Trademarks and patents in China:

The impact of non-market factors on filing trends and IP systems

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Acknowledgments:

We thank colleagues in the USPTO's Office of Policy and International Affairs for helpful drafting suggestions, research, and analysis. Mary Critharis and Andrew A. Toole provided especially insightful comments.

Introduction

A growing number of suspect trademark applications filed in the United States from China prompted the U.S. Patent and Trademark Office (USPTO) to study the reasons for this development. The volume of trademark and patent applications in China is the highest in history. In 2019, relevant authorities in China received 7.8 million trademark applications and 1.5 million utility patent applications, accounting for nearly half of global totals. These numerical trends have attracted considerable attention.[1] In addition to the market factors that normally drive application volume in any country, China's filings are influenced by non-market factors such as subsidies, government mandates, bad-faith trademark applications, and defensive countermeasures. This paper examines the reasons for China's increased filings, including the contribution of these non-market factors, and highlights how filing numbers overstate innovation and brand creation. Additionally, this paper explores how patent and trademark filings motivated by non-market factors have affected the USPTO, stretched the capacity of China's patent and trademark examination systems, and cluttered China's registries, which complicates clearance searches and can narrow the scope of available protection.

Trademark and patent application trends in China

In 2019, the China Trademark Office received 7.8 million trademark applications, while the China National Intellectual Property Administration (CNIPA) received approximately 4.3 million patent applications of all types.[2] Internationally, China's filings under the Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks (Madrid Protocol) are rising, as are its filings under the Patent Cooperation Treaty (PCT),[3] which surpassed those of the United States for the first time in 2019.[4]

The magnitude of China's filings is striking when considered in relation to global totals. In terms of trademark applications submitted to domestic authorities around the world in 2019, China received more than half (51.4 percent), when measured by class count[5] (which harmonizes comparisons across jurisdictions).[6] Figure 1 shows that filings in China in 2018 surpassed those of the other members of the so-called TM5 (the five largest trademark offices in the world: China, the United States, South Korea, Japan, and Europe). Madrid Protocol filings by Chinese applicants are growing but are still low compared to China's large domestic filing numbers. According to World Intellectual Property Organization (WIPO) country filing data for 2018, the United States leads in Madrid Protocol filings, followed by Germany, then China.[7]

1 Xinhuanet, "Int'l Community Highly Praises China's Efforts in IP Protection," March 1, 2020, www.xinhuanet.com/english/2020-03/01/c 138832955.htm. See also Hong Xiao, "UN: China Now First in Patent Applications," ChinaDaily.com.cn, April 8, 2020, https://global.chinadaily.com.cn/a/202004/08/WS5e8d2f75a310aeaeeed50b02 1.html, which notes, "China last year became the top source of international patent application filings, surpassing the United States."

2 CNIPA Department of Strategic Planning, Intellectual Property Statistics Briefing 2019, Issue 28, January 3, 2019, 1, www.cnipa.gov.cn/20200203123754249256.pdf (last accessed on Dec. 14, 2020).

3 The Patent Cooperation Treaty does not provide for an international patent but rather for a streamlined application process: applicants can seek patent protection for an invention simultaneously in a number of countries by filing a single international application. Applicants must then enter into the national phase in each country to proceed toward grant of the patent in that country.

4 Stephanie Nebehay, "In a First, China Knocks U.S. from Top Spot in Global Patent Race," Reuters, April 7, 2020, www.reuters.com/article/us-usa-china-patents/in-a-first-china-knocks-u-s-from-top-spot-in-global-patent-race-

5 Some national trademark systems permit an applicant seeking to register a mark in multiple classes of goods to file a single application, whereas other systems require separate applications for each class. To promote comparisons of trademark application activity across different systems, the World International Property Organization (WIPO) provides figures by "class count." See WIPO, World Intellectual Property Indicators 2019 (Geneva: WIPO, 2019), 74, www.wipo.int/edocs/pubdocs/en/wipo pub 941 2019.pdf.

6 WIPO, Intellectual Property Indicators 2019, 7.

7 WIPO, Intellectual Property Indicators 2019, 112, Figure B49.

Figure 1: Trademark filings in TM5 countries and regions, 2018

Source: Reproduced from figure on page 1 of "TM5 Common Statistical Indictors 2018"(the latest available as of this writing), http://tmfive.om/wp-content/upioads/2020/06/CSIGraphstm5 2018.pdf.
Note: CNIPA = China National Intellectual Property Administration; EUIPO = European Union Intellectual Property Office; JPO = Japan Patent Office; KIPO = Korean Intellectual Property Office; USPTO = United States Patent and Trademark Office.

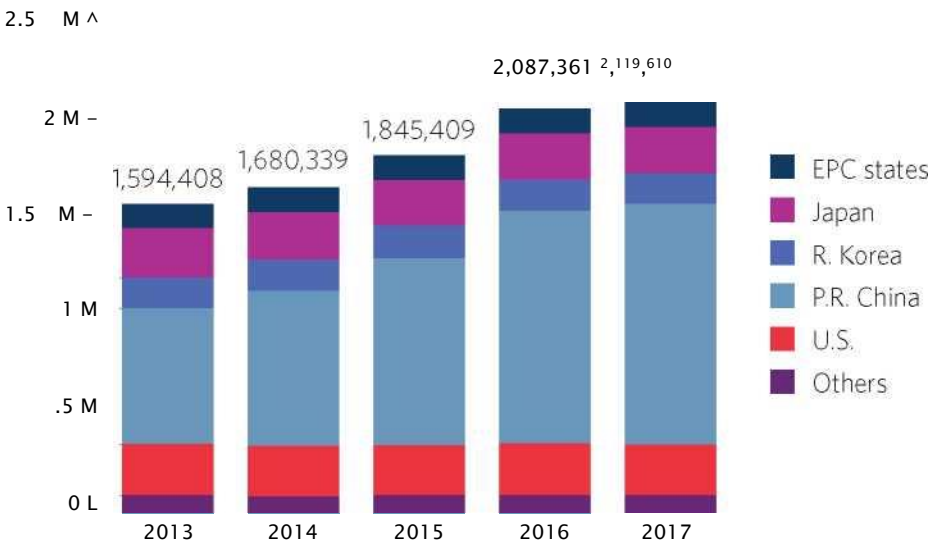
In terms of patent applications, filings for utility model patents[8] and design patents accounted for approximately 64 percent of total patent applications and 82 percent of patent grants in China in 2018.[9] Although applications for utility patents (termed "invention patents" in China) made up only about one-third of all patent applications filed in China in 2018, they still numbered more than 1.5 million and accounted for nearly half (46.4 percent) of utility patent applications filed globally in 2018, according to WIPO data.[10] Figure 2 shows that from 2013 to 2017, China's utility patent filing numbers far exceeded those of the other largest patent offices in the world, including the rest of the IP5 (the United States, Japan, South Korea, Europe) and patent offices in other countries. As noted earlier, China recently accounted for more PCT applications than any other country.

8 China's utility model patents generally undergo limited examination and have a duration of 10 years. See CNIPA, Patent Examination Guidelines, Part I, Chapter 2, Section 11. See also Article 42 of the Patent Law of the People's Republic of China, 2020. In China, an applicant may apply for a utility model patent and an invention patent on the same invention but may ultimately hold only one patent on the invention. See Article 9 of the Patent Law.

9 CNIPA, 2018 Patent Statistics Annual Report: Total Applications/Grants/In Force for Three Kinds of Patents Received from Home and Abroad (Beijing: CNIPA, 2019), www.cnipa.gov.cn/tjxx/jianbao/year2018/a/a1.html (patent application figures); CNIPA, 2018 Patent Statistics Annual Report: Distribution of Domestic and Foreign Patent Applications Authorized Annual Status (Beijing: CNIPA, 2019), www.cnipa.gov.cn/tixx/iianbao/year2018/b/b1.html.

10 WIPO, Intellectual Property Indicators 2019, 7. WIPO also reported that in 2018 the number of China's utility patent applications was "similar in magnitude to the combined total of the offices ranked two through 11." WIPO, "World Intellectual Property Indicators: Filings for Patents, Trademarks, Industrial Designs Reach Record Heights in 2018," press release 838, October 16, 2019, www.wipo.int/press-room/en/articles/2019/article 0012.html.

Figure 2: Utility patent applications filed by IP5 and other countries, 2013-2017



Source: Reproduced from Figure 3.4, IP5 Statistics Report 2018, www.fiveiDoffices.org/statistics/statisticsreDorts/2018edition

Note: EPC = European Patent Convention.

Non-market factors that help drive trademark application numbers

Trademarks confer commercial value to brand owners by distinguishing their goods and services in the marketplace. A trademark may also, by clearly establishing rights in and relating to the mark, facilitate attempts by the brand owner to engage in commercial relationships with others and to access capital. Although these observations hold true in every country, additional non-market considerations drive trademark applications in China. Such considerations include subsidies, government mandates, filers acting in bad faith, and filers employing good-faith countermeasures.

The first of these non-market factors is subsidies. China has reportedly adopted more than 70 sub-national trademark subsidy measures, including measures for domestic and foreign applications and registrations.[11] Because the amount of these subsidies often exceeds the cost of registering a trademark, a rational economic actor in China may choose to pursue a trademark application without any intention to use the mark in commerce.

11 As of July 2019, the USPTO cataloged 77 subnational trademark subsidy measures in China. While some of China's domestic trademark subsidies have since expired or have been replaced with other programs, China is expanding incentives to register trademarks, particularly abroad. See, e.g., Jiangsu Province Opinions on Further Implementing Trademark Strategy (Su Zheng Fa [2010] No. 115); Zhejiang Province Opinions on Further Implementing Trademark Strategy (Zhe Zheng Ban Fa [2014] No. 14); Zhenjiang City Government Opinions on Further Implementing Trademark Strategy (Zhen Zheng Fa [2011] No. 2); CNIPA and State-Owned Assets Supervision and Administration Council of the State Council, "Opinions Regarding Promoting High-Quality Intellectual Property Work by Central Enterprises," February 26, 2020, www.gov.cn/gongbao/content/2020/content 5515287.htm (last accessed on Dec. 14, 2020). See also Josh Gerben, "Massive Wave of Fraudulent US Trademark Filings Likely Caused by Chinese Government Payments," April 4, 2018, www.gerbenlaw.com/blog/chinese-business-subsidies-linked-to-fraudulent-trademark-filings/, which describes a list of trademark subsidies in 20 of China's 32 provinces and notes that "[w] hile many of the policies and subsidy programs have expired/been replaced with other programs, there is evidence of clear incentives to register brands abroad by any means necessary."

Although the USPTO is not aware of public source information indicating the proportion of trademark applications in China that are motivated by subsidies, it has observed the impact of Chinese subsidies granted for foreign trademark applications. After Shenzhen and other cities began offering subsidies for overseas trade applications, the USPTO experienced a surge in fraudulent trademark applications originating in China.

The particulars of the Shenzhen situation are instructive. In 2013, Shenzhen issued operating procedures that allowed applicants to seek a subsidy of RMB 5,000 (approximately $750) for trademark registrations in eligible foreign countries, including the United States.[12] After the USPTO lowered the fee for its lowest-cost, fully electronic applications to $225 in 2015, the cost to file at the USPTO was substantially lower than the amount of the subsidy.[13] In four years (fiscal years 2013–2017), U.S. trademark filings from China increased by 1,264 percent, with applications from Shenzhen accounting for more than 42 percent of applications from China in fiscal year 2017.[14]

On July 18, 2019, then Commissioner for Trademarks Mary Boney Denison testified before a congressional subcommittee that trademark filings from China had increased from "approximately 5,161 applications in fiscal year 2014 to approximately 54,064 in fiscal year 2018" (the latter number was subsequently revised to 58,066).[15] Figure 3 depicts the increase in the number of filings as well as annual percentage growth. Commissioner Denison testified further that "this dramatic rise in applications coincides with the rise in inaccurate and fraudulent claims of use that threaten to undermine the reliability of the trademark register."[16]

An academic study estimated the frequency of fraudulent specimens of use in 2017 trademark applications originating in China and filed at the USPTO, solely in the goods apparel class.[17] According to testimony before a congressional subcommittee by the study's authors, approximately two-thirds of these use-based applications included fraudulent specimens, which suggests that the trademarks were not used in commerce.[18] Perhaps in recognition of the problem, on January 6, 2020, CNIPA announced that China planned to "clean

12 Although the subsidy and the amount of the subsidy in multiple scenarios (and for various intellectual property rights) were announced in 2011, the regulations that allowed applicants to submit applications were not implemented until May 2013. See "Notice of Shenzhen Municipal Market Supervision Bureau on Printing and Distributing the Eight Operational Rules of the Shenzhen Special Fund for Intellectual Property-Patent Application Funding," April 12, 2013, www.szipr s.org.cn/zcfg 65898/xgzc 70319/201410/t20141013 2595113.htm. Article 12 of the operational regulations on trademark subsidies indicates that the operating procedures will be implemented 30 days after the date of promulgation.
For information about the size of the subsidy, see Shenzhen Municipal Finance Committee and the Shenzhen Municipal Administration for Market Regulation, "Shenzhen Municipality's Management Measures Special Fund for Intellectual Property," October 19, 2011, http://sso.sz.gov.cn/pub/szscig/xxgk/zcwi/scjgfg/zscqgl/zscqgf/201110/t20111019 1746929.htm, and the December 8, 2014 update at http://www.szipr s.org.cn/zcfg 65898/xgzc 70319/201410/t20141013 2595113.htm. See also USPTO, "Overview of Trademark Fees," accessed April 17, 2020, www.uspto.gov/trademark/fees-payment-information/overview-trademark-fees.
On October 25, 2019, the Shenzhen Municipal Administration for Market Regulation issued a notice publishing its "Operation Procedures of the Special Fund for Intellectual Property," which lowered the subsidy for registrations in eligible foreign countries, including the United States, to RMB 1,000 (approximately $150). The notice is available at http://qh.sz.gov.cn/sygnan/xxgk/xxgkml/zcfg/szsfg/content/post 6843649.html.

13 USPTO, "Reduction of Fees for Trademark Applications and Renewals," Title 37 Code of Federal Regulations, Pt. 2, January 6, 2015, www.uspto.gov/web/offices/com/sol/og/2015/week01/TOC.htm.

14 The percentage increase is derived from data appearing on page 187, Table 21, of USPTO, FY 2017 Performance and Accountability Report (Washington, DC: USPTO, 2017), www.uspto.gov/sites/default/files/documents/USPTOFY17PAR.pdf. The share of Shenzhen-origin applications in fiscal year 2017 is based on internal USPTO data. Note that this paper does not address the sharp rise in U.S. trademark filings from China during the second half of 2020, which is the subject of ongoing analysis. See, e.g., "China overtakes American brand owners to be largest source of trademark applications at the USPTO: data analysis", Bridget Diakun, Oct. 9, 2020, World Trademark Review, www.worldtrademarkreview.com/ip-offices/china-overtakes-american-brand-owners-be-largest-sources-of-trademark-applications-the-uspto-data-analysis (last accessed on Dec. 18, 2020).

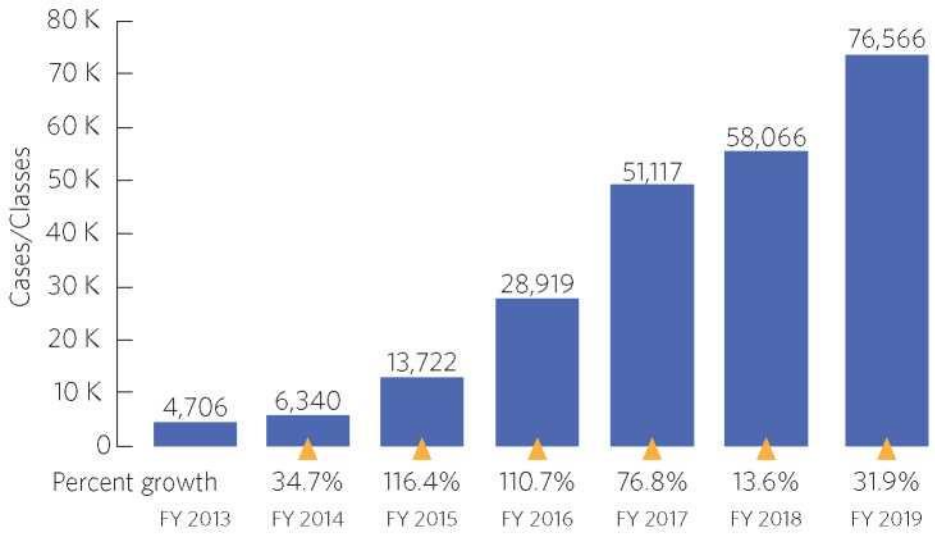
15 "Counterfeits and Cluttering: Emerging Threats to the Integrity of the Trademark System and the Impact on American Consumers and Businesses" (statement of Mary Boney Denison, Commissioner for Trademarks, United States Patent and Trademark Office, before the United States House Subcommittee on Courts, Intellectual Property, and the Internet Committee on the Judiciary), 3, July 18, 2019, https://docs.house.gov/meetings/JU/JU03/20190718/109812/HHRG-116-JU03-Wstate-DenisonM-20190718.pdf.

16 "Counterfeits and Cluttering," 3.

17 Barton Beebe and Jeanne C. Fromer, "Fake Trademark Specimens: An Empirical Analysis" Columbia Law Review Forum 121 (forthcoming), http://dx.doi.org/10.2139/ssrn.3556121.

18 "Fraudulent Trademarks: How They Undermine the Trademark System and Harm American Consumers and Businesses" (testimony of Professors Barton Beebe and Jeanne C. Fromer before the United States Senate, Committee on the Judiciary, Subcommittee on Intellectual Property), 3, 18, December 3, 2019, www.iudiciary.senate.gov/imo/media/doc/Beebe%20Testimony.pdf.

Figure 3: USPTO trademark filings from China and percent growth, FY 2013–FY 2019



Source: Authors calculations based on internal USPTO data.

up" intellectual property subsidies, in part by eliminating large subsidies for trademarks.[19] However, on March 11, 2020, China directed its state-owned enterprises to increase by 50 percent their trademark filings under the Madrid System for the International Registration of Marks.[20] This government mandate is an example of a second non-market factor driving trademark applications, because, in order to meet these targets, China's subnational governments will continue to offer and increase the availability of non-market incentives, particularly for international filings.[21]

A third non-market factor driving the volume of trademark applications in China is the frequency of parties attempting to profit from registering trademarks in bad faith.[22] Bad-faith applicants lack an intention to use marks to distinguish their legitimate goods and services. Marks with no business relevance or associated goodwill lack value and clutter the trademark registry. Certain aspects of China's trademark protection and enforcement framework make it possible for bad-faith applicants to register large numbers of marks in that country. According to legitimate brand owners operating in China, those actors may register marks (1) to "ransom" them to their legitimate owners, (2) to sell, without authorization, goods or services that appear similar to those of their legitimate owners in an effort to "free ride" on the owners' goodwill, or (3) to block the legitimate owners' entry into the Chinese market or thwart the owners' notices to takedown infringing products from e-commerce platforms.[23]

19 CNIPA Commissioner's Work Report, Improving Intellectual Property Management Capacity and Level: Striving to Start a Journey toward a Strong Intellectual Property Country (extract of the report), www.shzgh.org/zscq/mtii/n2513/u1ai24734.html (last accessed on Dec. 14, 2020).

20 CNIPA and State-Owned Assets Supervision and Administration Council of the State Council, "Opinions Regarding Promoting High-Quality Intellectual Property Work by Central Enterprises," February 26, 2020, www.gov.cn/gongbao/content/2020/content 5515287.htm (last accessed on Dec. 14, 2020).

21 China has implemented other central and sub-central directives on increasing domestic and international trademark filings. See, e.g., Jiangsu Province Opinions on Further Implementing Trademark Strategy (Su Zheng Fa [2010] No. 115), Zhejiang Province Opinions on Further Implementing Trademark Strategy (Zhe Zheng Ban Fa [2014] No. 14), Zhenjiang City Government Opinions on Further Implementing Trademark Strategy (Zhen Zheng Fa [2011] No. 2).

22 U.K. Intellectual Property Office et al., "Bad-Faith Trade Marks in China" (factsheet), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment data/file/850682/Bad-faith Trade Marks - IP in China Factsheet.pdf.

23 "Practical tips for battling bad-faith filers in China", Brandy E. Baker, Dec. 31, 2018, World Trademark Review, www.worldtrade-

A 2018 survey by the Council of Fashion Designers of America (CFDA) reported that more than half of CFDA members were the targets of bad-faith trademark registrations in China.[24] The survey revealed that more than 181 actors filed bad-faith applications against more than one CFDA member, that more than two-thirds of those actors had filed for 50 or more trademarks, and that more than three-quarters of the applicants had no business operations other than speculation in trademarks.[25] Chinese researchers have shown that most of the top trademark filers in China are unknown companies or companies linked to known trademark pirates, rather than well-known brands.[26]

A fourth non-market factor driving volumes of trademark applications in China is unused trademarks registered in good faith by legitimate brand owners; such trademarks are registered in an effort to counter feared bad-faith registrations of the same marks. In the face of potential threats by bad-faith applicants, brand owners with sufficient financial means may file pre-emptive defensive applications for their marks in China, across multiple classes and subclasses of goods and services, without the intention of using the marks in commerce.[27] For example, a search of China's public-facing trademark database revealed that Sony Corp. filed for the standalone "SONY" trademark in all 45 classes on December 26, 2019—despite having already filed for a standalone SONY trademark in all 45 classes in May 2010 and in November 2008, as well as in 1985.[28]

Implications for trademark systems

Trademarks motivated by non-market factors drive application and registration trends that undermine the reliability of trademark registries, as seen in the case of the Shenzhen subsidies and the corresponding increase in volume of fraudulent trademark applications submitted to the USPTO. Subsidy-motivated trademark applications also stretch the capacity of China's trademark examiners and review authorities, and clutter China's trademark registry. In turn, a cluttered registry complicates clearance searches and can narrow the scope of protections available to mark holders engaged in the legitimate sale of goods and services.[29]

Many of the same observations apply to trademark applications filed in bad faith. Rather than serve as a useful source identifier for goods and services, bad-faith registrations are obstacles to legitimate commerce. The practice also gives rise to defensive filings of unused marks. Although defensive filings may be seen as a legitimate countermeasure, they increase the costs for parties attempting to use China's trademark system for its intended purposes. As a practical matter, such countermeasures may also be beyond the financial reach of many small and medium-sized enterprises attempting to do business in China.

24 CFDA, "Condensed Research Report on the Impact of Bad Faith Trademark Registration in China on CFDA Members," April 11, 2018, 3, https://cfda.imgix.net/2018/10/CFDA.com CFDA-Report-Bad-Faith-TM-China.pdf.

25 CFDA, "Condensed Research Report," 4.

26 Note that, in the first half of 2018, five of the top six filers were likely to be "bad faith," with no intention of using the trademarks in commerce. See Dou Dou (pseudonym), "Shock! The Routine behind Applying for 10,000 trademarks in Two Days," IPR Daily, August 13, 2018, www.iprdaily.cn/article 19593.html.

27 International Trademark Association, "Expanding Your Trademark into China: An INTA Guidebook for Small and Medium Enterprises," February 2016, 17, www.inta.org/wp-content/uploads/public-files/advocacy/committee-reports/INTA-SME-Anticounterfeiting-Toolkit-for-Chinese-Trademark-A.pdf.

28 CNIPA trademark database, accessed April 1, 2020, http://sbj.cnipa.gov.cn/.

29 Commissioner for Trademarks Mary Boney Denison noted the following in her 2019 testimony before the U.S. House of Representatives: "If the register is filled with marks that are not in use, or features registrations obtained by improper means, it makes trademark clearance more difficult, time-consuming, and expensive. An inaccurate register also leads to expensive opposition and cancellation proceedings, or federal court litigation, to correct inaccurate registrations and to enforce rights. And, in turn, it may cause companies to alter business decisions, often at significant cost." ("Counterfeits and Cluttering," 2.)

Subsidies and government mandates that help drive patent application trends

Patents confer commercial value to patent holders by affording exclusive rights relating to the claimed invention for a limited term, and they facilitate innovators' attempts to enter into commercial relationships with others and to access capital. Like trademarks, patents serve this function in China, as elsewhere, but patent filings in China are also influenced by non-market factors. These factors include subsidies and government mandates of various types. Their existence may in part explain why the commercial value of China's patents is low, by several measures, relative to some other countries.

According to professors Dan Prud'homme of the Ecole de Management Leonard De Vinci in Paris and Taolue Zhang of the Tongji University College of Law in Shanghai, "[a]ll 31 provinces/municipalities in mainland China have a patent subsidy scheme."[30] That observation is consistent with 195 reported subsidy measures in China.[31] As with trademark subsidies, many of these patent subsidies provide financial incentives greater than the cost of obtaining the patent, as shown in the examples below.

China also establishes patenting targets for state-owned enterprises, universities, public research institutions, and government officials.[32] Indeed, Prud'homme and Zhang explain that subsidies and targets are part of China's "massive system of IP-conditioned state incentives—including subsidies for patents, tax incentives tied to patents, and other monetary and non-monetary awards—as one tool to meet [innovation] targets."[33] Recently announced targets appear to confirm China's continued commitment to this approach. On March 11, 2020, China directed its 128 centrally owned enterprises to double their holdings of U.S. and other foreign patents by 2025.[34]

Subsidies are likely a major contributor to China's rapidly growing PCT filings. In 2019, the Shanghai government raised the per applicant maximum annual subsidy for international patent filings from RMB 1 million (about $142,000) to RMB 10 million ($1.42 million), and the per patent subsidy from RMB 30,000 ($4,500) to RMB 50,000 ($7,500). The per patent subsidy for domestic patents was reduced to RMB 2,500 ($370).[35]

The Beijing government has adopted a similar approach. According to measures that became effective in December 2019, an applicant is now entitled to as much as RMB 20 million ($3 million) in foreign patent subsidies per year (up from $150,000). The $3 million cap is higher than the RMB 2 million ($300,000) cap for domestic patents. The Beijing municipality also raised the per foreign patent subsidy from RMB 20,000 ($3,000) to RMB 50,000 ($7,500). The $7,500 per foreign patent subsidy is higher than the RMB 1,000 ($150) offered per domestic patent.[36]

As with trademarks, subsidies likely encourage parties to seek patents to receive the subsidy rather than to protect an innovation. They also appear to motivate strategic filing behavior, including the practice of splitting a single patent application into multiple applications in an effort to reach specific innovation metrics. An Organization for Economic Co-operation and Development working paper analyzed recurrent year-end surges in patent

30 Prud'homme and Zhang, China's Intellectual Property Regime for Innovation: Risks to Business and National Development (Cham, Switzerland: Springer International, 2019), 63.

31 https://mp.weixin.qq.com/s/lc5bzHXyhKHGN-2bzHwl7g (English translation available upon request).

32 Prud'homme and Zhang, China's Intellectual Property Regime, 62.

33 Prud'homme and Zhang, China's Intellectual Property Regime, 63.

34 CNIPA and State-Owned Assets Supervision and Administration Council of the State Council, "High-Quality Intellectual Property Work," 2.

35 The new subsidy measures became effective on January 1, 2019. Shanghai Intellectual Property Office and Shanghai Municipal Finance Bureau, "Notice on Printing and Distributing the 'Shanghai Patent Funding Measures,'" May 27, 2017, www.czi.sh.gov.cn/zys 8908/zcfg 8983/zcfb 8985/jkww 9022/201706/t20170609 175479.shtml.

36 People's Government of Beijing Municipality, "Notice of the Beijing Municipal Intellectual Property Office on Printing and Distributing the Administrative Measures of Beijing Municipality on Intellectual Property Subsidies (Trial)," December 9, 2019, www.beiiing.gov.cn/zhengce/zhengcefagui/201912/t20191210 1029118.html.

application filings, which coincide with yearly patent application quotas set by local governments in China.[37] Examining changes in the number of co-inventors listed in December applications, the paper concludes that Chinese (but not foreign) applicants may "split their innovation output to come up with more applications" to meet annual quotas.[38]

Implications for China's patent system

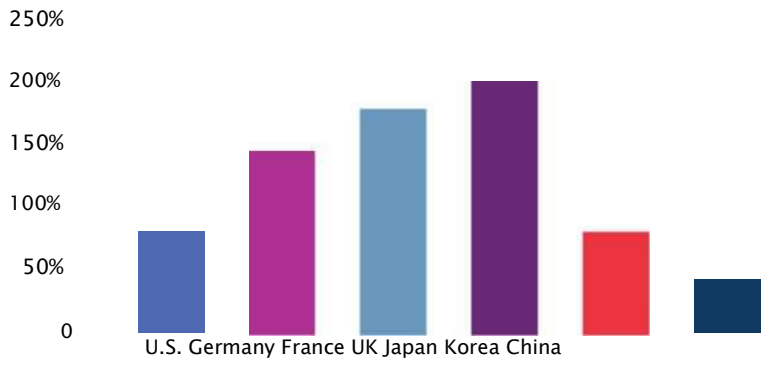
The influence of non-market factors such as subsidies and government mandates on patent filings in China calls into question the commercial value of subsequently issued patents. By a number of measures, the commercial value of patents issued in China is low compared with that of patents issued in the United States and a number of other countries. Two of these measures include the rate at which domestic inventors file for patent protection overseas and the extent to which inventors commercialize patents.

Chinese inventors seek foreign patent protection less frequently than U.S. inventors do

Because patents are territorial, inventors who desire international protection must consider filing patent applications both domestically and abroad. Rates of patenting abroad are viewed as an indicator of the commercial value of a patent because low expected returns on investment discourage the additional expense associated with foreign filings.[39] China's position as the world's leading exporter of goods, including global high-tech exports, suggests that its inventors should often file for foreign protection for inventions, to the extent that the exported goods include technologies patented by Chinese parties.[40] The data, however, show that Chinese patent applicants are much less likely to seek foreign protection than are U.S. inventors.

In 2018, for every 100 domestic applications, Chinese applicants filed 5 foreign applications. By comparison, U.S. parties filed 80 foreign applications for every 100 domestic applications. The ratio is still higher for inventors in some smaller markets. Figure 4 shows the foreign filing ratios for all IP5 countries. China's 5/100 ratio is lower than that of other IP5 countries, which range from

Figure 4: Ratio of foreign filings to domestic filings by IP5 countries in 2018



Source: Authors[1] calculations based on data from WIPO IP Statistics Data Center, www3.wipo.int/ipstats/index.htm?tab=patent.

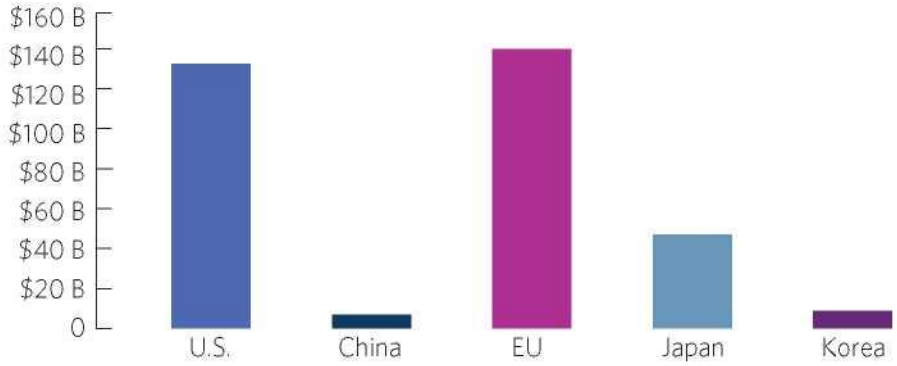
37 Zhen Lei, Zhen Sun, and Brian Wright, "Are Chinese Patent Applications Politically Driven? Evidence from China's Domestic Patent Applications" (working paper, Organization for Economic Co-operation and Development, Paris, 2013), www.oecd.org/site/stipatents/4-3-Lei-Sun-Wright.pdf.

38 Id. at 22.

39 Prud'homme and Zhang, China's Intellectual Property Regime, 57.

40 Center for Strategic and International Studies, "China Power Project: Is China the World's Top Trader?," updated March 17, 2020, https://chinapower.csis.org/trade-partner/. See also World Bank data provided at http://api.worldbank.org/v2/en/indicator/TX.VAL.TECH.CD?downloadformat=excel indicating that China accounted for 27 percent of the value of global high tech exports in 2016.

Figure 5: IP licensing receipts by IP5 countries and regions in 2019 (billions of U.S. dollars)



Source: Authors' calculations based on data from the World Bank's World Development Indicators database, https://databank.worldbank.org/source/world-development-indicators#.

42/100 to 202/100.[41] In other words, although China's inventors filed far more domestic patent applications in China than did U.S. inventors in the United States, U.S. inventors filed more foreign applications. By this measure, U.S. inventors ranked first globally, with more than 230,000 foreign applications, and Chinese applicants ranked fifth, with 66,429 foreign applications, in 2018.[42] The relatively low level of Chinese foreign filings may reflect an assessment that the return on investment for filing overseas is insufficient to offset the additional expense associated with foreign filings.

Chinese inventors lag U.S. inventors in IP commercialization

Licensing is a primary means of commercializing IP. According to WIPO's 2020 Global Innovation Index, the United States ranks first in IP receipts as a percentage of total trade, while China ranks 44th on that scale. [43] In 2019 the United States accounts for 32.5 percent of total global licensing receipts; China accounts for 1.7 percent.[44] Figure 5 depicts IP licensing receipts by IP5 countries and regions in 2019 (not including domestic licensing). The ratio of China's IP licensing receipts as a share of its trade is an additional indicator of the relatively low value of China's patents and other IP.

Conclusion

The volume of trademark and patent applications filed in China has outpaced that of global competitors in recent years. Some observers view a country's trademark and patent application volume as a proxy for the intensity of its brand creation and innovation. Although numerical comparisons involving China may relate in some measure to its intensity in these areas, conclusions in this regard should not be reached without additional context. In China, non-market factors, including subsidies, government mandates, bad-faith trademark applications, and resulting countermeasures, substantially contribute to trademark and patent application activity. Absent consideration of the role of non-market factors, cross-border comparisons based on the raw number of trademark and patent applications risk overstating brand creation and innovation activity in China. These non-market factors are also undermining domestic and foreign registries, stretching the capacity of China's patent and trademark examiners and review authorities, and narrowing the scope of available protection for legitimate rights holders.

41 Domestic-to-foreign ratios are based on data from WIPO IP Statistics Data Center, www3.wipo.int/ipstats/index.htm?tab=patent. See also WIPO, Intellectual Property Indicators 2019, 15, 32 (Figure A18).

42 WIPO, World Intellectual Property Indicators 2019, 15.

43 WIPO Global Innovation Index 2020, Appendix II, page 239, www.wipo.int/global innovation index/en/2020/

44 Percentage calculated using data from World Bank World Development Indicators, available at https://databank.worldbank.org/source/world-development-indicators#

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