.com/blog/5g-patents/#The-State-of-Declared-5G-Patents> (last accessed Sept. 11, 2023).

found that it trails the patent portfolios of other market leaders on various parameters (assessed as of 2018, 2019, and 2021).<sup>40</sup>

Given the persistent underperformance of patents issued in China and patents issued by China's patent office to China-resident inventors relative to other major patent offices and inventors resident in other high-patenting countries, it is not surprising that the Center for Strategic and International Studies has concluded that, based on patent filing data, "it is clear that China has not yet matched the innovation level of other leading economies."<sup>41</sup> Given the appearance of similar discrepancies between patent quantity and quality in wireless communications, there seems little doubt that Chinese device makers typically still occupy the position of a net-IP-user when engaging in licensing discussions with foreign owners of patent-protected technology inputs in the wireless technology supply chain.

## B. CHINA'S WIRELESS TECHNOLOGY DEFICIT

It is widely observed that the Chinese government has sought to secure parity and leadership as compared to Western countries in critical computing and communications technologies.<sup>42</sup> Consistent with these objectives (set forth in China's "National, Medium, and Long-Term Plan for Science and Technology Development (2006-2020)" and more recently, the "13<sup>th</sup> Five Year Plan for Science and Technology"<sup>43</sup>), China has targeted its extensive R&D expenditures (second in the world in total size) to computers and communications-related technologies.<sup>44</sup> In the National Integrated Circuit plan, released in 2014 as part of the "Made in China 2035" initiative, the Chinese government stated that it seeks to satisfy 70 percent of the country's semiconductor demand locally and to reach technological parity with international leaders by 2030.<sup>45</sup> As part of this program, the Chinese

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40. U.S. PATENT & TRADEMARK OFFICE, *supra* note 39 (finding that, as of May 2021, Huawei's patents declared essential to 5G wireless standards generally underperform on various quality measures as compared to six other leading patent owners in this field); Takahiro Shibuya & Takashi Kawakami, *Patent King Huawei Lags Intel and Qualcomm in Quality, Study Finds*, NIKKEIASIA (Oct. 27, 2019), <https://www.asia.nikkei.com/Spotlight/Datawatch/Patent-king-Huawei-lags-Intel-and-Qualcomm-in-quality-study-finds> (finding that, as of 2019, the quality of Huawei's patent portfolio falls behind Intel and Qualcomm).

41. CHINA POWER, *Is China Leading*, *supra* note 25.

42. NATIONAL SECURITY COMMISSION ON ARTIFICIAL INTELLIGENCE, DRAFT FINAL REPORT, at 3 (JAN. 2021), <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf>.

43. Atkinson, Cory & Ezell, *supra* note 9, at 4.

44. CHINA POWER, *supra* note 36.

45. DAN KIM & JOHN VERWEY, *THE POTENTIAL IMPACTS OF THE MADE IN CHINA 2025 ROADMAP ON THE INTEGRATED CIRCUIT INDUSTRIES IN THE U.S., E.U. AND JAPAN* 5,

government has emphasized the importance of acquiring capacities to innovate new technologies and set industry technology standards.<sup>46</sup> Concurrently, Chinese government and industry have generally sought to establish a norm of zero or low royalty rates for the use of IP rights embedded in technology standards<sup>47</sup>—an undertaking that this Article will describe in detail in the context of the global wireless communications industry.

To rectify its technology deficit, the Chinese government initially sought to promote the development and adoption of indigenous technology standards for computing and communications markets, including wireless communications,<sup>48</sup> DVD players, audio/video “codec” standards, local area networking, optical media storage, and cloud computing.<sup>49</sup> In wireless communications, China sought to replace the globally dominant W-CDMA standard with an indigenous TD-CDMA standard, and to replace the globally dominant WiFi standard with an indigenous WAPI standard. As has generally been the case for China’s indigenous technology efforts,<sup>50</sup> neither initiative was successful, in part due to a failure to replicate the technical features of the

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OFF. OF INDUST. OF THE U.S. INT’L TRADE COMM’N (2019), [https://www.usitc.gov/publications/332/working\\_papers/id\\_19\\_061\\_china\\_integrated\\_circuits\\_technology\\_roadmap\\_final\\_080519\\_kim\\_verwey-508\\_compliant.pdf](https://www.usitc.gov/publications/332/working_papers/id_19_061_china_integrated_circuits_technology_roadmap_final_080519_kim_verwey-508_compliant.pdf). For related discussion, see Atkinson et al., *supra* note 9, at 9–11.

46. DAN BREZNITZ & MICHAEL MURPHEE, *THE RISE OF CHINA IN TECHNOLOGY STANDARDS: NEW NORMS IN OLD INSTITUTIONS*, RESEARCH REPORT PREPARED ON BEHALF OF THE U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION 3-4 (2013), <https://www.uscc.gov/sites/default/files/Research/RiseofChinaInTechnologyStandards.pdf>.

47. *Id.* at 6, 18, 28–33.

48. Tomoo Marukawa, *Diminishing Returns to High-Tech Standards Wars: China’s Strategies in Mobile Communications Technology*, NAT’L BUREAU OF ASIAN RSCH. (Working Paper Aug. 2014), [https://www.nbr.org/wp-content/uploads/pdfs/programs/ict\\_marukawa\\_paper.pdf](https://www.nbr.org/wp-content/uploads/pdfs/programs/ict_marukawa_paper.pdf).

49. Barnett, *supra* note 1, at 234–35; D. Daniel Sokol & Wenton Zheng, *FRAND in China*, 22 TEX. INTELL. PROP. L. J. 71, 80-81 (2013); Stephen J. Ezell & Robert D. Atkinson, *The Middle Kingdom Galapagos Island Syndrome: The Cul-De-Sac of Chinese Technology Standards*, INFO. TECH. & INNOVATION FOUND. 13–22 (2014), <https://itif.org/publications/2014/12/15/middle-kingdom-galapagos-island-syndrome-cul-de-sac-chinese-technology/>; U.S. INT’L TRADE COMM’N, *CHINA: INTELLECTUAL PROPERTY INFRINGEMENT, INDIGENOUS INNOVATION POLICES, AND FRAMEWORKS FOR MEASURING THE EFFECTS ON THE U.S. ECONOMY* (USITC Publication 4199, Investigation No. 332-514, Nov. 2011), at 2-21 to 2-22.

50. Breznitz & Murphee, *supra* note 46, at 2 (observing that Chinese standards “have also generally been market failures. None have gained significant market support outside of China and most have limited success even within China”).

globally dominant standard, which in turn elicited resistance from local device makers and telecom carriers.<sup>51</sup>

Today China still operates under a significant IP and technology deficit in the design and production of the advanced semiconductors used in wireless communications devices. A 2019 U.S. government report observed that “the Chinese semiconductor ecosystem continues to lag several generations behind that of international competitors across nearly all semiconductor sub-markets and industries.”<sup>52</sup> A 2020 publication by Chinese researchers observed that, in the Chinese economy, “key products such as . . . high-end chips have long been dependent on imports, and China does not yet have independent production capabilities for them.”<sup>53</sup> Among several policy instruments, government leadership has sought to address this persistent source of geopolitical and economic disadvantage through the application of IP and competition law to the enforcement and licensing of patents essential to technology standards. Specifically, Chinese courts and regulators have consistently taken actions through patent and competition law that have the effect (either directly or indirectly) of lowering the royalty rates for wireless SEPs that domestic device manufacturers pay to foreign suppliers of these critical technology inputs.

### III. WESTERN MODELS OF MARKET FAILURE AND REGULATORY INTERVENTION

The intellectual origins of the interventionist approach taken by Chinese regulators and courts toward SEP licensing can be found in theoretical models of market failure developed by U.S. economists and legal academics, which were adopted by antitrust and competition regulators in the United States, European Union, and other major jurisdictions through policy statements and enforcement actions. In the mid-2000s, a handful of scholarly articles conjectured that, under certain circumstances, a SEP licensing market was prone to failure since SEP owners (each assumed to exercise market power) would “hold up” locked-in users for royalty rates in excess of a patented

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51. On the TD-CDMA standard, see U.S. INTERNATIONAL TRADE COMMISSION, CHINA 2011, *supra* note 49, at 5–24. On the WAPI standard, see Ping Gao, *WAPI: A Chinese Attempt to Establish Wireless Standards and the International Coalition that Resisted*, 23 COMM’NS OF THE ASS’N FOR INFO. SYS. 23: 151 (2008). For related discussion, see Ezell & Atkinson, *supra* note 49, 16–17; Peter K. Yu, Jorge L. Contreras & Yu Yang, *Transplanting Anti-Suit Injunctions*, 71 AMER. UNIV. L. REV. 1537, 1572–73 (2022).

52. Kim & VerWey, *supra* note 45, at 2 n.7.

53. Leilei et al., *supra* note 24.

technology's relative contribution to the relevant device or system.<sup>54</sup> In an alternative scenario, scholars posited that profit-maximizing rate-setting by individual SEP owners would result in a collective royalty burden that would generate prices beyond the reach of most consumers, inhibiting technology adoption and market growth.<sup>55</sup> In both cases, scholars argued that these models were supported by anecdotal reports of “double-digit” licensing rates<sup>56</sup> or simple summations of announced royalty rates (without adjustment for negotiation or cross-licensing).<sup>57</sup>

Based on these theoretical assertions, regulators in the United States, European Union, and other jurisdictions have invested considerable efforts in taking actions and advocating policies to “protect” licensees against purported overreaching by SEP licensors. Regulators sought to preclude SEP owners from seeking injunctive relief against infringers, to compel SEP owners to license at the component (rather than device) level, and to establish damages calculation methodologies that would reduce reasonable royalty damages for adjudicated infringers.<sup>58</sup> In the United States, these objectives were set forth in an influential report released by the Federal Trade Commission (FTC) in 2011<sup>59</sup> and a joint policy statement issued in 2013 by the U.S. Department of Justice (DOJ), the USPTO, and the National Institute for Standards and Policy.<sup>60</sup> Regulators' efforts to reengineer the wireless licensing market

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54. For the classic sources, see Mark A. Lemley, *Ten Things to Do About Patent Holdup of Standards (and One Not to)*, 48 B.C. L. REV. 149, 150-52 (2007); Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1994-2010 (2007); Joseph Farrell, John Hayes, Carl Shapiro & Theresa Sullivan, *Standard Setting, Patents, and Hold-Up*, 74 ANTITRUST L.J. 603, 648 (2007).

55. Lemley & Shapiro, *supra* note 54, at 2010-2017; Lemley, *supra* note 54, at 152-53.

56. Lemley & Shapiro, *supra* note 54, at 2027.

57. Ann Armstrong, Joseph Mueller & Tim Syrett, *The Smartphone Royalty Stack: Surveying Royalty Demands for the Components Within Modern Smartphones*, at 68-69 (May 29, 2014), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2443848](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2443848). On the unreliability of announced royalty rates as a measure of actual royalty rates in SEP licensing markets, see Barnett, *supra* note 3, at 1338-56.

58. For detailed discussion of these regulatory efforts, see Barnett, *supra* note 1, at 211-12; Barnett, *supra* note 3, at 1338-56.

59. FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (2011), <https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf>

60. U.S. DEPT. OF JUSTICE & U.S. PATENT & TRADEMARK OFFICE, POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY F/RAND COMMITMENTS (2013), <https://www.justice.gov/atr/page/file/1118381/download>.



culminated in the antitrust suit brought by the FTC in 2017 against Qualcomm, one of the industry's major SEP licensors and the acknowledged innovation leader behind 3G and 4G/LTE wireless communications technologies. While the agency ultimately lost on appeal,<sup>61</sup> it secured a favorable decision and order at the district court,<sup>62</sup> which had mandated comprehensive changes to the company's licensing practices that would likely have compelled the company to shift toward a vertically integrated business model if the court's order had been implemented.

The view that SEP licensing in wireless devices is inherently prone to market failure was embraced not only by U.S. antitrust agencies but competition regulators in Europe, Korea, Japan, and Taiwan.<sup>63</sup> Like the U.S. agencies, E.U. regulators opposed the pursuit of injunctions by SEP owners due to concerns over patent holdup<sup>64</sup> and advocated imposing an aggregate cap on FRAND royalties to avoid royalty stacking.<sup>65</sup> With the exception of the DOJ Antitrust Division during 2017-2020 (when the Division expressed the view that patent holdup did not present a significant policy concern in SEP wireless markets<sup>66</sup>), regulators around the world appeared to pay little attention to the seemingly obvious mismatch between the market failure predicted by patent holdup theory and the resounding technological and economic success of the real-world wireless communications market. While regulators consistently advocated action to "protect" producers and consumers from the

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61. *FTC v. Qualcomm*, 969 F.3d 974, 1005 (9th Cir. 2020).

62. Findings of Fact and Conclusions of Law at 227–29, *FTC v. Qualcomm, Inc.*, No. 17-CV-00220-LHK (N.D. Cal. May 21, 2019).

63. For discussion, see Douglas H. Ginsburg, Koren W. Wong-Ervin & Joshua D. Wright, *The Troubling Use of Antitrust to Regulate FRAND Licensing*, 10 CPI ANTITRUST CHRON. 2, 2 (2015).

64. See generally EUROPEAN COMM'N, COMMISSION SENDS STATEMENT OF OBJECTIONS TO MOTOROLA MOBILITY ON POTENTIAL MISUSE OF MOBILE PHONE STANDARD-ESSENTIAL PATENTS (2013), [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_13\\_406](https://ec.europa.eu/commission/presscorner/detail/en/IP_13_406).

65. EUROPEAN COMM'N, COMMUNICATION ON SETTING OUT THE EU APPROACH TO STANDARD ESSENTIAL PATENTS 6–7 (2017), <https://ec.europa.eu/docsroom/documents/26583>.

66. See, e.g., U.S. DEPT. OF JUSTICE, ASSISTANT ATTORNEY GENERAL MAKAN DELRAHIM, THE "NEW MADISON" APPROACH TO ANTITRUST AND INTELLECTUAL PROPERTY LAW (Mar. 26, 2018), <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-keynote-address-university> (expressing skepticism concerning significance and prevalence of patent holdup); ASSISTANT ATTORNEY GENERAL MAKAN DELRAHIM DELIVERS REMARKS AT THE USC GOULD SCHOOL OF LAW'S CENTER FOR TRANSNATIONAL LAW AND BUSINESS CONFERENCE (Nov. 10, 2017), <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-usc-gould-school-laws-center> (same).

allegedly exorbitant rates “imposed” by SEP licensors, consumers consistently enjoyed increasing functionality and, adjusted for those quality improvements, decreasing prices.<sup>67</sup> Empirical research subsequently confirmed that estimated aggregate royalty rates paid by device manufacturers to SEP owners were in the single digits, representing a relatively modest portion of the immense value generated by wireless communications technologies.<sup>68</sup> These findings explain why the patent-intensive smartphone market has exhibited broad and rapid rates of adoption across geographic and income segments,<sup>69</sup> contrary to the market failure scenarios that prevail among the academic and regulatory communities.

If the patent holdup and royalty stacking models misdescribed the actual performance of SEP licensing markets in wireless technologies, then this discrepancy implied that interventions pursued and advocated by competition regulators were unnecessary remedies for a merely hypothetical malady. Even worse, regulatory intervention to impose constraints on SEP enforcement and licensing—by curtailing injunctive relief, disrupting well-settled licensing practices, and adopting methodologies that depress reasonable royalty damages—ran the risk of distorting the pricing of SEPs in a manner that redistributes wealth toward licensee-implementers and away from licensor-innovators that drive technological advancement in wireless communications. This runs counter to the fundamental purpose of antitrust law: rather than preserving the market’s ability to allocate resources efficiently through the pricing mechanism grounded in a secure legal foundation of property rights

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67. Alexander Galetovic, Stephen Haber, & Ross Levine, *An Empirical Examination of Patent Holdup*, 11 J. COMPETITION L. & ECON. 549, 572 (2015).

68. Alexander Galetovic, Stephen Haber, & Lew Zaretski, *An Estimate of the Average Cumulative Royalty Yield in the World Mobile Phone Industry: Theory, Measurement and Results*, 42 TELECOMM. POL’Y 263, 266 (2018) (finding average estimated “cumulative royalty yield” for IP licensors of 3.4% of mobile phone sale price); Alexander Galetovic, Stephen Haber, & Lew Zaretski, *Is There an Anticommons Tragedy in the World Smartphone Industry?*, 32 BERKELEY TECH. L. J. 1527, 1532-33 (2017) (finding aggregate royalty rate on a smartphone device equal to approximately 3.4% of average sale price); Keith Mallinson, *Cumulative Mobile-SEP Royalty Payments No More Than Around 5% of Mobile Handset Revenues*, WISEHARBOR (2015) (finding estimated aggregate royalty rate paid to IP licensors by smartphone manufacturers equal to approximately 3.4% of average device sale price), <https://www.wischarbor.com/pdfs/Mallinson%20on%20cumulative%20mobile%20SEP%20royalties%20for%20IP%20Finance%202015Aug19.pdf>; J. Gregory Sidak, *What Aggregate Royalty Do Manufacturers of Mobile Phones Pay to License Standard-Essential Patents?*, 1 CRITERION J. INNOVATION 701, 701-02 (2016) (estimating aggregate royalty rate for IP licensors to smartphone manufacturers and finding upper bound of 4-5%).

69. Jason Dedrick & Kenneth L. Kraemer, *Intangible Assets and Value Capture in Global Value Chains: The Smartphone Industry* 3–4 (World Intellectual Property Organization, Working Paper No. 41, 2017), <https://www.wipo.int/publications/en/details.jsp?id=4230>.

and contract enforcement, regulators took actions that undermined that legal foundation and, as a result, threatened to skew the pricing mechanism in a manner that advantages the users of wireless technologies over the entities that primarily contributed to the development of those technologies. This regulatory misuse of antitrust law has provided the model for Chinese regulators' extensive interventions to impact the pricing of wireless technology assets for mercantilist purposes.

#### IV. HOW CHINA DEVALUES INTELLECTUAL PROPERTY RIGHTS IN WIRELESS MARKETS

It is widely observed that the Chinese state has adopted multiple strategies to accelerate technology transfer from foreign to domestic entities. These strategies encompass mandatory technology transfer through joint ventures and other relationships with domestic entities, tolerated infringement of patented technologies, and, in the case of certain companies, alleged and adjudicated cases of intellectual property espionage and theft.<sup>70</sup> In the wireless communications sector, the Chinese government has sought to close its domestic industry's technology shortfall through patent and competition law, having expressed concern internationally and domestically over the potential for patents to impede the adoption of technology standards.<sup>71</sup> Given this background, it is unsurprising that theoretical models of patent holdup and royalty stacking, and regulatory intervention based on those models, have found a receptive audience among Chinese regulators, courts, and device producers. A Chinese scholar has observed that the development of judicial guidelines by Chinese courts concerning the issuance of injunctions in SEP infringement litigations has been influenced by “academic theories that have become the spotlight of legislations, antitrust agencies and courts in various jurisdictions recently—the conjectures of patent holdup and royalty

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70. REPORT TO CONGRESS 2022, *supra* note 37, at 180–81; REPORT TO CONGRESS 2012, *supra* note 12, at 18, 91; Suchodolski, *supra* note 19, at 198–203. On allegations of theft of trade secrets by Huawei and ZTE from US-based companies such as Motorola and Cisco, see SEI-JIN CHANG, MULTINATIONAL FIRMS IN CHINA: ENTRY STRATEGIES, COMPETITION, AND FIRM PERFORMANCE 164–65 (2013).

71. Committee on Technical Barriers to Trade, Intellectual Property Rights Issues in Standardization: Background paper for Chinese Submission to WTO, WTO Doc. G/TBT/W/251-Add.1 (Nov. 9, 2006), <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/G/TBT/W251A1.pdf&Open=True>.

stacking.”<sup>72</sup> Similarly, a Chinese practitioner has commented that “[o]ne of the biggest concerns among Chinese regulators and judges is royalty stacking.”<sup>73</sup> Similar sentiments are expressed by Chinese device producers, as illustrated by a statement attributed to an executive at Xiaomi, who explicitly urged regulators to interpret the FRAND commitment for protectionist purposes: “The heart of FRAND-related issues from the licensees’ perspective is really fair competition (remember ‘cost’ is one part of fair competition). No government will see their domestic companies being unfairly forced into less competitive positions without doing anything about it. That’s why there are regulators.”<sup>74</sup>

Chinese regulators and courts have heeded this call to action. In this Part, I show how patent holdup and royalty stacking theories have translated into regulatory guidelines and enforcement actions by Chinese regulators, and judicial guidelines and decisions by Chinese courts, that have systematically favored the interests of SEP licensees (almost always domestic device producers) over SEP licensors (almost always foreign entities, which usually specialize in chip design). The result: a truncated property-rights regime in which SEP owners have no prospect of denying access through injunctive relief, which in turn distorts the pricing of SEP-protected assets to the detriment of the entities responsible for the innovation efforts that drive forward the wireless technology ecosystem.

#### A. REGULATORY GUIDELINES

In the IP context (including SEP-related issues), Chinese competition law sometimes borrows doctrines developed in U.S. antitrust and E.U. competition law and broadens the application of those doctrines in a manner that facilitates legal action to constrain the licensing and enforcement capacities of patent owners. Hence, competition law doctrines in the Chinese IP context can play a different function when used as a tool of industrial trade

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72. Yuan Hao, *SEP Holder’s Right to Injunction Shall Not Be Lightly Deprived*, 2 CHINA PATENTS & TRADEMARKS 83 (2017), [https://www.ssrn.com/sol3/papers.cfm?abstract\\_id=3010761](https://www.ssrn.com/sol3/papers.cfm?abstract_id=3010761).

73. CPI ANTITRUST CHRONICLE, THE SCIENCE OF CHINA’S FRAND RATE-SETTING 4 (2020), <https://www.competitionpolicyinternational.com/wp-content/uploads/2020/03/CPI-Jing.pdf>.

74. CTR. FOR INT’L GOVERNANCE INNOVATION, SPECIAL REPORT: CHINA’S STANDARD-ESSENTIAL PATENTS CHALLENGE: FROM LATECOMER TO (ALMOST) EQUAL PLAYER? 30 (2017), <https://www.cigionline.org/static/documents/documents/China's%20Patents%20ChallengeWEB.pdf> (citing statement by Paul Lin in Joff Wild, *The IP Personalities of 2016, Part Two*, IAM, (Jan. 3, 2017)).

policy, as compared to the functions played by those same doctrines in U.S. or E.U. competition law. Using a term from linguistics, Mark Cohen has described a “false friends” phenomenon in which the meaning of a particular legal term borrowed from a foreign legal system (in Cohen’s example, “anti-suit injunctions”) changes when it is applied in the Chinese legal system.<sup>75</sup> In the SEP context, Chinese regulators have adopted and modified doctrines in U.S. and E.U. competition law to provide regulators with broad discretion to intervene in licensing agreements between technology suppliers and device producers, both directly by limiting the permitted range of licensing terms and indirectly by precluding SEP owners from seeking injunctive relief against infringers.

For purposes of the following discussion, note that Chinese competition regulators were consolidated in 2018 into the State Administration of Market Regulation (SAMR, which also includes the State Intellectual Property Office); however, some of the discussion below will refer separately to the four “predecessor” competition regulators and competition-related entities.<sup>76</sup> Below is a list of the primary sources of Chinese law (including rules and guidelines) to which reference is made in the following discussion.

**Table 2. Selected Sources of Chinese Law Relating to SEP Enforcement and Licensing (2008-2022)**

Year	Source of Law	Issuing Entity	Abbreviation
2008	Anti-Monopoly Law	National People’s Congress	AML

75. Mark Cohen, *China’s Practice of Anti-Suit Injunctions in SEP Litigation: Transplant or False Friend?*, in 5G AND BEYOND: INTELL. PROP. AND COMPETITION POL’Y IN THE INTERNET OF THINGS (eds. Jonathan M. Barnett & Sean M. O’Connor, forthcoming 2023) [hereinafter Cohen, *China’s Practice of Anti-Suit Injunctions*].

76. Until 2018, there were three principal competition regulators in China: the Anti-Monopoly Bureau of the Ministry of Commerce (MOFCOM); the Price Supervision and Anti-Monopoly division of the National Development and Reform Commission (NDRC); and the Anti-Monopoly and Anti-Unfair Competition Enforcement Bureau of the State Administration for Industry and Commerce (SAIC). Additionally, competition guidelines were also issued by the Anti-Monopoly Commission of the State Council, which has also been merged into the SAMR. For full explanation, see Katherine Wang Mimi Yang & David Zhang, *China’s New State Administration for Market Regulation: What to Know and What to Expect*, ROPES & GRAY (Apr. 3, 2018), <https://www.ropesgray.com/en/newsroom/alerts/2018/04/chinas-new-state-market-regulatory-administration-what-to-know-and-what-to-expect>.

2012	Provisions of the Supreme People's Court on Several Issues Concerning Application of Law in Trial of Civil Dispute Cases Arising from Monopolistic Conduct	Supreme People's Court	N/a
2015	Provision on Prohibition of Conducts Abusing Intellectual Property Rights to Exclude and Eliminate Competition	State Administration for Industry and Commerce	2015 IP Abuse Rules
2017	Anti-Monopoly Guidelines for Intellectual Property Abuse (draft)	Anti-Monopoly Commission of the State Council	N/a
2018	Working Guideline on the Trial of Standard Essential Patent Dispute Cases	Guangdong High People's Court	N/a
2020	Anti-Monopoly Guidelines in the Field of Intellectual Property	State Administration of Market Regulation	2020 SAMR IP Guidelines
2020	Provisions on Prohibiting the Abuse of Intellectual Property Rights to Preclude or Restrict Competition	State Administration of Market Regulation	2020 SAMR IP Abuse Rules
2022	Anti-Monopoly Law (amended)	National People's Congress	AML
2022	Provisions on Prohibition for Abuse of Intellectual Property Rights to Exclude or Restrict Competition (draft)	State Administration of Market Regulation	2022 SAMR IP Abuse Rules
2022	Guidelines for Standard-Essential Patent Licensing in the Automotive Industry	China Academy of Information and Communications Technology, China Automotive Technology and Research Center	N/a

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### 1. *Excessive Pricing*

Enacted in 2008 (and amended in 2022), China’s competition statute (the Anti-Monopoly Law or AML) provides a cause of action for “unfairly high” prices against a firm that has a “dominant market position.”<sup>77</sup> Draft IP abuse guidelines issued by the Anti-Monopoly Commission of the State Council in 2012 and 2017 specifically stated that IP licenses are subject to the AML’s prohibition of “unfairly high” pricing, which can constitute an abuse of a dominant position.<sup>78</sup> Additionally, draft IP abuse guidelines issued in 2017 indicated that “when assessing whether SEPs are being licensed at ‘unfairly high patent pricing,’ the level of royalty stacking on standardized products . . . may be considered.”<sup>79</sup> The 2020 SAMR IP Guidelines reiterated this principle concerning IP licensing by a firm with a “dominant market position.”<sup>80</sup> In the case of SEPs, the 2020 SAMR IP Guidelines reiterate that “royalty stacking considerations” will be taken into account in determinations concerning “excessive” pricing.<sup>81</sup> The draft 2022 SAMR IP Abuse Rules provide that a SEP owner that has a “dominant market position” would be deemed in

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77. ANTI-MONOPOLY LAW, Art. 22(1) (amended June 24, 2022) [hereinafter AML 2022]. For unofficial English translation: <https://www.chinalawtranslate.com/en/anti-monopoly-law-2022>. Art. 17(a) is the analogous provision in the Anti-Monopoly Law, as enacted in 2008 [hereinafter AML 2008]. For official English translation of the 2008 law, see [www.npc.gov.cn/zgrdw/englishnpc/Law/2009-02/20/content\\_1471587.htm](http://www.npc.gov.cn/zgrdw/englishnpc/Law/2009-02/20/content_1471587.htm).

78. On the 2012 draft guidelines, see Chen Wenjing, *The Royalty Rate is FRAND or Excessive? The Practice in the EU, China, and the Applicability of Selected Economic Models*, 19 US-CHINA L. REV. 267, 272–73 (2022). On the 2017 draft guidelines, see Koren W. Wong-Ervin, *An Update on the Most Recent Version of China’s Anti-Monopoly Guidelines on the Abuse of Intellectual Property Rights*, CPI ASIA COLUMN (May 2017), [https://gai.gmu.edu/wp-content/uploads/sites/27/2016/07/CPI-Article-on-China-Comments\\_4-17.pdf](https://gai.gmu.edu/wp-content/uploads/sites/27/2016/07/CPI-Article-on-China-Comments_4-17.pdf).

79. Yuan Hao, *Through the Anti-Monopoly Lens: What Constitutes ‘Unfairly High Patent Pricing’ in China?*, 69 GRUR INT’L 823, 828 (2020) (describing Article 14 of the draft Anti-Monopoly Guidelines for Intellectual Property Abuse, issued in 2017 by the Anti-Monopoly Commission of the State Council).

80. STATE ADMIN. FOR MKT. REGUL., STATE COUNCIL ANTI-MONOPOLY COMMITTEE ANTI-MONOPOLY GUIDELINES IN THE FIELD OF INTELLECTUAL PROPERTY RIGHTS, Art. 15 (published Sept. 18, 2020, promulgated Jan. 4, 2019) [hereinafter 2020 SAMR IP GUIDELINES]. Partial unofficial English translation available at Aaron Winger, *China Releases Antitrust Guidelines for Intellectual Property*, CHINA IP LAW UPDATE (2020), <https://www.chinaiplawupdate.com/2020/09/china-releases-antitrust-guidelines-for-intellectual-property/>.

81. *Id.*

violation of the AML if the owner “licenses it [the SEP] at an unfairly high price.”<sup>82</sup>

There are few analogs to these concepts in U.S. or E.U. competition law. U.S. antitrust law does not recognize any cause of action for excessive prices and, while E.U. competition law does provide for such a cause of action, it has historically been applied in a limited number of cases and is generally reserved for exceptional situations.<sup>83</sup> China’s cause of action for excessive pricing poses a liability risk for any licensor given the lack of any clear definition of “unfairly high” pricing and courts’ and regulators’ broad discretion to make that determination<sup>84</sup> (precisely the reasons why E.U. courts and regulators have been reluctant to entertain suits against purportedly excessive prices). This liability risk has been realized in various regulatory actions and private lawsuits against SEP owners that have alleged “unfairly high pricing,” including matters involving InterDigital Corporation (IDC), Ericsson, Sisvel, and Qualcomm.<sup>85</sup> This background legal risk may impact market-negotiated royalties since prospective licensees have a credible threat of contesting (or lobbying competition regulators to contest) royalty rates as “unfairly high” pricing.

## 2. *Essential Facility Doctrine*

In general, Chinese competition law recognizes that IP rights may sometimes be treated as an “essential facility” that imposes on the IP owner a duty to license to all parties on “reasonable” terms. This approach departs substantially from the essential facility doctrine in U.S. antitrust law, which has been applied narrowly by U.S. courts<sup>86</sup> and has never been specifically recognized by the U.S. Supreme Court. While the Supreme Court has

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82. STATE ADMINISTRATION FOR MARKET REGULATION, REGULATION ON PROHIBITION FOR ABUSE OF INTELLECTUAL PROPERTY RIGHTS TO EXCLUDE OR RESTRICT COMPETITION, at Art. 16 (2) (draft released June 29, 2022) [hereinafter 2022 IP ABUSE RULES]. Partial unofficial English translation available at Aaron Winger, *China’s State Administration for Market Regulation Introducing Compulsory Licensing Regime with Draft Provisions on Prohibiting the Abuse of Intellectual Property Rights to Exclude and Restrict Competition?*, CHINA IP LAW UPDATE (June 28, 2022), <https://www.chinaiplawupdate.com/2022/06/chinas-state-administration-for-market-regulation-introducing>.

83. DAMIEN GERADIN, ANNE LAYNE-FARRAR, & NICOLAS PETIT, *E.U. COMPETITION LAW AND ECONOMICS* §§ 4.408-4.419 (2012).

84. Hao, *supra* note 79, at 824 (observing that the lack of a clear definition of “unfairly high prices” in China’s Anti-Monopoly Law “has left enforcement agencies with exceedingly broad discretion in deciding whether a market price is ‘unfairly high’ or not”).

85. *See id.*

86. In U.S. law, the doctrine is generally derived from *United States v. Terminal Railroad Association of St. Louis*, 224 U.S. 118 (1912), although it has been developed more fully in lower-court decisions.



recognized the related “duty to deal” in limited circumstances<sup>87</sup>, it has indicated that this remedy lies at “the outer boundary” of antitrust law and should be applied in only the most exceptional cases.<sup>88</sup> Moreover, the IP licensing guidelines adopted by U.S. antitrust agencies specifically provide that IP rights should not be treated differently from other assets for purposes of antitrust law.<sup>89</sup> As applied in E.U. competition law, the essential facility doctrine can apply to dominant firms but only in narrowly defined circumstances.<sup>90</sup> Similarly, in the IP context, European courts only impose a duty to license (or otherwise make available) IP-protected assets in “exceptional circumstances.”<sup>91</sup>

In contrast, Chinese competition law provides a substantially broader scope to the essential facility and duty to deal doctrines. Specifically, the AML provides that a refusal to deal by a company with a “dominant market position” constitutes an abuse of dominance “without justifiable reasons.”<sup>92</sup> In the IP context, this appears to create a presumption that in the case of a dominant firm, a refusal to license presumptively constitutes an antitrust violation, which places the burden on the defendant to demonstrate “justifiable reasons” for engaging in that practice.<sup>93</sup> Moreover, it is not clear

87. *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 609 (1985).

88. *Verizon Commc’n v. Law Off. of Curtis V. Trinko*, 540 U.S. 398, 398 (2004).

89. U.S. DEPT. OF JUSTICE AND FED. TRADE COMM’N, ANITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY 3 (2017), [https://www.ftc.gov/system/files/documents/public\\_statements/1049793/ip\\_guidelines\\_2017.pdf](https://www.ftc.gov/system/files/documents/public_statements/1049793/ip_guidelines_2017.pdf) (“The Agencies apply the same general antitrust principles to conduct involving intellectual property that they apply to conduct involving any other form of property”).

90. *Case C-7/97, Oscar Bronner GmbH & Co. v. Mediaprint Zeitungs-und Zeitschriftenverlag GmbH & Co. KG*, 1998 E.C.R. I-17794, at 41. For further discussion, see GERADIN ET AL., *supra* note 83, at §§ 4.314-4.319.

91. Communication from the Commission, Guidance on the Commission’s enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, OJ C 45, 24 Feb. 2009.

For discussion, see GERADIN ET AL., *supra* note 83, at §§ 4.303, 4.309-4.313, 4.328-4.339, 4.361-4.370.

92. AML 2008, *supra* note 77, at Art. 22(3).

93. Susan Ning & Ding Liang, *Commentary on the Anti-Monopoly Judicial Interpretation*, KING & WOOD MALLESONS (Aug. 29, 2012), <https://www.chinalawinsight.com/2012/08/articles/compliance/commentary-on-the-antimonopoly-judicial-interpretation/> (stating that the Anti-Monopoly Judicial Interpretation provides that “[w]here the alleged monopolistic conduct is an abuse of a dominant market position as described in Article 17.1 of the AML, the defendant shall assume the burden to prove a defense of justifiable cause of its conduct”). For the primary source, see PROVISIONS OF THE SUPREME PEOPLE’S COURT ON SEVERAL ISSUES CONCERNING THE APPLICATION OF LAW IN THE TRIAL OF CIVIL DISPUTE CASES ARISING FROM MONOPOLISTIC CONDUCT (issued May 3, 2012), <https://www.lawofchina.com/display.aspx?lib=law&id=9300&CGid=>

whether the phrase “justifiable reasons” captures the efficiency gains that regulators and courts under U.S. and E.U. law typically consider when evaluating the competitive effects of a business practice under a balancing test (as implemented in U.S. law through the rule of reason<sup>94</sup> and E.U. law through an “assessment of effects” analysis<sup>95</sup>).

Chinese competition regulators have developed more detailed guidelines concerning refusals to license IP rights. Draft guidelines released in 2010 provided for compulsory licensing if access to IP rights is “essential” for others to compete.<sup>96</sup> This concept has continued to appear in more attenuated forms in subsequently issued guidelines. In 2012, draft IP guidelines were released providing that a SEP holder’s refusal to license “on reasonable terms within the process of standardization” would constitute an abuse of dominant position under the AML, absent “due justifications.”<sup>97</sup> The 2015 IP Abuse Rules, issued by SAIC (one of the “predecessor” competition regulators), provided that an entity that has a “dominant market position” and owns IP that “constitutes a facility essential for production and business operations” may not “refuse to license other business operators to use such intellectual property rights under reasonable conditions to eliminate or restrict competition.”<sup>98</sup> The SAMR 2020 IP Abuse Rules provide that an entity with a “dominant market position” may not decline to allow other entities to use the entity’s “intellectual property rights under reasonable conditions . . . if their [*the entity’s*] intellectual property rights are necessary for production and business activities without proper reasons.”<sup>99</sup> The 2020 SAMR IP Guidelines take a

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94. See, e.g., *California Dental Ass’n v. F.T.C.*, 526 U.S. 756, 779–81 (1999).

95. Lisa Kaltenbrunner, *European Union: Abuse of dominance and article 102 of the TFEU*, GLOBAL COMPETITION REV. (June 24, 2022), <https://globalcompetitionreview.com/review/the-european-middle-east-and-african-antitrust-review/2023/article/european-union-abuse-of-dominance-and-article-102-of-the-tfeu>.

96. *China’s AML and its Impact on U.S. firms: Hearing Before the Subcomm. on Courts and Competition Policy of the H. Comm. on the Judiciary*, 111th Cong. 7 (2010) (statement of the U.S. Chamber of Commerce).

97. Wenjing, *supra* note 78, at 272–74 (describing Guide on Anti-Monopoly Law Enforcement in the Field of Intellectual Property Rights, released in 2012).

98. Stephen Crosswell, Isabella Liu, Grace Wong, Eva Crook-Santner & Donald Pan, *Hong Kong: SAIC Publishes Landmark Antitrust Regulation for Intellectual Property Rights*, GLOBAL COMPLIANCE NEWS (Apr. 27, 2015), <https://www.globalcompliancenes.com/2015/04/27/hong-kong-saic-publishes-landmark-antitrust-regulation-for-intellectual-property-rights/> (describing Article 7 of the State Administration for Market Regulation, Provision of Prohibition of Conducts Abusing Intellectual Property Rights to Exclude and Eliminate Competition (released Apr. 7, 2015)).

99. STATE ADMIN. FOR MKT. REGUL., REGULATIONS ON PROHIBITING ABUSE OF INTELLECTUAL PROPERTY RIGHTS TO EXCLUDE AND RESTRICT COMPETITION (released 2015, amended Oct. 23, 2020, released Nov. 30, 2020) [hereinafter 2020 IP ABUSE RULES].

similar position, stating that a firm with a dominant market position may be held liable for abuse of dominance if it declines to license an IP right “without valid justifications.” The determination concerning “valid justifications” takes into account (among other criteria) whether the IP right is “essential for others to enter the market” and “whether the party being refused is unwilling or unable to pay reasonable royalties.”<sup>100</sup> Similarly, the draft 2022 SAMR IP Abuse Rules construe a refusal to license as an antitrust violation in the case of any IP owner who has a dominant market position and “refuse[s] to license . . . under reasonable conditions, so as to exclude or restrict competition when its intellectual property constitutes necessary facilities for production and business activities.”<sup>101</sup>

A recent decision issued in 2021 provides the first case in which a Chinese court has deemed a patent to be an essential facility, leading to a compulsory licensing remedy.<sup>102</sup> In *Ketian Magnet et al. v. Hitachi Metals*, an intermediate Chinese court found that Hitachi’s patents, which related to a rare-earth magnet alloy used in parts for automobiles and other products, were an essential facility, which imposed an obligation on Hitachi to license the patents to any party on “reasonable” terms. Given that the Hitachi patents were not even SEPs, the court’s decision heightens the risk that Chinese courts may treat SEPs as essential facilities, which could then challenge SEP owners’ customary practice of only licensing at the device (rather than component) level of the wireless supply chain.

### 3. FRAND Principle

SEP owners are generally subject to a commitment to license and enforce SEPs in a manner consistent with the FRAND principle. U.S. courts and E.U. competition law confine FRAND obligations to entities that voluntarily adopted a FRAND commitment to the relevant standard-development organization. In contrast, rules and guidelines issued by Chinese competition

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Partial unofficial English translation: Aaron Wininger, *China’s State Administration for Market Regulation Releases Updated Regulations on Prohibiting Abuse of Intellectual Property Rights to Exclude and Restrict Competition*, CHINA IP LAW UPDATE (June 29, 2023), <https://www.chinaiplawupdate.com/2023/06/chinas-state-administration-for-market-regulation-releases-provisions-prohibiting-abuse-of-intellectual-property-rights-to-exclude-and-restrict-competition/>.

100. 2020 SAMR IP GUIDELINES, *supra* note 80.

101. 2022 IP ABUSE RULES, *supra* note 82, at Art. 7.

102. This paragraph relies on Wei Huang, Fan Zhu, Bei Yin, & Xiumin Ruan, *A Review of the Development of SEP-Related Disputes in China and Outlook for the Future Trend*, CPI COLUMNS ASIA (Nov. 15, 2022), [https://www.pymnts.com/cpi\\_posts/a-review-of-the-development-of-sep-related-disputes-in-china-and-outlook-for-the-future-trend/](https://www.pymnts.com/cpi_posts/a-review-of-the-development-of-sep-related-disputes-in-china-and-outlook-for-the-future-trend/).

regulators have treated the FRAND principle as a mandatory obligation in the case of any patent that is “essential” to a standard (whether or not the patent owner voluntarily made a FRAND commitment) and identifies certain practices as being categorically inconsistent with the FRAND standard. Draft IP guidelines released in 2012 held that, in the case of a SEP that is included in a “national or industrial standard,” the royalty rate should be no higher than the rate charged prior to inclusion of the SEP-protected technology in the standard.<sup>103</sup> The 2020 SAMR IP Abuse Rules adopt a less rigid approach, holding that a SEP owner that has a “dominant market position” must conform to “principles of fairness, reasonableness, and non-discrimination” and refrain from “acts that exclude or restrict competition, such as refusing to license, tying goods or adding other unreasonable conditions in the transaction.”<sup>104</sup> The draft 2022 SAMR IP Abuse Rules provide that the owner of a SEP may not breach “a promise of fair, reasonable and non-discriminatory licensing” and specifically identifies “refusing to license without justification, tying and bundling products, applying differential treatment or imposing other unreasonable restrictions” as violations of the FRAND obligation.<sup>105</sup> Aside from treating the FRAND obligation as a voluntary commitment undertaken by SEP owners, U.S. antitrust law and E.U. competition law also do not treat any specific practices as being *per se* inconsistent with FRAND; rather, any such determination requires a case-specific analysis.

Chinese regulators’ *per se* or “*per se*-like” approach to certain SEP licensing practices creates a mismatch between competition law and long-standing market practice. In the 2020 SAMR IP Abuse Rules, the apparent treatment of “refusing to license” as a *per se* violation is incompatible with standard licensing practice in wireless communications, in which the SEP owner typically licenses at the device level only and declines to license to component suppliers (which are nonetheless generally free from liability as a practical matter since SEP owners would risk patent exhaustion<sup>106</sup> by enforcing SEPs at upstream points on the supply chain). The same is true of the draft 2022 SAMR IP Abuse Rules’ designation of “differential treatment” as a

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103. Wenjing, *supra* note 78, at 273–74 (citing AML IP Guidelines (fifth draft), Art. 22, Para. 3).

104. 2020 IP ABUSE RULES, *supra* note 99, at Art. 13(2).

105. 2022 IP ABUSE RULES, *supra* note 82, at Art. 16(2).

106. The doctrine of patent exhaustion provides that, after an “authorized sale” of an “article” embodying a patented technology, the patent owner has no legal right to control or otherwise regulate the subsequent resale or use of that article in the market (but is free to do so through technological or contractual means). For the leading U.S. Supreme Court case, see *Impression Prods., Inc. v. Lexmark Int’l, Inc.*, 581 U.S. (2017).

FRAND violation, which would seem to bar even the slightest differences in licensing terms offered to different licensees by the same patent owner. That position departs both from market practice and the general understanding under U.S. antitrust and E.U. competition law that FRAND does not bar differential licensing terms that legitimately reflect differences among licensees or different packages of licensing terms offered to similarly-situated licensees.<sup>107</sup>

Chinese competition-law guidelines relating to SEPs also depart from U.S. antitrust and E.U. competition law in another important respect. Under E.U. (and U.K.) case law, a SEP owner risks antitrust liability if it seeks injunctive relief against an infringer; however, if the infringer is shown to be an “unwilling licensee,” then the SEP owner may seek an injunction without such liability and the court may grant an injunction if it finds that the infringer has engaged in “holdout” tactics.<sup>108</sup> While somewhat less clear, U.S. case law similarly holds that the FRAND commitment precludes injunctive relief for SEP owners unless the infringer is not engaging in good-faith negotiation.<sup>109</sup> In contrast, the 2020 SAMR IP Guidelines provide that a SEP holder with a dominant market position can be subject to antitrust liability for seeking injunctive relief against an infringer if it is found to have done so “to force the licensee to accept . . . unfairly high license fees or other unreasonable licensing conditions.”<sup>110</sup> The concept reappears in the 2022 SAMR IP Guidelines, which provide that a SEP holder with a dominant market position would breach its FRAND obligation if it “refuses to license without justifiable reasons.”<sup>111</sup> Given that “justifiable reasons” is not defined, this provision provides a wide ambit for a court to deny injunctive relief as being inconsistent with a SEP

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107. See, e.g., *Unwired Planet Int’l Ltd. v. Huawei Technologies Co. Ltd. et al.*, High Court of Justice, [2017] EWHC 711 (Pat.) (May 4, 2017) at ¶¶ 418–502 (holding that non-discrimination principle in FRAND commitment should be applied based on a case-specific showing of competitive harm). For further discussion, see Jorge L. Contreras & Anne Layne-Farrar, *Non-Discrimination and FRAND Commitments*, in *THE CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW, VOL. 1: COMPETITION, ANTITRUST AND PATENTS* (ed. Jorge Contreras 2018).

108. *Unwired Planet Int’l Ltd. v. Huawei Techs. Co.*, 2017 EWHC (Pat) 71; Case C-170/13, *Huawei Techs. Co. Ltd. v. ZTE Corp. and ZTE Deutschland GmbH*, ECLI:EU:C:2015:477 (July 16, 2015).

109. *Apple Inc. v. Motorola Inc.*, 757 F.3d 1286, 1331–32 (Fed. Cir. 2014) (ruling that trial court “erred” when it “applied a per se rule that injunctions are unavailable for SEPs” and that “an injunction [for a SEP owner] may be justified where an infringer unilaterally refuses a FRAND royalty or unreasonably delays negotiations to the same effect”).

110. 2020 SAMR IP GUIDELINES, *supra* note 80.

111. 2022 IP ABUSE RULES, *supra* note 82, at Art. 16(2).

owner's FRAND commitment (although, as discussed subsequently,<sup>112</sup> it now appears that Chinese courts have adopted to a substantial extent the view that SEP owners may seek injunctive relief against an infringer that is deemed to be an unwilling licensee).

It might be questioned whether a SEP owner would always be deemed to hold a dominant market position, which triggers the effective ban on injunctive relief. While the 2020 SAMR IP Guidelines state that a SEP owner is not always deemed to have a "dominant market position,"<sup>113</sup> there are two reasons to believe that SEP owners will infrequently escape this categorization. First, the AML defines dominant market position broadly based on several factors, including whether the entity is "preventing or exerting an influence on the access of other undertakings to the market" and "the extent to which other business managers depend on it in transactions."<sup>114</sup> Second, as a matter of judicial and regulatory practice, some commentators observe that SEP owners have usually been placed in this category,<sup>115</sup> noting that judicial and administrative findings "have relieved the burden of proof from the implementer in showing the SEP holder's dominant position."<sup>116</sup> This is illustrated by the litigation between IDC and Huawei (discussed in more detail

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112. See *infra* notes 145–149 and accompanying text.

113. 2020 SAMR IP GUIDELINES, *supra* note 80.

114. AML 2008, *supra* note 77, at Arts. 17, 18(4). The analogous provision in the 2022 AML statute is Art. 23(1), which refers similarly to "the level of difficulty for other undertakings to enter the relevant market" and "the extent to which other undertakings rely on the [dominant] undertaking for trading," see AML 2022, *supra* note 77. A commentary on these provisions (in the 2008 statute) notes that this "would seem to raise the possibility that a business may be found to have market dominance because it is a major supplier or customer to another," see Yee Wah Chin, *Intellectual Property Rights and Antitrust in China*, in IP PROTECTION IN CHINA 303 (2015). This broad definition of market dominance contrasts sharply with U.S. antitrust law, which cannot support a single-firm monopolization claim (the closest U.S. equivalent to an abuse of dominance claim) without a showing of market power, and departs from E.U. law, which requires that any abuse of dominance claim show that a firm can "prevent effective competition being maintained on the relevant market." See Case 85/76, *Hoffman-La Roche & Co. AG v. Commission of the European Communities*, 1979 E.C.R. 461 (interpreting TFEU Art. 82).

115. Huang et al., *supra* note 102.

116. *Id.* The authors refer to the decision in the *Huawei v. IDC* case by the Guangdong Higher Court and the administrative decision by the NDRC against Qualcomm. However, the authors point out that the draft 2022 SAMR IP Abuse Rules suggest that it is possible that SEP owners may still be able to challenge a finding of dominance if they can show sufficiently countervailing bargaining power on the part of SEP implementers. Moreover, certain Chinese judges have rejected a categorical approach on this point, holding that whether or not a SEP owner has a dominant market position must be determined on a case-specific basis. I thank Prof. Yuan Hao for this last observation.

subsequently<sup>117</sup>), where the court treated each of IDC’s SEPs as a separate product market,<sup>118</sup> which in turn ensured that IDC would be deemed to hold a “dominant” position in each SEP-specific licensing market. This departs from market definitions used in at least two SEP litigations in the United States and Germany, in which the relevant market was defined more broadly as the product market for which the relevant SEPs were licensed<sup>119</sup>—a crucial difference since a product-level market definition does not predetermine that the SEPs being litigated are an essential technology input that confers market power on the SEP owner.<sup>120</sup> While the point is not settled, it appears that a SEP owner must assume as a matter of prudence that it will be deemed to hold a dominant market position and therefore cannot seek injunctive relief against an infringer without a significant risk of liability under Chinese competition law for doing so.

## B. REGULATORY INVESTIGATION AND ENFORCEMENT

Chinese regulators have used the tools supplied by competition law to undertake investigations or enforcement actions concerning the SEP licensing practices of multiple foreign licensors, including IDC, Qualcomm, Dolby, HDMI, Technicolor,<sup>121</sup> and in recently launched investigations concerning 5G wireless technologies, Nokia and Ericsson.<sup>122</sup> Most notably, in 2013, the NRDC (one of the “predecessor” competition regulators) brought an abuse of dominance action against Qualcomm on the ground that it had charged “excessive” royalty fees and engaged in anticompetitive grant-backs and tying practices in licensing CDMA, WCDMA, and LTE wireless communications technologies. This followed the filing of a complaint by Chinese telecom firms with the regulator, alleging that Qualcomm was “overcharging Chinese mobile makers on patent fees and boosting sales by tying products.”<sup>123</sup> Both claims relied on the ability under Chinese competition law to bring suit for “unfairly

117. See *infra* notes 160–166 and accompanying text.

118. Chin, *supra* note 77, at 314.

119. *FTC v. Qualcomm*, 411 F. Supp. 3d 658, 683 (N.D. Cal. 2019) (defining relevant market as the market for CDMA modem chip and premium LTE modem chips); *IP Bridge v. Huawei*, Dusseldorf Regional Court (Dec. 12, 2018), at 52–53 (defining relevant market as the market for smartphones that implement the H.264 standard).

120. On this point, see Huang et al., *supra* note 102.

121. U.S. CHAMBER OF COM., *supra* note 9, at 62.

122. Scott Yu & Jiang Huikuang (Zhong Lun Law Firm), *China Antitrust/Competition Update (2022 Q2)*, LEXOLOGY (Nov. 2, 2022), <https://s3.amazonaws.com/documents.lexology.com/de587a36-a4b2-4af1-9617-f8d95602267b.pdf?AWSAccessKeyId=AKIAVYILUYJ754JTDY6T&Expires=1694501110&Signature=4V7tU7hR0Z9dpVsYbF%2FkLb9eLP0%3D>.

123. U.S. CHAMBER OF COM., *supra* note 9, at 66.

high” prices and, in the case of a firm with a “dominant market position,” to bring suit for tying with the burden placed on the defendant to demonstrate “valid justifications” for that practice. In 2015, Qualcomm resolved the enforcement action by agreeing to pay a fine of approximately \$975 million. Of greater importance, Qualcomm was required to lower substantially the royalties paid by domestic 3G and 4G handset device makers for licensing Qualcomm’s patent portfolio, principally by redefining the “royalty base” as only 65% of the device sale price.<sup>124</sup> It is notable that suits brought by competition regulators in Europe, Japan, and the United States against Qualcomm for engaging in allegedly anticompetitive tying practices all ultimately failed to establish liability when subjected to scrutiny by appellate courts (and none brought claims for excessive pricing).<sup>125</sup> In the Chinese system, regulators’ actions are largely immune from such scrutiny due to defendant firms’ reluctance to appeal, which is attributed to the perceived futility of doing so<sup>126</sup> (in part due to the lack of judicial independence<sup>127</sup>) and fear of retribution or public “shaming” by authorities.<sup>128</sup> Defendants’ litigation posture may also be impacted by an effort to avoid triggering the maximum penalties under Chinese competition law, which can result not only in disgorgement of gains derived from the offending practice but also a fine of up to 10% of the defendant’s annual revenue.<sup>129</sup>

This strategic use of competition law as a device for collectively negotiating IP royalty rates advances China’s interest in lowering the input costs incurred by its domestic device producers that continue to rely on technology inputs sourced from foreign owners. Given the size of the Chinese market for mobile communications devices, the rates secured by Chinese regulators on behalf of domestic device producers can impact the global market rate for purposes of future licensing and settlement negotiations and “reasonable royalty” damages

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124. Noel Randewich & Matthew Miller, *Qualcomm to Pay \$975 Million to Resolve China Antitrust Dispute*, REUTERS (Feb. 9, 2019), <https://www.reuters.com/article/us-china-qualcomm/qualcomm-to-pay-975-million-to-resolve-china-antitrust-dispute-idUSKBN0LD2EL20150210>.

125. FTC v. Qualcomm Inc., 969 F.3d 974 (9th Cir. 2020) (rejecting all antitrust claims and rescinding the district court’s order); Case T-235/18, *Qualcomm, Inc. v. European Commission*, ECLI:EU:T:2022:358, (June 15, 2022) (annulling fine of 997 million euros imposed by regulator and finding no violations of competition law); Shara Tibken, *Qualcomm’s Not a Monopoly, Japan Decides after Monthlong Investigation*, CNET (Mar. 15, 2019) (competition regulator finds that Qualcomm is not a monopoly and cancels 2009 cease-and-desist order).

126. Atkinson, Cory & Ezell, *supra* note 9, at 44.

127. U.S. INT’L TRADE COMM’N, *supra* note 49, at 1-11 to 1-12.

128. ANGELA HUYUE ZHANG, CHINESE ANTITRUST EXCEPTIONALISM 72–73, 89, 95, 115 (2021).

129. Huang et al., *supra* note 102.



in patent infringement actions in other jurisdictions. Illustrating this possibility, Chinese competition authorities' actions against Qualcomm in 2015 were followed by large fines being assessed against Qualcomm in 2016 and 2017 by competition authorities in Korea and Taiwan, respectively (although the fines in both jurisdictions were reduced substantially on appeal).<sup>130</sup> More importantly, regulators' interventions may have encouraged SEP licensors to offer lower royalty rates to minimize exposure to the costs, delays, and penalties involved if regulators were to intervene again. Through these direct and indirect mechanisms, the strategic deployment of competition law on behalf of net-IP users in a major jurisdiction can impact royalty rates across multiple jurisdictions, resulting in wealth transfers on a global scale from IP licensor-innovators to IP licensee-producers.

Most recently, the Chinese government has (somewhat indirectly) issued guidelines that signal an intent to intervene concerning SEP licensing practices in the automotive industry, in which wireless-enabled functionalities are now an integral part of the industry. In September 2022, two institutes that are reportedly supported by the Ministry of Industry and Technology published draft guidelines concerning SEP licensing in the automotive industry.<sup>131</sup> The guidelines adopt several features that would favor the interests of implementers (in this case, China-based automotive producers) over the interests of innovators that enable connectivity functionalities in motor vehicles. Given the size of the Chinese market (which accounted for more than 32% of worldwide vehicle production as of 2022<sup>132</sup>), these interventions have the potential to impact SEP licensing practices and rates worldwide.

First, and most notably, the guidelines adopt the “license to all” principle, which interprets the FRAND commitment to mean that SEP licensors are required to grant licenses at all points of the supply chain. If implemented, this

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130. Barnett, *supra* note 1, at 231–34.

131. Ye Zhao, *China's Auto Guidelines Endorse "License-to-All" and SSPPU*, MONDAQ (Nov. 30, 2022), <https://www.mondaq.com/china/patent/1255512/china39s-auto-guidelines-endorse-licensetoall-and-ssppu>. For the guidelines, see CHINA AUTOMOTIVE TECHNOLOGY AND RESEARCH CENTER AND CHINA ACADEMY OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, GUIDELINES OF STANDARD-ESSENTIAL PATENT LICENSE FOR AUTOMOTIVE INDUSTRY (2022). The report was issued by these two institutes, “with support from IP Committee of China-SAE, the IMT-2020 (5G) Promotion Group and the Working Group on Automotive Standard Essential Patents,” see Johnson Wang, *China: SEPs and FRAND—litigation, policy and latest developments*, GLOBAL COMP. REV. (Dec. 2, 2022), <https://globalcompetitionreview.com/hub/sepfrand-hub/2022/article/china-seps-and-frand-litigation-policy-and-latest-developments>.

132. STATISTA, *Automotive Manufacturing in China—Statistics & Facts*, (source?) (June 21, 2022).

interpretation would deviate from industry practice in the wireless industry, which has historically licensed at the device level, and would expose licensors to the risk of patent exhaustion as a result of licensing at a component level.<sup>133</sup> This would also deviate from emergent SEP licensing trends in the automotive industry in the United States and Europe, where many auto manufacturers have recently joined patent pools that operate under the device-level licensing model.<sup>134</sup> Relatedly, the guidelines suggest that SEP licensing practices should conform to industry custom, which appears to refer to the customary practice in the automotive industry of licensing at the component, rather than the device, level.<sup>135</sup>

Second, the guidelines effectively adopt the principle that reasonable royalty damages for SEP owners must be calculated using a royalty base that is confined to the specific component covered by the relevant patent (the “smallest saleable practicing patent unit” or “SSPPU”), rather than the vehicle as a whole.<sup>136</sup> In a 2021 patent infringement case, the SPC applied the SSPPU principle in defining the royalty base for purposes of determining a reasonable royalty.<sup>137</sup> This departs from U.S. patent law, which adheres to the principle of apportionment but has specifically rejected the view that the SSPPU must be used as the royalty base in calculating reasonable royalty damages.<sup>138</sup>

Third, the guidelines take a strict understanding of the non-discriminatory (“ND”) element of the FRAND obligation by adopting the view that a SEP owner must “license to implementers by using substantially identical or similar terms under substantially identical or similar conditions.”<sup>139</sup> This view appears to depart from the more flexible understanding of non-discrimination in other

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133. On the doctrine of patent exhaustion, *see text in supra* note 106. For the leading U.S. Supreme Court case, see *Impression Prods., Inc. v. Lexmark Int’l, Inc.*, 581 U.S. (2017).

134. Jonathan M. Barnett, *The Economic Case Against Licensee Negotiation Groups in the Internet of Things*, 10 J. ANTITRUST ENFT 518, 534-36 (2022).

135. Wang, *supra* note 131.

136. *Id.*

137. Yan Wang, Da Shi, Yue Li, & Shasha Zhou, *FRAND Royalty Base: Will Chinese Courts More Likely Accept the Component Approach? On Huawei’s Granting of a Cellular IoT SEP License at the Component Level*, CPI COLUMNS INTELL. PROP. (Nov. 13, 2022), [https://www.pymnts.com/cpi\\_posts/frand-royalty-base-will-chinese-courts-more-likely-accept-the-component-approach-on-huaweis-granting-of-a-cellular-iot-sep-license-at-the-component-level/\(citing decision by SPC in infringement litigation between Double Medical Technology Inc. and Synthes GmbH\)](https://www.pymnts.com/cpi_posts/frand-royalty-base-will-chinese-courts-more-likely-accept-the-component-approach-on-huaweis-granting-of-a-cellular-iot-sep-license-at-the-component-level/(citing%20decision%20by%20SPC%20in%20infringement%20litigation%20between%20Double%20Medical%20Technology%20Inc.%20and%20Synthes%20GmbH)).

138. *Commonwealth Sci. & Indus. Rsch. Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1303 (Fed. Cir. 2015) (rejecting the view that “all damages models” in patent infringement litigation must “begin with the smallest saleable patent-practicing unit”).

139. Wang, *supra* note 131.

major jurisdictions<sup>140</sup>—for example, the U.K. High Court in *Unwired Planet v. Huawei* rejected a formalist understanding of the non-discrimination principle and instead held that the principle should be applied based on a showing of competitive harm in particular circumstances.<sup>141</sup>

### C. JUDICIAL ACTIONS

In cases involving SEPs, Chinese courts have largely followed the implementer-friendly trajectory followed by competition regulators. During 2011-2020, 46 litigations involving SEPs were filed in Chinese courts, of which eight yielded a decision and four reached a FRAND rate determination.<sup>142</sup> Published decisions<sup>143</sup> have principally addressed four elements of SEP licensing and enforcement and, concerning each element, have generally advanced positions that favor the interests of SEP licensees over licensors.

#### 1. *Injunctive Relief*

Various statements by Chinese courts identify circumstances in which SEP owners may seek injunctive relief against alleged infringers without triggering liability under competition law. However, these standards are sufficiently vague that a SEP owner (and especially, a foreign SEP owner) would likely be reluctant to pursue this remedy.

In 2015, draft guidelines released by Chinese competition regulators provided that a SEP holder that requests injunctive relief against an alleged infringer may be deemed to violate competition law if the request is deemed to have been made for the purpose of compelling a licensee to accept “unfairly

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140. On this point, see Contreras and Layne-Farrar, *supra* note 107.

141. *Unwired Planet Int’l Ltd. v. Huawei Technologies Co. Ltd. et al.*, High Court of Justice, 2017 EWHC 711 (Pat.) (May 4, 2017), at ¶¶ 418–502.

142. Fei Deng, Shan Jiao, & Guanbin Xie, *The Current State of SEP Litigation in China*, AM. BAR. ASS’N. (Oct. 21, 2021), [https://www.americanbar.org/groups/antitrust\\_law/resources/magazine/2021-spring/current-state-sep-litigation-china/](https://www.americanbar.org/groups/antitrust_law/resources/magazine/2021-spring/current-state-sep-litigation-china/). This figure reflects consolidation (where applicable) of multiple cases filed by the same plaintiff that target the same party or parties under different causes of action.

143. Note that not all Chinese court decisions are published (and some are withdrawn after having been published) and hence it is not always possible to deliver comprehensive descriptions of actual judicial outcomes in any particular area of law. See Mark A. Cohen, *US Responses to China’s Changing IP Regime, Testimony Before the US-China Economic and Security Commission*, U.S.-CHINA ECON. AND SEC. REVIEW COMM’N (Apr. 14, 2022) [https://www.uscc.gov/sites/default/files/2022-04/Mark\\_Cohen\\_Testimony.pdf](https://www.uscc.gov/sites/default/files/2022-04/Mark_Cohen_Testimony.pdf) (noting that Chinese courts “do not publish all cases or important interim decisions” and that “there appears to be some backsliding in the transparency of China’s legal system generally in the past several years, with courts being told to withdraw cases from publication”).

high” royalties or other “unreasonable” terms.<sup>144</sup> In 2016, the Supreme People’s Court (SPC) took a more attenuated position, which entitles SEP owners to injunctive relief in cases where the alleged infringer is deemed to be an unwilling licensee based on bad-faith negotiating tactics. Specifically, the SPC released a “Judicial Interpretation” providing that a SEP owner shall be entitled to an injunction upon a finding of infringement, unless the SEP owner breached its FRAND commitment and the infringer had “apparent fault.”<sup>145</sup> In 2017 and 2018, the Beijing and Guangdong High Courts issued similar guidelines that established a presumption against injunctive relief for SEP owners, which is subject to reversal if an alleged infringer declines to commit to pay a “reasonable” royalty or negotiates in bad faith.<sup>146</sup>

Chinese courts’ approach resembles to a certain extent influential court decisions in the European Union and the United Kingdom in 2015 and 2017, respectively, which condition the presumption against injunctive relief for SEP owners on good-faith negotiation by the prospective licensee (the “willing licensee” standard).<sup>147</sup> However, the European courts (especially, decisions by German courts that have applied the “willing licensee” standard) have specified a reasonably well-defined sequence of steps that must be followed to qualify as a willing licensee,<sup>148</sup> providing SEP owners with more certainty that, in certain circumstances, seeking an injunction will not trigger liability under competition law. By contrast, the Chinese courts’ vague reference to “good-faith” negotiation or a “reasonable” royalty offer may discourage SEP owners from seeking injunctive relief since a SEP owner who does so against an alleged infringer who is later deemed to have been a willing licensee would then be exposed to liability under competition law. This is precisely what

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144. ANTI-MONOPOLY GUIDELINES ON ABUSE OF INTELLECTUAL PROPERTY RIGHTS (EXPOSURE DRAFT) § 3 (promulgated by the Anti-Monopoly Commission of the State Council, Dec. 31, 2015), <https://web.archive.org/web/20160914225143/http://uschinatradewar.com/files/2016/01/IPR-Guideline-draft-20151231-EN.pdf> (unofficial English translation). For commentary, see Jie Gao, *Development of the FRAND Jurisprudence in China*, 21 COLUM. SCI. & TECH. L. REV. 446, 467 (2020).

145. Hao, *supra* note 72, at 1 (quoting Interpretation (II) of the Supreme People’s Court on Several Issues concerning the Application of Law in the Trial of Patent Infringement Dispute Cases, art. 24 (effective Apr. 1, 2016)).

146. Gao, *supra* note 144, at 473–75.

147. For the E.U. decision, see Case C-170/13, Huawei Technologies Co. Ltd. v. ZTE Corp., ZTE Deutschland GmbH, 2014 E.C.R. 477 ¶¶ 61–67; for the U.K. decision, see Unwired Planet Int’l Ltd. v. Huawei Techs. Co., 2017 EWHC (Pat.) 711.

148. Nadine Hermann, *Injunctions in Patent Litigation Following the CJEU Huawei v ZTE Ruling (Germany)*, 9 J. EUR. COMP. L. & PRACTICE 582 (2018).

occurred to IDC, a SEP owner, when a Chinese court ordered it to pay damages to Huawei, the *infringer* in the litigation.<sup>149</sup>

In 2017 and 2018, Chinese courts did grant injunctive relief to SEP owners in two litigations.<sup>150</sup> However, the SEP-owner plaintiffs in both cases were domestic firms in strategically important markets. In *Inncomm v. Sony*, the SEPs related to an indigenous Chinese standard (a substitute for the international WLAN standard), and in *Huawei v. Samsung*, the SEP owner was China's largest telecommunications manufacturer. Hence the geopolitical considerations that typically favor weak enforcement of SEPs were reversed in those cases. As a matter of practice, there seems to be a low likelihood that foreign SEP owners can secure an injunction in Chinese SEP infringement litigation and a high likelihood that even attempting to do so can result in the SEP owner being held liable under competition law.

## 2. Reasonable Royalty and FRAND Rate Determinations

The use of competition law for mercantilist purposes is evidenced by a sequence of statements and actions by Chinese courts and regulators that either directly set—or indirectly have the effect of reducing—royalty rates between SEP owners and local device manufacturers.

In 2008, the SPC issued an advisory opinion that any patent included in a mandatory Chinese national standard requires its owner to offer licenses to all implementers and, in the case of infringement, entitles the owner to a royalty rate that is “significantly lower than the normal amount.”<sup>151</sup> Similarly, draft guidelines released by a Chinese competition regulator in 2009 provided that a patent owner whose patents are included in a mandatory Chinese national standard must offer its patents at a zero royalty or a royalty “significantly lower than a normal rate.”<sup>152</sup> Revised draft versions of those guidelines, issued in

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149. Gao, *supra* note 144, at 467. For further discussion, see *infra* notes 160–165 and accompanying text.

150. Gao, *supra* note 144, at 467–69, 471. On the litigation involving Huawei and Samsung, see Christine Yiu & Richard Vary, *Shenzhen Court Issues Written Judgment in Huawei v. Samsung Case*, BIRD & BIRD (Mar. 25, 2018), <https://www.twobirds.com/en/insights/2018/global/shenzhen-court-issues-written-judgment-in-huawei-v-samsung-case>.

151. Gao, *supra* note 144, at 466–67; Sokol & Zheng, *supra* note 49, at 86.

152. Gao, *supra* note 144, at 479. See generally CHINA: EFFECTS OF INTELLECTUAL PROPERTY INFRINGEMENT AND INDIGENOUS INNOVATION POLICIES ON THE U.S. ECONOMY, INV. NO. 332-519, USITC PUB. 4226 (May 2011), <https://www.usitc.gov/publications/332/pub4226.pdf> (citing Proposed Regulations for the Administration of the Formulation and Revision of the Patent-Involving National Standards (2009)).

2014, dropped the zero-royalty option and the “significantly lower than” language and instead provided that a SEP patent should be licensed at a FRAND rate.<sup>153</sup> In 2018, the High People’s Court of Guangdong issued guidelines that provided that FRAND rate determinations in SEP infringement litigation should use the comparable licenses and “top-down” approaches.<sup>154</sup> In 2019, a Chinese court applied the top-down approach in setting a global FRAND rate in a declaratory judgment action brought by Huawei, in response to an infringement suit filed against it in a U.K. court by Conversant, a SEP owner.<sup>155</sup> The top-down approach (which has been applied by two U.S. courts in SEP infringement litigation<sup>156</sup> but rejected by most U.S. and European courts in favor of the comparable licenses approach<sup>157</sup>) purports to address concerns over royalty stacking but tends to reduce royalty rates since it places a cap on the total aggregate royalty and then allocates a portion of that amount to the SEP owner based on its relative technological contribution to the relevant device.<sup>158</sup> The top-down approach also often relies on the number of patents held by each entity to determine the SEP owner’s technological contribution and therefore the portion of the industry “stack” to which it is entitled, an approach that ignores differences in patent quality and can

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153. Gao, *supra* note 144, at 479 (citing Administration Regulations for the National Standards Relating to Patents, Bulletin of the National Standards Administration Committee and State Intellectual Property Office of China, Art. 9 (2013)).

154. King & Wood Mallesons, *Guangdong High People’s Court Issued a Guideline for Trial of SEP Disputes*, CHINA LAW INSIGHT (May 23, 2018), <https://www.chinalawinsight.com/2018/05/articles/intellectual-property/guangdon-high-peoples-court-issued-a-guideline-for-trial-of-sep-disputes/> (describing Working Guideline on the Trial of Standard Essential Patent Dispute Cases, as promulgated by Guangdong High People’s Court, on Apr. 26, 2018).

155. Yu et al., *supra* note 51, at 1576–77.

156. TCL Comm’n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, 943 F.3d 1360, 1369 (C.D. Cal. 2018); *In re Innovatio IP Ventures Patent Litigation*, No. 11 C 9308, 2013 WL 5593609, at \*43 (N.D. Ill. Oct. 3, 2013).

157. For cases using the comparable license approach, either exclusively or primarily and subject to certain qualifications, see *Ericsson, Inc. v. D-Link Systems, Inc.*, 773 F.3d 1201, 1227–28 (Fed. Cir. 2014); *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, at 129–206 (W.D. Wash. 2013); *HTC Corp. v. Telefonaktiebolaget Ericsson*, No. 6:18-CV-00243-JRG, at 10 (E.D. Tex. 2019); *Unwired Planet v. Huawei*, 2017 EWHC (Pat.) 711, *affirmed* *Unwired Planet v. Huawei*, 2018 EWCA (Civ) 2344, at para. 179 *et seq.*

158. Haris Tsilikas, *Comparable Agreements and the “Top-Down” Approach to FRAND Royalties Determination*, COMPETITION POL’Y INT’L (July 21, 2020), [https://www.pymnts.com/cpi\\_posts/comparable-agreements-and-the-top-down-approach-to-frand-royalties-determination/](https://www.pymnts.com/cpi_posts/comparable-agreements-and-the-top-down-approach-to-frand-royalties-determination/)

therefore yield royalty rates that undercompensate SEP owners with the highest-value patents.<sup>159</sup>

The earliest and still the most influential FRAND rate determination decision by a Chinese court involved a litigation between IDC, a wireless research and patent licensing entity that brought a patent infringement suit against Huawei, China's flagship wireless device and equipment producer.<sup>160</sup> In 2011, IDC filed a patent infringement suit against Huawei in U.S. district court and sought an exclusion order against Huawei in the International Trade Commission (ITC), a U.S. administrative agency.<sup>161</sup> Huawei responded by filing suit in a Chinese court alleging violations of Chinese competition law (specifically, an alleged refusal by Huawei to license on FRAND terms) and seeking a FRAND rate determination.<sup>162</sup> Concurrently, a Chinese competition regulator initiated an investigation into IDC.<sup>163</sup> In 2013, the Chinese court ordered IDC to pay Huawei approximately \$3 million in damages under the counterclaim for violations of competition law.<sup>164</sup> The court found that IDC, as a SEP owner, had violated competition law by abusing its "dominant position" through excessive pricing, illegal tying of SEPs and non-SEPs, and by seeking an injunction for patent infringement in U.S. district court and an exclusion order at the ITC while negotiations between the parties were

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159. On the deficiencies of using patent counts to derive reasonable royalty rates, see J. Gregory Sidak, *Judge Sedra's Errors in TCL v. Ericsson Concerning Apportionment, Nondiscrimination, and Royalties Under the FRAND Contract*, 4 CRITERION J. INNOVATION 101, 158–161 (2019).

160. The decisions in the litigation include: Huawei Jishu Youxian Gongsi Su Jiaohu Shuzi Tongxin Youxian Gongsi [Huawei Tech. Co. v. InterDigital Communications, Inc.], 2011 Shen Zhong Fa Zhi Min Zi No. 858 (Shenzhen Inter. People's Ct. 2011); Huawei Jishu Youxian Gongsi Su Jiaohu Suzi Tongxin Youxian Gongsi [Huawei Tech. Co. v. InterDigital Communications, Inc.]; and 2013 Yue Gao Fa Min San Zhong Zi No. 305 & 306 (Guangdong High People's Ct. 2013).

161. U.S. INTERNATIONAL TRADE COMMISSION, IN THE MATTER OF CERTAIN WIRELESS DEVICES WITH 3G CAPABILITIES AND COMPONENTS THEREOF: NOTICE OF INSTITUTION OF INVESTIGATION, 76 Fed. Reg. 54252, 54253 (Aug. 31, 2011); Complaint, InterDigital Communications, Inc. et al. v. Huawei Technologies Co. Ltd. et al., 2013 WL 30637 No. 1:13CV00008 (D. Del. Jan. 2, 2013).

162. Gao, *supra* note 144, at 455–57; Wenjing, *supra* note 78, at 274–75; Mark Cohen, *Huawei/InterDigital Appeal Affirms Shenzhen Lower Court on Standards Essential Patent*, CHINA IPR (Oct. 29, 2013), <https://chinaipr.com/2013/10/29/huaweinterdigital-appeal-affirms-shenzhen-lower-court-on-standards-essential-patent/>.

163. InterDigital, Quarterly Report (Form 10-Q) (Oct. 31, 2013).

164. *Chinese Court Publishes Decisions Finding That InterDigital Violated AML Through Discriminatory Pricing, Sets FRAND Rate for Licensing InterDigital's SEPs Under Chinese Standards*, ORRICK (June 6, 2014), <https://blogs.orrick.com/antitrust/2014/06/06/chinese-court-publishes-decisions-finding-that-interdigital-violated-aml-through-discriminatory-pricing-sets-frand-rate-for-licensing-interdigitals-seps-under-chinese-standards/>.

reportedly still pending.<sup>165</sup> Hence, IDC's effort to enforce its SEP rights resulted in payment of a monetary penalty by IDC simply for attempting enforcement.

The most important effect of the IDC/Huawei litigation was likely the court's determination of the FRAND royalty rate—which the infringer had affirmatively sought by initiating litigation in China. The appellate court determined the FRAND royalty rate for IDC's 2G, 3G, and 4G/LTE essential patents as 0.019% of the device sale price, although it failed to publish the reasoning behind this determination.<sup>166</sup> These values fell well below contemporaneously published rates for LTE-related SEPs, which ranged from 0.8% to 3.25% of a device's sale price<sup>167</sup> as well as reported royalty rates of 1.5% and 1% set by Huawei and ZTE when licensing out wireless SEPs.<sup>168</sup> Moreover, the appellate court's reasoning in affirming the lower court's rate determination seems to rely explicitly on an interest in promoting Huawei's competitive interests (rather than preserving the interest in preserving market pricing): "IDC's act of charging unfairly high licensing fee to Huawei, will force Huawei to either quit the competition in the relevant end product market, or accept the unfair pricing conditions, which will render Huawei to increased costs and decreased profits in relevant end product market, directly restricting its capability to compete."<sup>169</sup> The apparently low royalty rates determined in the IDC/Huawei litigation seem to be a typical occurrence in Chinese SEP infringement litigations. As observed by one researcher, the determination of a reasonable royalty by Chinese courts in SEP infringement litigations translates into judicially determined "royalty rates [that are] lower than other countries, especially the United States and Europe."<sup>170</sup> This form of judicial rate-setting effectively reduces the value of SEPs, both for purposes of

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165. Gao, *supra* note 144, at 467.

166. *Id.* at 457; Wenjing, *supra* note 78, at 275–76.

167. Eric Stasik, *Royalty Rates and Licensing Strategies for Essential Patents on LTE (4G) Telecommunications Standards*, LES NOUVELLES 114, 116 (Sept. 2010), <https://www.scribd.com/document/455123937/Royalty-Rates-And-Licensing-Strategies-For-Essential-Patents-On-LTE-4G-Telecommunication-Standards>.

168. U.S. CHAMBER OF COM., *supra* note 9, at 75. *See also* Chin, *supra* note 77, at 314 (noting that court's royalty rate determination in the IDC/Huawei litigation fell below the rate charged by Huawei on its own SEPs).

169. The quoted language is sourced from Hao, *supra* note 79.

170. Gao, *supra* note 144, at 477. For similar views, see Richard A. H. Vary, *Arbitration of FRAND Disputes in SEP Licensing*, WORLD TRADEMARK REV. (Mar. 11, 2021) ("There is a perception that some U.S. courts . . . and the Chinese courts will award lower royalty rates and be sympathetic to implementers").



determining damages in infringement litigation and in the broader context of licensing negotiations that take place “in the shadow” of potential litigation.

Following the court’s determination of the IDC/Huawei litigation, the Guangdong High Court published an opinion piece that appears to endorse the use of SEP litigation as a vehicle for promoting geopolitical purposes (which, as noted above, had already been suggested in the court’s opinion). In the article, entitled “A Battle Across the Pacific Ocean,” the author asserts that Chinese firms are compelled to pay “excessive” royalties to foreigners and that this royalty burden impedes growth by Chinese firms.<sup>171</sup> The author concludes that for “Chinese companies to make a revival, there is only one road to take: strengthen our capacity for innovation, and only by gaining control over SEPs can Chinese companies avoid being ‘led by the nose[.]’”<sup>172</sup> In pursuit of this objective, the author suggested that Chinese competition law could provide an effective tool and attributes this view to the chief judge of the court that had adjudicated the case: “Qui Yongqing, the Chief Judge [of the Guangdong Higher People’s Court] believes that Huawei’s strategy of using anti-monopoly laws as a countermeasure is worth learning by other Chinese enterprises. Qui suggests that Chinese should bravely employ anti-monopoly lawsuits to break down technology fortresses and win space for development.”<sup>173</sup> It is hard to imagine a more candid statement of the extent to which geopolitical considerations motivate at least some Chinese courts’ determination of SEP litigations.

### 3. *Extra-Territorial Jurisdiction and Anti-Suit Injunctions*

In the most recent development in SEP infringement litigation, Chinese courts have taken actions to establish themselves as the exclusive global jurisdiction to adjudicate disputes between SEP owners and implementers. Chinese courts have pursued this objective through three tools: (1) anti-suit injunctions (ASIs) that prevent parties from seeking recourse (or seeking certain types of recourse) in foreign courts, (2) reasonable royalty orders that purport to apply globally, and (3) choice of law rulings that subject FRAND disputes to Chinese law. Given the Chinese market’s large share of the global wireless device market, this multi-pronged strategy enables Chinese courts to

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171. David L. Cohen & Douglas Clark, *China’s Anti-Monopoly Law as a Weapon Against Foreigners*, IAM (Nov/Dec 2018), at 51–57. See also U.S. CHAMBER OF COM., *supra* note 9, at 63 n.257 (citing Lin Jinbiao, *A Battle Across the Pacific Ocean: Conclusion of Trial by the Higher People’s Court of Guangdong Province of the Case of Anti-Monopoly Dispute between Huawei and IDC Regarding Abuse of Market Dominance*, PEOPLE’S COURT NEWS (Oct. 29, 2013)).

172. Cohen & Clark, *supra* note 171, at 51–57.

173. *Id.*

exert influence over the worldwide price of technology inputs for the benefit of local manufacturers. Some Chinese policymakers explicitly acknowledge the use of ASIs for mercantilist purposes, as illustrated by the reported statement of a Chinese judge (who had adjudicated several SEP decisions) characterizing ASIs as a tool to assist China “to build the main battlefield for foreign-related dispute resolution.”<sup>174</sup> These views align in turn with statements attributed to President Xi Jinping, in which he has called on several occasions for the extraterritorial application of Chinese law (and IP law in particular) for geopolitical purposes.<sup>175</sup>

In 2014, as described previously, a Chinese court held that IDC, a SEP owner, had violated competition law by pursuing an exclusion order at the ITC and filing an infringement suit against Huawei in U.S. federal district court.<sup>176</sup> In connection with this ruling, the court also held that IDC’s FRAND commitment to the SDO would be interpreted under Chinese law,<sup>177</sup> an approach that stands in contrast to courts in other jurisdictions, which have typically interpreted a FRAND commitment under the law that governs the relevant SDO. (In this case, ETSI, the relevant SDO, was established under French law and courts in the United States, United Kingdom, Japan, and Korea have applied French law when adjudicating disputes involving FRAND commitments made to ETSI.<sup>178</sup>) The Chinese court’s unilateral choice of local law effectively converted the parties’ litigation into a dispute to be resolved exclusively in Chinese courts and subject to Chinese law.

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174. Mark Cohen, *Unwired Planet and the Role of Chinese Courts: A Perspective from Shenzhen*, CHINA IPR (Jan. 18, 2021), <https://www.chinaipr.com/2021/01/18/unwired-planet-and-the-role-of-chinese-courts-a-perspective-from-shenzhen/>.

175. See Link et al., *supra* note 10, at 4–5 (referencing statement by President Xi Jinping in 2018 stating that “[i]n foreign struggles, we must take up legal weapons, occupy the commanding heights of the rule of law, and dare to say no to spoilers and disrupters globally”), and at 8 (noting that official Chinese state media reports that President Xi Jinping has called for promoting “the construction of a legal system applicable outside the jurisdiction of China”). For a statement by President Xi Jinping promoting the extraterritorial application of Chinese IP laws, see REPORT TO CONGRESS OF THE U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION 197 (Nov. 2022), [https://www.uscc.gov/sites/default/files/2022-11/2022\\_Annual\\_Report\\_to\\_Congress.pdf](https://www.uscc.gov/sites/default/files/2022-11/2022_Annual_Report_to_Congress.pdf) [hereinafter REPORT TO CONGRESS 2022] (citing Xi Jinping, *Comprehensively Strengthen Intellectual Property Protection Work to Stimulate Innovation Vitality and Promote the Construction of a New Development Pattern*, Qiushi (Jan. 31, 2021). Translation).

176. See *supra* note 165 and accompanying text.

177. Gao, *supra* note 144, at 462.

178. King Fung Tsang & Jyh-An Lee, *Unfriendly Choice of Law in FRAND*, 2019 VA. J. INT’L L. 221, 223–24 (2019).

The Chinese court's decision in the Huawei/IDC litigation constituted an implicit ASI insofar as it signaled that parties may be subject to competition-law liability by initiating outside China a concurrent infringement action against China-based entities. This was a precursor to the use of explicit ASIs by Chinese courts in SEP-related litigation (known formally as an “act preservation” or “behavior preservation” order under Chinese law<sup>179</sup>).<sup>180</sup> As shown in the Table below, during 2020 and early 2021, Chinese courts considered six petitions for ASIs to bar certain SEP owners from seeking relief against the alleged infringer in courts outside China.<sup>181</sup> In all but one case the petitioner for the ASI order was a China-based device producer, and in all cases the counterparty was a SEP owner that had brought an infringement suit against the petitioner outside China.<sup>182</sup> In all but one case (involving an ASI petition by Lenovo, a China-based device producer) the petition was granted.

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179. Zhonghua Renmin Gongheguo Minshi Susong Fa [Civil Procedure Law of the People's Republic of China] (promulgated by the Standing Comm. Nat'l People's Cong., Apr. 9, 1991, amended June 27, 2017, effective July 1, 2017), art. 100.

180. The next three paragraphs are informed by Cohen, *supra* note 75; Adam Houldsworth, Jacob Schindler, Joff Wild & Bing Zhao, *The EU WTO Patent Attack on China Explored from Every Angle*, IAM (Mar. 2, 2022), [https://www.iam-media.com/frand/the-eu-wto-patent-attack-on-china-explored-from-every-angle?utm\\_source=IAM%2BWeekly%";](https://www.iam-media.com/frand/the-eu-wto-patent-attack-on-china-explored-from-every-angle?utm_source=IAM%2BWeekly%) Yu et al., *supra* note 51; Yang Yu & Jorge L. Contreras, *Will China's New Anti-Suit Injunctions Shift the Balance of Global FRAND Litigation?*, PATENTLY-O (Oct. 22, 2020), <https://patentlyo.com/patent/2020/10/contreras-injunctions-litigation.html>.

181. The cases are: Xiaomi Tongxin Keji Youxian Gongsi YuJiaohu Shuzi Gongsi Biaozhun Biyao Zhuanli Xuke Feilu Jiufen An [Xiaomi Commc'n Tech. Co. v. Interdigital Tech. Corp.], 2020 E 01 Zhi Min Chu No. 169-1 (Wuhan Interm. People's Ct. Sept. 23, 2020); Xiapu Zhushi Huishe Yu OPPO Guangdong Yidong Tongxin Youxian Gongsi Biaozhun Biyao Zhuanli Xuke Jiufen An [Sharp Corp. v. OPPO Guangdong Mobile Telecomms. Co.], 2020 Yue 03 Min Chu No. 689-1 (Shenzhen Interm. People's Ct. Dec. 3, 2020); Sanxing Dianzi Zhushihuishe Yu Ailixin Gongsi Biaozhun Biyao Zhuanli Xukefei Jiufen An [Samsung Elecs. Co. v. Telefonaktienbolaget LM Ericsson], 2020 E 01 Zhi Min Chu No. 743 (Wuhan Interm. People's Ct. Dec. 25, 2020); Huawei Jishu Youxian Gongsi Yu Kangwensen Wuxian Xuke Youxian Gongsi Queren Bu Qin Hai Zhuanliquan Jiufen An [Huawei Techs. Co. v. Conversant Wireless Licensing S.A.R.L.], 2019 Zuigao Fa Zhi Min Zhong 732, 733, 734-1 (Sup. People's Ct. Aug. 28, 2020).

181. Yu et al., *supra* note 51, at 1578–80.

182. For discussion, see Cohen, *supra* note 75; EUR. COMM'N, EU CHALLENGES CHINA AT THE WTO TO DEFEND ITS HIGH-TECH SECTOR (2022), [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_1103](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1103).

**Table 3. Reported Anti-Suit Injunctions Sought in SEP Litigations in Chinese Courts (2020-Present)**

Month/Year	SEP Owner	Alleged Infringer (HQ location)	ASI granted by Chinese court?	Location of foreign litigations
Aug. 2020	Conversant (United States)	Huawei (China)	Y	Germany
Sept. 2020	InterDigital (United States)	Xiaomi (China)	Y	Germany, India
Sept. 2020	Conversant (United States)	ZTE (China)	Y	Germany
Oct. 2020	Sharp (Japan)	Oppo (China)	Y	Germany, India, Japan
Dec. 2020	Ericsson (Sweden)	Samsung (Korea)	Y	Belgium, Germany, Netherlands, United States
Jan. 2021	Nokia (Finland)	Lenovo (China)	N	Germany

Sources: Cohen, *China's Practice of Anti-Suit Injunctions*, *supra* note 75; European Union, *supra* note 182; Igor Nikolic, *Global Standard Essential Patent Litigation: Anti-Suit and Anti-Anti-Suit Injunctions*, Working Paper (Robert Schuman Centre for Advanced Studies RSC 2022/10, Florence School of Regulation); Yu et al., *supra* note 51, at 1588; Colangelo and Torti, *see infra* note 193.

In one proceeding involving Conversant, a SEP owner, Huawei sought an ASI in the SPC on the same day that Conversant had been granted an injunction in its patent infringement litigation against Huawei and ZTE in a German court. The ASI petition, which targeted specifically the German litigation, was granted within 24 hours, enforced by a penalty of RMB one

million per day (approximately \$140,000).<sup>183</sup> ZTE also petitioned successfully for an ASI against Conversant in a lower Chinese court.<sup>184</sup> It is worth noting that the German court had determined a FRAND licensing rate in the Conversant litigation that was 18.3 times the rate determined by a lower Chinese court,<sup>185</sup> so this appears to be a case in which Chinese courts intervened with the effect of reducing substantially the royalty obligation borne by a local device manufacturer. In an ASI petition brought by Xiaomi, a China-based device producer, Xiaomi sought an injunction barring IDC from enforcing an injunction in connection with an infringement suit that IDC had filed against it in India. The Chinese court granted the petition, issuing an order barring IDC from seeking injunctive relief or a FRAND rate determination from any other court in the world while the Chinese proceeding (initiated by Xiaomi to secure a FRAND rate determination) was ongoing, enforced by a penalty of one million RMB per day.<sup>186</sup> By operating on a worldwide basis, the ASI petition departed both from the ASI that had been issued in the *Conversant v. Huawei* decision and the ASIs that had been issued by U.S. courts in prior SEP litigations.<sup>187</sup> A statement from the court described explicitly the mercantilist objectives behind this decision, explaining that the decision to issue an ASI against IDC “effectively safeguard[ed] my country’s high-tech enterprises’ participation in intellectual property rights in transnational competition . . . .”<sup>188</sup> This is by admission a case in which the judicial system has been deployed for purposes of global trade strategy.

Consistent with this geopolitical approach, the SPC has issued statements endorsing lower courts’ issuance of ASIs for the purpose of setting a global royalty rate, as determined under Chinese law. In 2021, the Intellectual Property Tribunal of the SPC affirmed the right of Chinese courts in SEP licensing disputes to set FRAND royalty rates on a global basis. The ruling was made in the context of a dispute in which Sisvel, a patent licensing intermediary, had sued Oppo, a China-based handset producer, in the U.K. for

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183. Yu et al., *supra* note 51, at 1578–80. Dollar amount calculated using current exchange rate (as of March 7, 2023).

184. *Id.* at 1580.

185. Mark Cohen, *Three SPC Reports Document China’s Drive to Increase its Global Role on IP Adjudication*, CHINA IPR (May 5, 2021), <https://chinaipr.com/2021/05/05/three-spc-reports-document-chinas-drive-to-increase-its-global-role-on-ip-adjudication/>.

186. Yu et al., *supra* note 51, at 1581–82.

187. *See id.*, at 1599 n.345.

188. Cohen, *supra* note 75 (citing Ke Xuwen & Lu Ming, *By the establishment of Intellectual Property Courts and Quick Trial of Technical Cases involving ‘Bottlenecks’, the Hubei Courts have Organized an Intellectual Property Network*, HUBEI DAILY (Oct. 27, 2021), <https://hubeigy.chinacourt.gov.cn/article/detail/2021/10/id/6333102.shtml>).

patent infringement, which led Oppo to bring an action for a FRAND rate-setting determination in a Chinese court.<sup>189</sup> In 2022, the SPC recognized the decisions in *Huawei v. Conversant* and *Oppo v. Sharp* to issue ASIs as two of the 10 “big, typical IP cases” of the year, an action that signals to other courts that these cases should be viewed as a form of guidance or quasi-precedent.<sup>190</sup> As described by Mark Cohen, the language used by the SPC in endorsing these cases conveys an intent to make use of the judicial apparatus as a mechanism for engineering royalty rates in the global market for SEP royalty rates. Cohen writes: “The SPC . . . describes this case [*Oppo v. Sharp*] as ‘providing strong judicial guarantees for enterprises to fairly participate in international market competition’ and considers these cases [*Oppo v. Sharp* and *Huawei v. Conversant*] to be indications of the transformation of the court from a ‘follower of property rights rules’ into a ‘guide of international intellectual property rules’ and that it is of ‘great significance.’”<sup>191</sup>

To be sure, courts in the United States, United Kingdom, and France have also issued ASIs in connection with SEP infringement litigations<sup>192</sup> and, in the U.S. and U.K. litigations, did so prior to the use of ASIs by Chinese courts.<sup>193</sup>

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189. Luke Maunder, *Sisvel Anti-Trust Complaint Can Proceed, Rules Supreme People’s Court of the PRC*, BRISTOWS, (Apr. 8, 2021), <https://inquisitiveminds.bristows.com/post/102gv73/sisvel-anti-trust-complaint-can-proceed-rules-supreme-peoples-court-of-the-prc>. In September 2022, the Supreme People’s Court reaffirmed this principle in the Nokia/Oppo litigation, see Aaron R. Winger, *China’s Supreme People’s Court Again Affirms Right to Set Global FRAND Rates in Standard Essential Patents in Nokia/OPPO Case*, SCHWEGMAN, LUNDBERG WOESSNER (Sept. 18, 2022), <https://www.slwip.com/resources/chinas-supreme-peoples-court-again-affirms-right-to-set-global-frand-rates-in-standard-essential-patents-in-nokia-oppo-case/>.

190. EUR. COMM’N, *supra* note 182, at 4.

191. *Id.*

192. The U.S. cases are: *Microsoft Corp. v. Motorola, Inc.*, 871 F. Supp. 2d 1089 (W.D. Wash. 2012) (issuing an ASI precluding enforcement of an injunction secured by Motorola in a German court); *TCL Commc’ns Tech Holdings. v. Ericsson Incorporation*, No. SACV14-00341 JVS (DFMx) (C.D. Cal. June 29, 2015) (granting injunction, in part, of TCL’s Motion for Anti-Suit Injunction, in which the court granted an ASI barring the patent holder from pursuing infringement claims against the defendant in courts in six foreign jurisdictions, on the ground that both parties sought a global resolution of the dispute in the U.S. federal court); and *Huawei Huawei Techs., Co, Ltd v. Samsung Elecs. Co, Ltd.*, 340 F. Supp. 3d 934 (N.D. Cal. 2018) (issuing an injunction barring Huawei from enforcing an injunction it had secured from a Chinese court against Samsung). For a litigation that took place in the U.K. and France, in which ASIs were issued to preclude further judicial action in the United States, see *IPCom v. Lenovo* [2019] EWHC 3030 (Pat.); Cour d’appel [CA] [regional court of appeal] Paris, Mar. 3, 2020, 19/21426 (France).

193. For a detailed history, see *generally* Guiseppa Colangelo & Valerio Torti, *Anti-Suit Injunctions and Geopolitics in Transnational SEP Litigation*, EURO. J. LEGAL. STUD. (forthcoming 2023)

However, in contrast to Chinese practice to date, courts outside China often reject ASI petitions in SEP infringement litigation: at least four U.S. courts<sup>194</sup> and two U.K. courts have done so.<sup>195</sup> The determinations by courts in the United States and United Kingdom have generally been based on long-established legal principles that instruct courts to make a tradeoff between comity principles, designed to reduce frictions with litigation in other domestic or foreign courts involving the same or similar issues, and litigation efficiency, which may recommend consolidating determination of a legal issue in a single venue.<sup>196</sup> An illustrative example of this common-law reasoning is provided by a 2021 decision by the U.S. Court of Appeals for the Second Circuit in dismissing antitrust claims of collusion among China-based Vitamin C producers on grounds of deference to Chinese law (which had purportedly compelled the producers to collude for export purposes).<sup>197</sup>

By contrast, Chinese Civil Procedure Law does not require deference to a foreign court's determination in a parallel proceeding nor does it require consideration of international comity principles in determining whether to issue an ASI.<sup>198</sup> Moreover, there are indications that Chinese courts' sudden and frequent use of ASIs during 2020 and early 2021 may have reflected a policy decision by Chinese government leadership. In a 2020 speech to Chinese Community Party leaders, President Xi Jinping stated: "Intellectual property is a core factor for competitiveness on the international stage, as well as a focal point of international dispute. We need to have the courage and the capacity to stand up for ourselves."<sup>199</sup> Consistent with this view, the SPC has

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194. *Vringo Inc. v. ZTE Corp.*, No. 14-cv-4988, 2015 WL 3498634 (S.D.N.Y. June 3, 2015); *Apple Inc. v. Qualcomm Inc.*, No. 3:17-cv-00108, 2017 WL 3966944 (S.D. Cal. Sept. 7, 2017); *Optis Wireless Tech., LLC v. Huawei Techs. Co.*, No. 2:17-cv-00123, 2018 WL 3375192 (E.D. Tex. July 11, 2018).

195. *Conversant Wireless Licensing S.A.R.L. v. Huawei Techs. Co.* [2018] EWHC (Ch) 2549 [10], [12] (Eng.); *Nokia Techs. OY v. OPPO Mobile UK Ltd and Others* [2021] EWHC 2952 (Pat.).

196. On the standard used in addressing ASI petitions in U.S. civil litigation, see *E & J Gallo Winery v. Andina Licores S.A.*, 446 F.3d 984, 989–91 (9th Cir. 2006); *In re Unterweser Reederei GMBH*, 428 F.2d 888, 890 (5th Cir. 1970), *aff'd per curiam*, 446 F.2d 907 (5th Cir. 1971) (en banc), *vacated*, 407 U.S. 1 (1972).

197. *In Re Vitamin C Antitrust Litig.*, 8 F.4th 136 (2d Cir. 2021).

198. Mark A. Cohen, *Draft Policy Statement on Licensing Negotiations and Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments* 13, REGULATIONS.GOV (Feb. 3, 2022), <https://www.regulations.gov/comment/ATR-2021-0001-0118>. However, other commentators have expressed the view that Chinese courts determine whether to issue an ASI based on factors that are similar to the factors used by U.S. courts, see Yu et al., *supra* note 51, at 1579–80.

199. Woo & Michaels, *supra* note 17.

specifically advocated that Chinese courts adopt ASIs for the purpose of defending national sovereignty and promoting national competitiveness in the global marketplace<sup>200</sup>—geopolitical factors that would not typically be viewed as pertinent considerations in a judicial regime characterized by robust rule-of-law and division-of-powers principles. For these reasons, Mark Cohen has argued that Chinese ASIs should be distinguished from ASIs issued by Western courts since Chinese courts use them as a “tool by a non-independent . . . judiciary at the urging of China’s political leadership.”<sup>201</sup>

More recently, there are indications that Chinese policymakers are effectively shifting the use of ASIs or equivalents from the judiciary, operating largely under patent law, to regulators, operating through competition law. In January 2021, a Chinese court declined to grant an ASI sought by Lenovo, a China-based device producer that had been sued for SEP infringement by Nokia in Germany and the US<sup>202</sup> (litigations which the parties resolved through a global settlement in April 2021, following issuance of an injunction by a German court in September 2021<sup>203</sup>). Yet the denial of the ASI does not appear to signal any change in Chinese policymakers’ resistance to robust SEP enforcement. Subsequent to the Chinese court’s denial of an ASI to Lenovo, SAMR issued proposed IPR Abuse Rules that prohibit a firm with a dominant market position from violating the FRAND commitment in connection with licensing SEPs. Following these rules, such behavior could include “unfairly request[ing] the court or relevant department to make or issue a judgment . . . prohibiting the use of relevant intellectual property rights, forcing the licensee to accept unfairly high prices or other unreasonable restrictions . . . .”<sup>204</sup> Additionally, the rules contemplate that the regulator may seek the equivalent of an ASI through administrative action.<sup>205</sup>

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200. Yu et al., *supra* note 51, at 1599–1600 (citing statement by Supreme People’s Court that “[t]he internationalization trend surrounding ASIs profoundly reflects the competition among major powers for jurisdiction over international disputes and for dominance in rulemaking. The use of ASIs is an important tool for preventing and reducing the abuse of parallel litigation and safeguarding national judicial sovereignty. Without ASIs, Chinese courts will be put in a passive position in the international judicial competition”).

201. Mark Cohen, *The Pushmi-Pullyu of Chinese Anti-Suit Injunctions and Antitrust in SEP Licensing*, CHINA IPR (Oct. 19, 2022), <https://www.chinaipr.com/2022/07/31/the-pushmi-pullyu-of-chinese-anti-suit-injunctions-and-antitrust-in-sep-licensing/>.

202. *Id.* (referring to *Lenovo v. Nokia* decision by Chinese Supreme People’s Court).

203. *Nokia Settles Patent Fight with Lenovo*, REUTERS (Apr. 6, 2021), <https://www.reuters.com/article/us-nokia-patent-lenovo/nokia-settles-patent-fight-with-lenovo-idUSKBN2BU0F7>.

204. Cohen, *supra* note 201 (citing draft 2022 SAMR IP Abuse Rules, Art. 16).

205. *Id.* (citing draft 2022 SAMR IP Abuse Rules, Arts. 21–22).



By admission, Chinese competition regulators seek to apply competition law extraterritorially to advance China's geopolitical interests. In a public statement made in 2012, the head of a Chinese competition regulatory agency (MOFCOM) said so explicitly:

To protect China's public interest MOFCOM should leverage the extra-territorial effect of the Anti-Monopoly Law . . . . After four years of antitrust enforcement, we found that extraterritorial jurisdiction plays an important and irreplaceable role in maintaining effective competition in the Chinese market and safeguarding China's national economic benefit[s].<sup>206</sup>

In a vivid example,<sup>207</sup> in 2013 Chinese competition authorities delayed approval of a merger of Glencore and Xstrata, leading Swiss mining and commodity trading companies, which each represented less than two percent of the relevant global market (copper concentrate), and 9% and 3.1%, respectively, of the Chinese market in the same product. While this falls well below the threshold at which competition regulators typically investigate a merger, the Chinese authorities conditioned approval on the sale of a copper mine owned by Glencore in Peru, including approval of the specific buyer. The merger received clearance from the Chinese authorities once an agreement had been signed to sell the mine to a consortium comprised primarily of Chinese state-owned enterprises and other entities controlled by those enterprises. Just as China has deployed competition law extraterritorially to advance its interests in securing control of vital natural resources, so too it appears willing to do the same to advance its interest in securing favorable terms of access to technologically vital resources.

## V. MERCANTILIST ANTITRUST AND THE GLOBAL INNOVATION ECOSYSTEM

The approach of Chinese regulators and courts to the legal treatment of IP rights in wireless markets illustrates how the potent remedies of competition and antitrust law can be used for industrial-trade purposes that lie outside, and even run counter to, the generally understood objectives of this body of law. Chinese regulators and courts have used patent and competition law as a mechanism for weakening property rights in wireless technology markets and harnessing the judicial and regulatory apparatus to influence

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206. U.S. CHAMBER OF COM., *supra* note 9, at 26 (citing Lu Yanchun & Liu Jan, *A Preliminary Discussion of Rules Regarding IPR Enforcement*, LEGAL DAILY (Mar. 19, 2014)).

207. The remainder of this paragraph relies on information in U.S. CHAMBER OF COM., *supra* note 9, at 33–35.

royalty rates to the advantage of implementers over innovators. These actions have significant effects on licensing and other transactions involving wireless SEPs, potentially encompassing every industry in which wireless technologies are deployed, ranging from mobile communications to automobiles and a myriad of other markets.

In a legal system in which rule-of-law constraints are weak, the division-of-powers principle is not recognized, and competition law appears to be widely viewed as an extension of industrial policy,<sup>208</sup> it is unsurprising that Chinese regulators and courts would be willing to deploy patent and competition law to promote the state's mercantilist interest in mitigating the Chinese economy's IP and technology deficit in wireless communications. From a political economic perspective, however, it remains somewhat surprising that regulators in the United States and European Union have generally maintained the rigid view that wireless SEP markets operate under a perpetually high risk of market failure when more than two decades of market performance and a substantial body of empirical evidence indicate that precisely the opposite is the case.<sup>209</sup> This mismatch between regulators' theories of market failure and the *actual* success of wireless markets may explain why regulators and device producers have a poor track record when compelled to defend those theories in court that apply appropriately demanding rules of evidence.

In two SEP infringement litigations before U.S. courts, judges declined to instruct juries to take into account patent holdup or royalty stacking effects when determining damages, on grounds of insufficient factual evidence.<sup>210</sup> This follows instruction on this specific point from the Court of Appeals for the Federal Circuit, which has stated that "abstract recitations of royalty stacking theory . . . are insufficiently reliable."<sup>211</sup> In both the United States and the European Union, regulators suffered resounding defeats in court when bringing monopolization and abuse of dominance claims, respectively, against

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208. See U.S. CHAMBER OF COM., *supra* note 9.

209. On this evidence, see *supra* notes 67–69 and accompanying text.

210. See, e.g., *Ericsson Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1209, 1233–34 (Fed. Cir. 2014) (declining to instruct jury to take into account holdup and stacking effects when calculating damages, without actual evidence of such effects in a particular case); *Ericsson Inc. v. TCL Commc'n Tech. Holdings, Ltd.*, No. 2:15-cv-00, 2018 WL 2149736 (E.D. Tex., May 10, 2018) (declining to instruct jury to take into account stacking effects when calculating damages, due to lack of specific evidence of such effects).

211. *Commonwealth Sci. & Indus. Rsch. Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1302 (Fed. Cir. 2015).

Qualcomm, one of three lead innovators in the global wireless market.<sup>212</sup> In the European Union and the United Kingdom, courts have also recognized that a quasi-prohibition on injunctive relief for SEP owners induces opportunistic stalling tactics by infringers who face little risk of being denied access to the SEP owner's technology and have the resources to fund costly and protracted litigations. Those courts have held that an injunction for a SEP owner may be appropriate when there is sufficient evidence that the infringing party is engaging in "patent holdout",<sup>213</sup> illustrating the important role that courts can play in constraining regulatory fiat in jurisdictions with a robust division of powers between the executive and judicial branches.

The Chinese legal system does not operate under these constraints and hence has been able to deploy a comprehensive approach, across regulatory agencies and courts, to minimize input costs for local device producers by constraining SEP owners' enforcement and licensing capacities. Yet the Chinese government does have at least formal commitments under the international "TRIPS" agreement to supply a certain level of patent protection and to refrain from favoring domestic entities in enforcing IP rights.<sup>214</sup> Chinese regulators' and courts' treatment of SEPs almost certainly depart from these principles by consistently weakening patent protection for the benefit of domestic producers over foreign IP owners. That is precisely the view expressed in a complaint filed in February 2022 by the European Union against China at the World Trade Organization (WTO), in which the European Union asserted that China had violated its commitments under WTO rules (specifically, the obligations set forth in Articles 63.1 and 63.3 of the "TRIPS" agreement) by issuing ASIs against foreign SEP owners who had brought

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212. *See generally* FTC v. Qualcomm Inc., 969 F.3d 974 (9th Cir. 2020) (rejecting all antitrust claims and rescinding the district court's order); *see also* Case T-235/18, Qualcomm, Inc. v. European Commission, ECLI:EU:T:2022:358 (June 15, 2022) (annulling fine of 997 million euros imposed by regulator and finding no violations of competition law).

213. *Unwired Planet v. Huawei* [2020] UKSC 37, [61] ("The possibility of the grant of an injunction . . . is a necessary component of the balance which the [standard-development organization's] IPR Policy seeks to strike, in that it is this which ensures that an implementer has a strong incentive to negotiate and accept FRAND terms for use of the owner's SEP portfolio"); *Case C-170/13, Huawei Technologies Co. Ltd. v. ZTE Corp. and ZTE Deutschland GmbH*, ECLI:EU:C:2015:477 (July 16, 2015) ("[O]n the grounds of equality of treatment between the beneficiaries of licenses for, and the infringers in relation to, a given product, the proprietor of the SEP ought to be able to bring an action for a prohibitory injunction").

214. AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS, *supra* note 22, at Art. 3 ("Each Member shall accord to the nationals of other Members treatment no less favorable than that it accords to its own nationals with regard to that protection of intellectual property . . .").

patent infringement suits against Chinese device producers in foreign courts.<sup>215</sup> Thereafter the United States, Canada, and Japan requested to join the European action.<sup>216</sup> (Additionally, in March 2022, five U.S. Senators introduced a bill that would assess penalties against entities that seek to enforce in U.S. courts ASIs issued by a foreign court.<sup>217</sup>) In December 2022, the European Union submitted a request to convene a WTO panel to resolve the matter, which the European Union had been able to achieve in consultations with the Chinese government.<sup>218</sup>

As a matter of global innovation policy, it may be objected that the SEP policy preferences expressed by device producers, Chinese governmental entities, and U.S. and E.U. regulators on the one hand, and the SEP policy preferences expressed by chip-design innovators and certain courts and other governmental entities in the European Union and United States on the other hand, are a matter of indifference. If these are simply disputes about “slicing the pie,” then SEP policy debates, and the regulatory and judicial venues in which those debates are held, reduce to distributive gamesmanship without any efficiency implications. That could only be true, however, at any particular “snapshot” in time when a particular technology has already been developed. Over any longer time frame, these disputes are not only about slicing the economic pie but rather, about determining the institutional rules of the game that impact the total size of the pie over time. A truncated property-rights regime in which regulators and courts regularly intervene to adjust royalty rates in favor of licensees impedes the ability of market forces to determine the prices of technology assets—one of the principal (although sometimes overlooked functions) of the patent system. Given the absence of evidence showing that patent holdup occurs systematically<sup>219</sup> and the growing evidence of patent holdout in the absence of injunctive relief,<sup>220</sup> these regulatory

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215. EUR. COMM’N, *supra* note 182, at 7–8.

216. *China – Enforcement of Intellectual Property Rights*, WTO (Mar. 28, 2023), [https://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds611\\_e.htm](https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds611_e.htm).

217. S. 3772 Defending American Courts Act, 117th Cong. § 2 (2022).

218. Request for the Establishment of a Panel by the European Union, *China – Enforcement of Intellectual Property Rights*, WTO Doc. WT/DS611/5 (Dec. 9, 2022).

219. *See supra* notes 67–69 and accompanying text.

220. For circumstantial evidence, see Jonathan M. Barnett & David Kappos, *Restoring Deterrence: The Case for Enhanced Damages in a No-Injunction Patent System*, in *5G AND BEYOND: INTELLECTUAL PROPERTY AND COMPETITION POLICY IN THE INTERNET OF THINGS* (Jonathan M. Barnett & Sean M. O’Connor eds, 2023 forthcoming); Bowman Heiden & Nicolas Petit, *Patent “Trespass” and the Royalty Gap: Exploring the Nature and Impact of Patent Holdout*, 34 SANTA CLARA HIGH TECH. L. J. 179, 221–24 (2018); Richard A. Epstein & Kayvan Noroozi, *Why Incentives for “Patent Holdout” Threaten to Dismantle FRAND, and Why It Matters*, 32 BERKELEY TECH. L. J. 1381, 1419–1420 (2017).

interventions are difficult to reconcile with the widely recognized objectives of competition law in preserving the integrity of the pricing mechanism that underlies a market-based economy. The deployment by Chinese, E.U., and U.S. regulators of patent and competition law to address the purported risk of holdup and stacking—motivated in China’s case by mercantilist objectives—may depress the input costs of device producers, potentially resulting in a short-term gain for some consumers. However, this dilution of IP protections risks far larger longer-term losses by placing at risk the incentive and funding structures that sustain the billions of dollars of investment in research and development activities without which the global wireless technology ecosystem cannot move forward.

## VI. CONCLUSION

The legal treatment of SEPs in China reflects a strategic effort to use the powerful apparatus of competition and patent law to reset the terms of trade in the global market for wireless technology inputs. This strategy has relied for its intellectual foundation on patent holdup and royalty stacking models of market failure developed by U.S. academics and has borrowed legal doctrines from E.U. competition and U.S. antitrust law, which have then been applied expansively by Chinese courts and regulators. Part of a larger goal of achieving technological self-sufficiency and leadership, this mercantilist strategy seeks to reengineer market pricing—both domestically and globally—in wireless technology for purposes of favoring domestic device producers over foreign technology suppliers. This objective is incompatible with the general understanding of competition law as a mechanism for removing distortions from the playing field so that competitive forces can determine winners and losers on their merits. While this strategy promotes the narrow and short-term economic interests of net-IP-user entities and jurisdictions, it is unlikely to promote the broader and longer-term interest in preserving the incentive, funding, and transactional structures behind the R&D and commercialization activities that drive technological advances in the global wireless ecosystem.

