
ARTICLE

FORCED TECHNOLOGY TRANSFER IN THE CASE OF CHINA

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ABSTRACT

Forced technology transfer (“FTT”) has been the most acrimonious issue in the current U.S.–China trade war. The United States has imposed several rounds of hefty tariffs on China because of the latter’s FTT practices. This Article provides a comprehensive analysis of China’s alleged FTT practices. The United States has accused China of using ownership restrictions and administrative processes to compel United States’ firms to transfer technology to Chinese entities. While China has undertaken a series of reforms prohibiting FTT practices and has signed the Phase-One trade agreement with the United States, the concerns of its trading partners and foreign businesses over FTT have not been entirely alleviated. This Article notes that China’s FTT practices are not uncommon in the developing world. However, such “market-for-technology” or quid pro quo policies have been increasingly scrutinized in the international investment, trade, and intellectual property policy settings in recent years. Moreover, despite China’s above-mentioned reforms, FTT remains an unsolved issue in the current international economic environment.

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INTRODUCTION

With economic relations between the United States and China at the lowest point in two decades, it is important to explore the foremost trade controversies between these two major economies in the world. Trade frictions between the two countries have recently shifted from deficits and surpluses toward technological matters. Forced technology transfer (“FTT”) is among the fiercest frictions within U.S.–China trade.¹ The U.S. claimed that China’s FTT policies seriously threaten its economy and the global competitiveness of its key industries.² Thus, the U.S. imposed several rounds of tariffs on China due to the country’s FTT practices.³ On May 29, 2018, President Donald Trump announced “the imposition of an additional duty of 25 percent on approximately \$50 billion worth of Chinese imports” as part of the U.S. response to China’s alleged unfair trade practices related to the FTT and intellectual property (“IP”).⁴

¹ See, e.g., Jyh-An Lee, *Shifting IP Battlegrounds in the U.S.–China Trade War*, 43 COLUM. J. L. & ARTS. 147, 154 (2020); Dan Prud’homme & Max von Zedtwitz, *Managing “Forced” Technology Transfer in Emerging Markets: The Case of China*, 25 J. INT’L MGMT. 1, 2 (2019); Kevin Hamlin, *Forced or Not? Why U.S. Says China Steals Technology*, WASHINGTON POST (June 17, 2019), https://www.washingtonpost.com/business/forced-or-not-why-us-says-china-steals-technology/2019/06/15/1f83e73c-8fb9-11e9-b6f4-033356502dce_story.html [<https://perma.cc/MNV5-L67Z>]; Keith Bradsher, *How China Obtain American Trade Secrets*, N.Y. TIMES (Jan. 15, 2020), <https://www.nytimes.com/2020/01/15/business/china-technology-transfer.html> [<https://perma.cc/8LC7-K4PY>]; Jane Cai & Keegan Elmer, *Is the US Right to Cry Foul About Forced Technology Transfer to Do Business in China—And What is Beijing’s Position?*, S. CHINA MORNING POST (Jan. 10, 2019), <https://www.scmp.com/news/china/diplomacy/article/2181528/us-right-cry-foul-about-forced-technology-transfer-do-business>; Yeung & Leng, *Can China Meet US Trade War Demands on IP Theft and Forced Technology Transfer?*, S. CHINA MORNING POST (Feb. 25, 2019), <https://www.scmp.com/economy/china-economy/article/2187312/us-china-trade-war-can-china-meet-us-demands-ip-theft-and>.

² See, e.g., Greg Mastel, *A New Trade Policy Toward China*, 19 WASH. Q. 189, 202 (1996). But see Dan Prud’homme, *3 Myths About China’s IP Regime*, HARV. BUS. REV. 3 (Oct. 23, 2019) (finding that “the most egregious Chinese policies coercing technology transfer do not appear to be commonly faced by foreign firms in recent years”).

³ See, e.g., Salvatore Babones, *The Trade War That Wasn’t: Tit-For-Tat Tariffs Are Unlikely to Have Any Real Effect*, FORBES (Apr. 5, 2018), <https://www.forbes.com/sites/salvatorebabones/2018/04/05/the-trade-war-that-wasnt-tit-for-tat-tariffs-are-unlikely-to-have-any-real-effect/#40909b4c3ec5> [<https://perma.cc/C6LJ-BFMN>] (“Trump’s proposed tariffs . . . are intended to force China into concessions on technology transfer.”).

⁴ Office of the U.S. Trade Representative, USTR Issues Tariffs on Chinese Products in Response to Unfair Trade Practices (June 15, 2018), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2018/june/ustr-issues-tariffs-chinese-products> [<https://perma.cc/RS68-UB2Z>]; White House Statements & Releases, Statement on Steps to Protect Domestic Technology and Intellectual Property from China’s Discriminatory and Burdensome Trade Practices (May 29, 2018), <https://www.whitehouse.gov/briefings-statements/statement-steps-protect-domestic-technology-intellectual-property-chinas-discriminatory-burdensome-trade-practices/> [<https://perma.cc/8JSK-ZXAD>].

On September 18, 2018, the Office of the U.S. Trade Representative (“USTR”) published “a list of approximately \$200 billion worth of Chinese imports that will be subject to additional tariffs” as part of the continuous response to China’s FTT practices and theft of American IP.⁵ While the initial additional tariff was originally imposed at 10 percent on September 24, 2018,⁶ it was subsequently raised to 25 percent on May 10, 2019.⁷ The measure of these tariffs and the escalating trade conflicts revealed the significance of FTT.

FTT is perceived as an unfair IP practice because it shifts the bargaining power from foreign firms to domestic firms in a country or jurisdiction.⁸ The U.S. accused China of unfairly forcing “the transfer of foreign technologies and IP to Chinese competitors, often in exchange for access to the vast Chinese market.”⁹ Although top Chinese leaders have repeatedly denied or promised to end this practice, many of China’s trading partners indicate that it remains active.¹⁰ Such indications are supported by surveys conducted by the U.S.–China Business Council,¹¹ the American Chamber of Commerce in China,¹² the American

⁵ Office of the U.S. Trade Representative, USTR Finalizes Tariffs on \$200 Billion of Chinese Imports in Response to China’s Unfair Trade Practices (Sept. 18, 2018), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2018/september/ustr-finalizes-tariffs-200> [<https://perma.cc/CC6F-HS2T>].

⁶ *Id.*

⁷ Office of the U.S. Trade Representative, Statement by U.S. Trade Representative Robert Lighthizer on Section 301 Action (May 10, 2019), <https://ustr.gov/index.php/about-us/policy-offices/press-office/press-releases/2019/may/statement-us-trade-representative> [<https://perma.cc/RP8X-W7R9>].

⁸ DAN PRUD’HOMM & TAOLUE ZHANG, CHINA’S INTELLECTUAL PROPERTY REGIME FOR INNOVATION RISKS TO BUSINESS AND NATIONAL DEVELOPMENT 78 (2019); Prud’homm, Max von Zedtwitz, Joachim Jan Thraen & Martin Bader, “*Forced Technology Transfer*” *Policies: Workings in China and Strategic Implications*, 134 TECHNOLOGICAL FORECASTING & SOC. CHANGE 150, 150 (2018); Prud’homm & von Zedtwitz, *supra* note 1, at 5; *see also* Andrew Lang, *Protectionism’s Many Faces*, 44 YALE J. INT’L L. ONLINE 54, 58 (2018) (pointing out the Chinese firms gain unfair advantages because of the country’s FTT practices).

⁹ WHITE HOUSE OFFICE OF TRADE & MFG. POLICY, HOW CHINA’S ECONOMIC AGGRESSION THREATENS THE TECHNOLOGIES AND INTELLECTUAL PROPERTY OF THE UNITED STATES AND THE WORLD 5 (2018).

¹⁰ *See, e.g., id.* at 6; Julia Ya Qin, *Forced Technology Transfer and the US-China Trade War: Implications for International Economic Law*, 22 J. INT’L ECON. L. 743, 743-44 (2019).

¹¹ OFFICE OF THE U.S. TRADE REPRESENTATIVE, UPDATE CONCERNING CHINA’S ACTS, POLICIES AND PRACTICES RELATED TO TECHNOLOGY TRANSFER, INTELLECTUAL PROPERTY, AND INNOVATION 23 (Nov. 20, 2018).

¹² WHITE HOUSE OFFICE OF TRADE & MFG. POLICY, *supra* note 9, at 5; OFFICE OF THE U.S. TRADE REPRESENTATIVE, FINDINGS OF THE INVESTIGATION INTO CHINA’S ACTS, POLICIES AND PRACTICES RELATED TO TECHNOLOGY TRANSFER, INTELLECTUAL PROPERTY, AND INNOVATION UNDER SECTION 301 OF THE TRADE ACT OF 1974 22-23 (Mar. 22, 2018) [hereinafter USTR, 2018 SECTION 301 REPORT].

Chamber of Commerce in Shanghai,¹³ and the European Chamber of Commerce in China.¹⁴

Despite the controversy and wide attention of China's FTT practices and its importance in the recent U.S. – China trade war, there is surprising very little academic literature on this issue. By analyzing FTT practices in the case of China, this article aims to fill this gap and enhance the understanding of the legal and policy implications of FTT. Part I of this article introduces the concept of FTT and the contentious practices in China, which include two primary types of FTT. One is FTT through a mandatory joint venture ("JV") arrangement, and the second is trade secret divulgence in the regulatory approval process. Part II describes recent Chinese reforms regarding FTT, including the lift of foreign ownership restrictions, the enactment of the Foreign Investment Law, the amendment of the Administrative License Law, and the signing of the Phase-One trade agreement with the U.S. Part III analyzes the legal and policy issues underlying the FTT controversy between the U.S. and China. It explores the quid pro quo policies conditioning market access on technology transfer from development and trade law perspectives. It explores whether foreign businesses are coerced to or voluntarily transfer their technologies to Chinese companies. This part also evaluates the rationale behind and concerns over China's recent reform forbidding FTT. Part IV concludes that FTT in the case of China provides an interesting example of the intricate relationship between technology innovation and economic growth in national development. While the contention of FTT reveals the economic, technological, and political competition between the world's two largest economies, it also leaves unsolved issues for the international economic order

I. FTT: THE CONCEPT AND PRACTICE IN CHINA

FTT refers to an informal government practice which requires the transfer of technology from foreign investors as a condition of market access or investment.¹⁵ Because FTT policies are usually implemented without formal written

¹³ OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 11, at 23; Bob Carbaugh & Chad Wassell, *Forced Technology Transfer and China*, 39 *ECON. AFF.* 306, 311 (2019).

¹⁴ Julie Wernau, *Forced Tech Transfers Are on the Rise in China, European Firms Say*, *WALL ST. J.* (May 20, 2019), <https://www.wsj.com/articles/forced-tech-transfers-are-on-the-rise-in-china-european-firms-say-11558344240> [<https://perma.cc/4G3J-CF2C>].

¹⁵ *See, e.g.*, GREG MASTEL, *AMERICAN TRADE LAWS AFTER THE URUGUAY ROUND* 64 (1996); *see also* Prud'homme et al., *supra* note 8, at 150 (defining FTT as "government policies meant to increase foreign-domestic technology transfer that simultaneously weaken appropriability of foreign innovations"); Qin, *supra* note 10, at 745 (perceiving FTT as "any situation in which the government requires a foreign firm to share its proprietary information in order to conduct business in the country"); Eur. Comm'n, *Concept Paper: WTO Modernization Future EU Proposals on Rulemaking* 5 (describing FTT as "where foreign operators are directly or indirectly forced to share their innovation and technology with the state or with domestic operators"); Hamlin, *supra* note 1 ("The term refers to a spectrum of practices through which foreign companies that want to operate in China are induced

law or rules,¹⁶ it is difficult to detect, prove, or combat the practice.¹⁷ While FTT is not rare internationally, China in particular is known for this practice¹⁸ as part of its industrial policy.¹⁹ China's investment regulations once included "market for technology" rules granted foreign investors limited market access if they were able to transfer advanced technologies to the country.²⁰ China abolished these regulations for its accession to the World Trade Organization ("WTO").²¹ Nevertheless, the practice of requiring foreign investors to transfer technology to local parties allegedly continues through equity restrictions and administrative approvals.²²

Despite the fact that the Trump Administration popularized the term FTT, U.S. laws and documents have used the term officially for almost two decades. The 2002 Trade Act delineates trade negotiating objectives regarding foreign investment, including "reducing or eliminating . . . forced technology transfers,

to part with their know-how."). *But see* Dale L. Carlson, Katarzyna Przychodzen & Petra Scamborova, *Patent Linchpin for the 21st Century? - Best Mode Revisited*, 87 J. PAT. & TRADEMARK OFF. SOC'Y 89, 108-09 (2005) (using the term FTT to mostly refer to compulsory licensing); Michael B. Smith, *GATT, Trade, and the Environment*, 23 ENVTL. L. 533, 542 (1993) (understanding FTT as an approach to compel technology transfer from the developed world to developing countries for global environmental concerns).

¹⁶ *See, e.g.*, MASTEL, *supra* note 15, at 64; *see also* LEE G. BRANSTETTER, CHINA'S FORCED TECHNOLOGY TRANSFER PROBLEM—AND WHAT TO DO ABOUT IT 4 (Peterson Inst. for Int'l Econ. June 2018) ("China's requirements for technology transfer are not stipulated in law and are imposed instead through extralegal means . . ."); Qin, *supra* note 10, at 745-48 (pointing out the policy complications associated with FTT implemented via implicit means and stating the FTT is implemented in China via direct and implicit means, such as oral instructions).

¹⁷ *See* MASTEL, *supra* note 15, at 64; Mark Wu, *Export Policies, Technology Transfer Policies, and Investment Reviews: How States Compete in the Era of Global High-Tech Value Chains*, in GOVERNING SCIENCE AND TECHNOLOGY UNDER THE INTERNATIONAL ECONOMIC ORDER: REGULATORY DIVERGENCE AND CONVERGENCE IN THE AGE OF MEGAREGIONALS 90, 100-01 (Shin-yi Peng, et al. eds., 2018); OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 12, at 21 ("The fact that China systematically implements its technology transfer regime in informal and indirect ways makes it 'just as effective [as written requirements], but almost impossible to prosecute."); Qin, *supra* note 10, at 748 (stating the difficulties with prosecuting FTT in China because of the absence of a paper trail).

¹⁸ MASTEL, *supra* note 15, at 64; Prud'homme & von Zedtwitz, *supra* note 1, at 2.

¹⁹ WHITE HOUSE OFFICE OF TRADE & MFG. POLICY, *supra* note 9, at 5; MASTEL, *supra* note 2, at 202; BRANSTETTER, *supra* note 16, at 2; Patrick A. Mulloy, *Coerced Tech Transfer: The Heart of the China Problem*, THE AMERICAN PROSPECT (June 26, 2019), <https://prospect.org/world/coerced-tech-transfer-heart-china-problem/> [<https://perma.cc/TKE7-K7RJ>].

²⁰ *See, e.g.*, Qin, *supra* note 10, at 749; Hamlin, *supra* note 1.

²¹ *See* Qin, *supra* note 10, at 750.

²² *Id.*

and other unreasonable barriers to the establishment and operation of investments.”²³ The USTR used the term FTT in its Special 301 Report in 2002.²⁴ On September 22, 2010, the Congressional-Executive Commission on China held a hearing on China’s IP issues, in which most witnesses identified FTT issues in China.²⁵ For example, Professor Richard P. Suttmeier stated, “[i]n joining WTO, China has pledged that technology transfer requirements would not be a condition for foreign investment. That we continue to hear complaints about coerced transfers indicates that China is either ignoring its WTO commitments or has found new policy tools to induce transfers.”²⁶ Additionally, similar discussions between the U.S. and China trace back to the 1992 U.S.–China Memorandum of Understanding, in which China promised “not [to] condition issuance of import licenses upon transfer of technology or meeting requirements related to investment in China.”²⁷

On August 14, 2017, President Trump directed the U.S. Trade Representative to launch an investigation under Section 301 of the Trade Act to determine, among other things, whether the Chinese government has coercively required American companies to transfer technologies to Chinese companies.²⁸ This investigation led to two important documents, both published by the USTR, in which the U.S. detailed China’s FTT practices. First, the Section 301 Report, published on March 22, 2018,²⁹ and second, a report on China’s controversial IP practices, published on November 20, 2018.³⁰ Many believe that the publication of the Section 301 Report started the U.S.–China trade war.³¹ On October 4, 2018, U.S. Vice President Mike Pence strongly warned China to stop its FTT

²³ Trade Act of 2002, Pub. L. No. 107-210, § 2102, 116 Stat. 933, 994 (2002).

²⁴ See, e.g., OFFICE OF THE U.S. TRADE REPRESENTATIVE, 2012 SPECIAL 301 REPORT 17 (2012).

²⁵ *Will China Protect Intellectual Property? New Developments in Counterfeiting, Piracy, and Forced Technology Transfer: Hearing Before the Cong.-Exec. Comm’n on China*, 111th Cong. (2010).

²⁶ *Id.* at 41.

²⁷ *Memorandum of Understanding between the Government of the United States of America and the Government of the People’s Republic of China Concerning Market Access*, 31 I.L.M. 1275, 1277 (1992); see *Memorandum of Understanding between the Government of the United States of America and the Government of the People’s Republic of China on the Protection of Intellectual Property*, 34 I.L.M. 677 (1995).

²⁸ *Addressing China’s Laws, Policies, Practices, and Actions Related to Intellectual Property, Innovation, and Technology*, 82 Fed. Reg. 39,007 (Aug. 17, 2017).

²⁹ USTR, 2018 SECTION 301 REPORT, *supra* note 12 at 19.

³⁰ OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 11.

³¹ See, e.g., Simon Lester and Huan Zhu, *What Will the U.S.-China Deal Accomplish on Tech Transfer, IP Protection and Innovation*, CATO AT LIBRARY (Feb. 14, 2020), <https://www.cato.org/blog/what-will-us-china-deal-accomplish-tech-transfer-ip-protection-innovation> [<https://perma.cc/NCA8-5SUB>].

practices, and declared in his speech at the Hudson Institute that the U.S. government was determined to take action against such practices.³²

While FTT may involve patents, copyright, and trademarks, trade secrets are the most relevant category of IP in the context of FTT,³³ which normally involves the transfer of trade secrets or confidential information from foreign investors to domestic firms.³⁴ In the recent trade dispute with China, the U.S. accuses China of using ownership restrictions and administrative processes to compel U.S. firms to transfer technology to Chinese entities.³⁵

A. Mandatory Joint Venture Arrangement

China has used its investment laws to induce technology transfer from abroad.³⁶ Its most well-known FTT policy is to use foreign ownership restrictions to facilitate de facto technology transfers from foreign companies to their Chinese partners.³⁷ These restrictions have facilitated Chinese companies' access to foreign technologies and confidential information.³⁸ Although foreign businesses normally prefer to invest in China through the structure of a wholly owned foreign enterprise ("WFOE"),³⁹ China's *Catalogue of Industries for Guiding Foreign Investment* ("*Foreign Investment Catalogue 2017*") (外商投资产业指导目录[2017年修订]) required foreign companies seeking to invest in certain industries to enter into cooperative agreements, such as joint venture ("JV") agreements, with Chinese partners.⁴⁰ For example, according to the 2017

³² Mike Pence, Remarks by Vice President Pence on the Administration's Policy Toward China, WHITEHOUSE.GOV (Oct. 4, 2018), <https://www.whitehouse.gov/briefings-statements/remarks-vice-president-pence-administrations-policy-toward-china> [<https://perma.cc/D6H8-S35Y>].

³³ See, e.g., Bradsher, *supra* note 1.

³⁴ OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 24, at 17-18.

³⁵ See, e.g., Qin, *supra* note 10, at 743. *But see* Daniel C.K. Chow, *Three Major Problems Threatening Multi-National Pharmaceutical Companies Doing Business in China*, 19 COLUM. SCI. & TECH. L. REV. 46, 50, 66, 71-72 (2017) (providing a different definition of FTT in China, which is by limiting pharmaceutical patent protection, China has forced foreign pharmaceutical companies' technologies enter into the public domain and consequently transfer to domestic companies).

³⁶ See, e.g., Ross P. Buckley & Weihuan Zhou, *Navigating Adroitly: China's Interaction with the Global Trade, Investment, and Financial Regimes*, 9 E. ASIA L. REV. 1, 21 (2013).

³⁷ See, e.g., USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 19-20, 27; PRUD'HOMM & ZHANG, *supra* note 8, at 80; Rachel Brewster, *Analyzing the Trump Administration's International Trade Strategy*, 42 FORDHAM INT'L L. J. 1419, 1423 (2019); Carbaugh and Wassell, *supra* note 13, at 312; Prud'homm & Zedtwitz, *Managing "Forced" Technology Transfer*, *supra* note 1, at 7; Qin, *supra* note 10, at 746.

³⁸ See, e.g., WHITE HOUSE OFFICE OF TRADE & MFG. POLICY, *supra* note 9, at 6.

³⁹ USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 27-28; Mary E. Lovely & Zixuan Huang, *Foreign Direct Investment in China's High-technology Manufacturing Industries*, 26 CHINA & WORLD ECON. 104, 114 (2018).

⁴⁰ See USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 23-26.

Foreign Investment Catalogue, the Chinese party's investment could not be lower than fifty percent in the automobile manufacturing business, whereas foreign investment could not exceed fifty percent in the business of value-added telecommunications services.⁴¹ The JV requirement and ownership restrictions applied to many other industries as well, including high-speed trains and new energy vehicles industries.⁴²

Once a foreign company forms a joint venture with a Chinese enterprise, it has no choice but to provide the partnering Chinese company with trade secrets and confidential information.⁴³ Moreover, because government approvals are required for JV operation, the government may compel the foreign party to transfer its proprietary technology and information to its Chinese partners, which the foreign party might otherwise be unwilling to do.⁴⁴ Further, the partnering Chinese company might become a potential competitor of the foreign company in the future.⁴⁵ Some foreign businesses, such as DuPont, claim that the Chinese government enables FTT by using regulatory powers, such as antitrust investigations, to threaten foreign businesses during IP disputes with local partners.⁴⁶ Many experts believe that the mandatory JV arrangement has successfully facilitated technology transfer from abroad and upgraded China's technological

⁴¹ *Id.* at 26.

⁴² *See, e.g.*, PRUD'HOMM & ZHANG, *supra* note 8, at 80.

⁴³ *See, e.g.*, USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 26-27; Carbaugh & Wassell, *supra* note 13, at 311; Lee, *supra* note 1, at 153; Qin, *supra* note 10, at 756-57; *see also* Lovely & Huang, *supra* note 39, at 114 ("These [ownership] restrictions have raised concerns in source countries about inappropriate technology transfers.").

⁴⁴ *See* USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 38; Qin, *supra* note 10, at 747; *see also* Carbaugh & Wassell, *supra* note 13, at 312 ("[T]he Chinese government has forced foreign companies to undertake technology transfers on terms that they likely would not accept anywhere else.").

⁴⁵ *See, e.g.*, Qin, *supra* note 10, at 747.

⁴⁶ *See, e.g.*, Hamlin, *supra* note 1.

standard to the international level⁴⁷ in sectors such as automotive,⁴⁸ aviation,⁴⁹ and high-speed rail.⁵⁰

B. Trade Secret Divulgence in Exchange for Administrative Approval

Another form of FTT manifests in Chinese administrative approval procedures, where foreign investors must share confidential information relevant to proprietary technology, such as production process, formulas or designs, or even source code,⁵¹ with government officials to obtain or maintain market access.⁵² Foreign businesses are required to obtain numerous administrative approvals at different government levels and sectors in China, ranging from those of specific

⁴⁷ See Thomas J. Holmes, Ellen R. McGrattan, & Edward C. Prescott, *Quid Pro Quo: Technology Capital Transfers for Market Access in China*, REV. ECON. STUD. 1154, 1162 (2015) (citing the work of John Van Reenen and Linda Yueh, which “shows that these forced technology transfer deals actually work as intended, namely they upgrade the domestic partner”). *But see* Magnus Blomström & Fredrik Sjöholm, *Technology Transfer and Spillovers: Does Local Participation with Multinationals Matter?*, 43 EURO. ECON. REV. 915, 920-923 (1990) (not supporting the argument that “local participation with multinationals reveals the . . . [multinational enterprises’] proprietary knowledge and in that way facilitates technology spillovers to the domestic sector”); Yu Zhou, *U.S. Trade Negotiators Want to End China’s Forced Tech Transfers That Could Backfire*, WASH. POST (Jan. 28, 2019), <https://www.washingtonpost.com/news/monkey-cage/wp/2019/01/28/u-s-trade-negotiators-want-to-end-chinas-forced-tech-transfers-that-could-backfire/> [<https://perma.cc/WA62-D4F8>] (stating that China failed to successfully upgrade its semiconductor technology by JV arrangements); Julien Gourdon et al., *International Technology Transfer Policies*, Working Party of the Trade Committee, Organization for Economic Co-operation and Development 16 (Jan. 14, 2019) (“[A] body of research shows that forced technology transfer policies often fail to achieve their goals, resulting only in transfer of dated or marginal technology.”).

⁴⁸ See, e.g., Carbaugh & Wassell, *supra* note 13, at 311; *but see* Cai & Elmer, *supra* note 1 (stating that “[t]he auto industry may be an example of a failure of FTT policies for China, as foreign companies have earned hefty royalties and profits in a prosperous market and China has failed to grasp key technologies”); Zhou, *supra* note 47 (noting that Chinese ventures in the automobile industry can never keep up with the technological standard of their foreign partners).

⁴⁹ USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 31-35.

⁵⁰ See, e.g., Qin, *supra* note 10, at 751; Cai & Elmer, *supra* note 1; Hamlin, *supra* note 1.

⁵¹ See USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 41-43; Jyh-An Lee, *Hacking into China’s Cybersecurity Law*, 53 WAKE FOREST L. REV. 57, 84 (2017) (describing the possibility that the Chinese government may ask “product or service vendors to provide source code or install backdoors in hardware and software” according to the Cybersecurity Law).

⁵² See, e.g., Lee, *supra* note 1, at 154; Prud’homme & Zedtwitz, *supra* note 1, at 7; Qin, *supra* note 10, at 745; USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 41-43; OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 11, at 25; *see also* OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 24, at 18 (“[FTT] policies include . . . [r]equiring unnecessary disclosure of confidential business information for regulatory approval . . .”).

investments, specific products or services, national security reviews, etc.⁵³ The Chinese government and agencies allegedly use “vaguely worded provisions”⁵⁴ and “discretionary and non-transparent administrative reviews and licensing processes” to compel foreign businesses to disclose confidential technical information that is unnecessary for regulatory purposes.⁵⁵ Allegedly, this confidential information would later be leaked to local competitors.⁵⁶ Foreign investors’ disclosure of trade secrets as a precondition of receiving regulatory approval has frequently occurred in the chemical, pharmaceutical, information and communication technology, machinery, and financial services industries, among others.⁵⁷

II. CHINA’S RECENT REFORM REGARDING FORCED TECHNOLOGY TRANSFER

China has denied there has been any FTT in the country.⁵⁸ China claims that there has been no solid evidence proving technology transfer has been compelled by the Chinese government.⁵⁹ According to a statement issued by the State Council in China, all technology transfers in the country have been based on voluntariness and freedom of contract.⁶⁰ Nonetheless, under pressure from the U.S., China has gradually amended some laws and regulations addressing FTT over the past year.

⁵³ See, e.g., USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 36-37; Qin, *supra* note 10, at 745.

⁵⁴ USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 36.

⁵⁵ *Id.* at 19-22.

⁵⁶ See, e.g., PRUD’HOMME & ZHANG, *supra* note 8, at 80; see also USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 42 (citing the findings of European researchers that the confidential information provide by foreign businesses to the Chinese government would sometimes be disclosed to their local competitors); Hamlin, *supra* note 1 (reporting Huntsman Corp.’s similar experience in China).

⁵⁷ See, e.g., USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 42; PRUD’HOMME & ZHANG, *supra* note 8, at 80.

⁵⁸ INFO. OFFICE OF THE STATE COUNCIL IN CHINA, THE FACTS AND CHINA’S POSITION ON CHINA–US TRADE FRICTION 30-31 (2018); see also Qin, *supra* note 10, at 743 (indicating that China has denied all allegations regarding FTT); Hamlin, *supra* note 1 (reporting that the Chinese government argued that “the U.S. ‘fabricated’ accusations; Cai & Elmer, *supra* note 1 (“The Chinese government has rejected such accusations both publicly and in government-to-government communications.”).

⁵⁹ Dr. Zhang Xiangchen, Ambassador to China, Statement at the World Trade Organization DSB Meeting (May 30, 2018), <http://wto2.mofcom.gov.cn/article/chinaview-poins/201805/20180502749669.shtml> [<https://perma.cc/DFW8-48DR>]; Liangyu, *US Accusation of China IP Theft, Forced Technology Transfer Unfounded: White Paper* (June 2, 2019), http://www.xinhuanet.com/english/2019-06/02/c_138110222.htm [<https://perma.cc/5ACS-FJRP>]; see Hamlin, *supra* note 1 (reporting that “[t]he Chinese government dismisses allegations of strong-arming as ‘utterly unfounded’”).

⁶⁰ INFO. OFFICE OF THE STATE COUNCIL IN CHINA, *supra* note 58, at 29-30.

A. JV Restrictions

On June 30, 2019, the State Development and Reform Commission and the Ministry of Commerce jointly issued the *Special Administrative Measures (Negative List) for the Access of Foreign Investment (2019)* (外商投资准入特别管理措施(负面清单)(2019年版)) (“2019 Negative List”), which came into effect on July 30, 2019.⁶¹ The Chinese government announced a plan to loosen its ownership restrictions in certain sectors, as outlined below, in the 2019 Negative List:

Under the current scheme, “[f]or the manufacturing of automobiles other than special-purpose vehicles and new energy vehicles, the Chinese party shall have a stake of not less than 50%, and the same foreign investor may establish not more than two equity joint ventures manufacturing the same line of automobiles in China,” but “[f]or the manufacturing of commercial vehicles, the restriction on foreign stake will be canceled in 2020. In 2022, the restriction on foreign stake for the manufacturing of passenger vehicles and the restriction that the same foreign investor may establish not more than two equity joint ventures manufacturing the same line of automobiles in China will be canceled.”⁶²

Under the current scheme, “[t]he foreign stake in a securities company shall not exceed 51%, and the foreign stake in a securities investment fund management company shall not exceed 51%,” but “[t]he restriction on foreign stake [in this sector] will be canceled in 2021.”⁶³

Under the current scheme, “[t]he foreign stake in a securities company shall not exceed 51%,” but “[t]he restriction on foreign stake will be canceled in 2021.”⁶⁴ The same restriction and deregulation plans also apply to companies providing future investment advice or broker services, as well as to life insurance companies.⁶⁵

The Chinese government has planned to remove the 50 percent restriction on foreign ownership of JVs by 2022.⁶⁶ Relaxing the *Negative List* makes market access easier for foreign businesses. Notably, not all industries that remain subject to ownership restrictions are high technology. Instead, although there are some advanced technologies involved in certain sectors (such as the agricultural sector), most of the ownership restrictions apply to the sectors that provide infrastructure, such as water supply, airports, and basic telecommunications.⁶⁷ The

⁶¹ 外商投资准入特别管理措施(负面清单)(2019年版) [Special Administrative Measures (Negative List) for the Access of Foreign Investment (2019)], Order No. 25 of the National Development and Reform Commission and the Ministry of Commerce of the People’s Republic of China (June 30, 2019) (China) [hereinafter 2019 Negative List].

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ See, e.g., Zhou, *supra* note 47.

⁶⁷ According to the 2019 Negative List, the Chinese party is required to be the controlling shareholder in joint business ventures for (1) “selection and cultivation of new wheat or corn

policy rationale underlying these ownership restrictions is that serious and justified national security concerns might exist if critical infrastructure is completely owned or operated by foreign parties. Therefore, for the industries subject to ownership restrictions according to the *2019 Negative List*, the restrictions are not necessarily related to FTT.

B. Trade Secret Protection During the Administrative Approval Process

Before the U.S.-China trade war, Chinese government official's confidential obligation concerning private parties' trade secret was stipulated in the 2017 Anti-Unfair Competition Law. Article 15 provides that:

The supervisory inspection departments and their employees are obliged to keep the trade secrets known in their investigations confidential.⁶⁸

Violation of Article 15 is subject to disciplinary action.⁶⁹ This confidential obligation and corresponding administrative liability remain in the 2019 Anti-Unfair Competition Law.⁷⁰ However, this confidential obligation only exists during the government authorities' investigation regarding the suspected violation of the Anti-Unfair Competition Law, and, therefore, is not directly relevant to FTT.

In March 2019, China promulgated the Foreign Investment Law, which came into effect on January 1, 2020, to protect the rights and interests of foreign investors and to further open its market to them.⁷¹ This was also the first time that Chinese law has touched upon the problem of FTT.⁷² Article 22 stipulates that:

The State protects the intellectual property rights of foreign investors and foreign-invested enterprises, protects the legitimate rights and interests of

varieties or production of seeds," (2) "printing of publications," (3) "building or operation of a nuclear electric power plant," (4) "building or operation of an urban water or drainage pipeline network for a city with a population of not less than 500,000," (5) any "domestic water transportation company," (6) any "public air transportation company," (7) "general aviation companies for agriculture, forestry, or fishing," (8) "building or operation of a civil airport," (9) "basic telecommunications," and (10) "broadcast media rating services." See 2019 Negative List, *supra* note 61.

⁶⁸ Zhonghua Renmin Gongheguo Fan Buzheng Jingzheng Fa (中华人民共和国反不正当竞争) [Anti-Unfair Competition Law] (promulgated by the Standing Comm. Nat'l People's Cong., Nov. 4, 2017, effective Jan. 1, 2018) art.15 (Chinalawinfo).

⁶⁹ *Id.* art.30.

⁷⁰ Zhonghua Renmin Gongheguo Fan Buzheng Jingzheng Fa (中华人民共和国反不正当竞争) [Anti-Unfair Competition Law] (promulgated by the Standing Comm. Nat'l People's Cong., Apr. 23, 2019, effective Apr. 23, 2019), arts.15, 30 (Chinalawinfo).

⁷¹ Zhonghua Renmin Gongheguo Waishang Touzi Fa (中华人民共和国外商投资法) [Foreign Investment Law of the People's Republic of China] (promulgated by Nat'l People's Cong., Mar. 15, 2019, effective Jan. 1, 2020), art.1 (Chinalawinfo).

⁷² See, e.g., Lee, *supra* note 1, at 168; Qin, *supra* note 10, at 750.

intellectual property rights holders and related rights holders, and holds intellectual property rights infringers legally accountable in strict accordance with the law.

The State encourages technical cooperation based on the voluntariness principle and commercial rules in the process of foreign investment. The conditions for technical cooperation are determined by equal negotiation between the parties to the investment in accordance with the principle of fairness. Administrative agencies and their staff are prohibited to use administrative means to force any technology transfer.⁷³

Article 23 protects the trade secrets of foreign investors from being disclosed by government officers: “The administrative organs and their staff shall keep confidential the trade secrets known to them, of foreign investors and foreign-invested enterprises during the performance of their duties, and shall not disclose or illegally provide them to others.”⁷⁴

The legal liability for violating Articles 22 and 23 can be found at Article 39:

If a staff of an administrative organ abuses his power, neglects his duties or engages in malpractices in the promotion, protection and management of foreign investment, or leaks or illegally provides others with trade secrets that he or she knows in the course of performing his duties, he shall be punished according to law; if he commits a crime, he shall be held criminally responsible.⁷⁵

In summary, the first paragraph of Article 22 is nothing more than an official declaration that foreign investors’ IP will be seriously protected, whereas its second paragraph spells out the principles of voluntariness and fairness, and explicitly prohibits FTT.⁷⁶ Article 23 forbids government officials from disclosing the trade secrets of foreign investors.⁷⁷ Article 39 stipulates that government officials violating Articles 22 and 23 will be subject to administrative liability (penalty) and possible criminal liability.⁷⁸ An additional relevant reform is the newly added trade secret provision, Article 5, of the Administrative License Law:

Without the consent of the applicant, an administrative agency, its functionaries, or an expert on a panel shall not disclose any trade secret, undisclosed information, or confidential business information submitted by the applicant, unless the law provides otherwise, or national security or the material social and public interest is involved; and if the administrative agency discloses such information of the applicant to the public according to the

⁷³ Zhonghua Renmin Gongheguo Waishang Touzi Fa (中华人民共和国外商投资法) [Foreign Investment Law of the People’s Republic of China] (promulgated by Nat’l People’s Cong., Mar. 15, 2019, effective Jan. 1, 2020), art.22 (Chinalawinfo).

⁷⁴ *Id.* art. 23.

⁷⁵ *Id.* art. 39.

⁷⁶ *See supra* text accompanying note 73.

⁷⁷ *See supra* text accompanying note 74.

⁷⁸ *See supra* text accompanying note 75.

law, the applicant shall be allowed to file an objection within a reasonable period of time.⁷⁹

Similar to Article 22 of the Foreign Investment Law, Article 32 of the Administrative License Law prohibits FTT:

The administrative organ may not ask the applicant to submit technical materials and other materials that have nothing to do with the matters under the administrative license.

An administrative agency and its functionaries shall neither grant an administrative license conditional on transfer of technology nor directly or indirectly require transfer of technology in the process of implementation of an administrative license.⁸⁰

Article 72 of the Administrative License Law provides the administrative liability for the violation of Article 5:

Where an administrative agency or any of its functionaries violates the provisions of this Law and has any of the following circumstances, its superior administrative agency or the supervisory agency shall order corrective action to be taken; and if the circumstances are serious, administrative action shall be taken against the directly responsible person in charge and other directly liable persons in accordance with the law:

.....

(5) Illegally disclosing any trade secret, undisclosed information or confidential business information submitted by an applicant.⁸¹

Another provision relevant to FTT in the Foreign Investment Law is Article 4, which maintains the *Negative List* for foreign investment and national treatment for foreign investors.⁸² Because the Foreign Investment Law replaces three main foreign investment laws governing Sino-foreign JVs—the *Law on Sino-Foreign Equity Joint Ventures*, the *Law on Sino-Foreign Contractual Joint Ventures*, and the *Law on Foreign-Capital Enterprises*—enacted between 1979 and 1990,⁸³ its enforcement will also affect the FTT practices associated with the previously mentioned mandatory JV arrangement.⁸⁴ By emphasizing that the “treatment given to foreign investors and their investments during the invest-

⁷⁹ See *Zhonghua Renmin Gongheguo Xingzheng Xuke Fa* (中华人民共和国行政许可法) [Administrative License Law] (promulgated by the Standing Comm. Nat'l People's Cong., Apr. 23, 2019, effective Apr. 23, 2019), art. 5(2) (Chinalawinfo).

⁸⁰ *Id.* art. 31.

⁸¹ *Id.* art. 72.

⁸² *Zhonghua Renmin Gongheguo Waishang Touzi Fa* (中华人民共和国外商投资法) [Foreign Investment Law of the People's Republic of China] (promulgated by Nat'l People's Cong., Mar. 15, 2019, effective Jan. 1, 2020), art.4 (Chinalawinfo).

⁸³ See, e.g., Lee, *supra* note 1, at 167-68.

⁸⁴ See *infra* Part I.A.

ment access stage . . . is not lower than that given to their domestic counterparts,” the Foreign Investment Law is sending a strong message to foreign investors that unfair practices, such as the FTT, will no longer exist in the country.⁸⁵

In terms of the similarity and dissimilarity of FTT provisions between the Foreign Investment Law and the Administrative License Law, both address trade secret protection during the administrative process,⁸⁶ which is a key issue of FTT.⁸⁷ However, there are some important differences between the trade secret provisions in these two laws. First, the Administrative License Law is a general law governing the administrative applications, including those by Chinese nationals,⁸⁸ whereas the Foreign Investment Law is a special law regulating foreign investment activities in China.⁸⁹ Second, while the subject of Administrative License Law includes both administrative staff and external experts on a panel,⁹⁰ the Foreign Investment regulates only the confidential duty of the administrative staff.⁹¹ The inclusion of external experts in the Administrative License Law stems from the belief of foreign businesses and the USTR that external experts coming from the government, academia, or industry are possible sources of trade secret leaks.⁹² Lastly, the legal liability for the violation of the Administrative License Law is administrative,⁹³ whereas the Foreign Investment Law mentions both administrative and criminal liabilities.⁹⁴

C. Phase-One Trade Agreement

China and the U.S. agreed upon terms for the so-called “Phase-One” trade deal in December 2019, and signed the agreement on January 15, 2020.⁹⁵ Among

⁸⁵ Zhonghua Renmin Gongheguo Waishang Touzi Fa (中华人民共和国外商投资法) [Foreign Investment Law of the People’s Republic of China] (promulgated by Nat’l People’s Cong., Mar. 15, 2019, effective Jan. 1, 2020), art.4 (Chinalawinfo).

⁸⁶ See *supra* text accompanying note 73-81.

⁸⁷ See *supra* text accompanying note 52-55.

⁸⁸ Zhonghua Renmin Gongheguo Xingzheng Xuke Fa (中华人民共和国行政许可法) [Administrative License Law] (promulgated by the Standing Comm. Nat’l People’s Cong., Apr. 23, 2019, effective Apr. 23, 2019), art. 1-2 (Chinalawinfo).

⁸⁹ Zhonghua Renmin Gongheguo Waishang Touzi Fa (中华人民共和国外商投资法) [Foreign Investment Law of the People’s Republic of China] (promulgated by Nat’l People’s Cong., Mar. 15, 2019, effective Jan. 1, 2020), art.2 (Chinalawinfo).

⁹⁰ See text accompanying note 79.

⁹¹ See text accompanying note 74.

⁹² See, e.g., USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 42.

⁹³ See text accompanying note 81.

⁹⁴ See text accompanying note 75.

⁹⁵ Economic and Trade Agreement Between the Government of the United States of America and the Government of the People’s Republic of China, Jan. 15, 2020 [hereinafter US-China Economic & Trade Agreement].

others, the chapter on technology transfer focuses mostly on the FTT issue.⁹⁶ The two countries agreed that any transfer or licensing of technology should be based on market terms and voluntariness.⁹⁷ Technology transfer should not be required or pushed by the government in acquisitions, joint ventures, or other investment transactions.⁹⁸ Likewise, the government should not require or push technology transfer as a condition for approving any administrative or licensing requirements.⁹⁹ While China has already begun to address these issues in its Foreign Investment Law and Administrative Law,¹⁰⁰ this is the first time the country has explicitly agreed to prohibit FTT as a condition for market access in an international agreement.¹⁰¹

III. ANALYSIS

Despite China's recent reform and its FTT agreement with the U.S. in the Phase-One trade agreement, some of the policy issues associated with FTT require more academic analysis. This section aims to explain that while China's FTT practices have triggered some trade law issues, such practices are not uncommon in the developing world. Moreover, the data on the effectiveness of China's recent legal reform concerning FTT has yet to be observed.

A. *Technology Transfer in Exchange for Market Access*

Technology transfer has been an important approach in many countries in fostering economic growth and catching up technological development with others.¹⁰² The recent economic development in China provides an example of how

⁹⁶ *Id.* art. 2.

⁹⁷ *Id.* art. 2.1.

⁹⁸ *Id.* art. 2.2.

⁹⁹ *Id.* art. 2.3.

¹⁰⁰ See *supra* text accompanying notes 73-81.

¹⁰¹ USTR, AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE PEOPLE'S REPUBLIC OF CHINA—FACT SHEET (2019); see US-China Economic & Trade Agreement, *supra* note 95, at ch.1.; Bob Davis, Lingling Wei & William Mauldin, *U.S., China Sign Deal Easing Trade Tensions*, WALL ST. J. (Jan. 15, 2020), <https://www.wsj.com/articles/u-s-china-to-sign-deal-easing-trade-tensions-11579087018> [<https://perma.cc/LLP7-8GS5>] (“The two pages on technology transfer go beyond other agreements China has signed that dealt with that issue.”).

¹⁰² See, e.g., Prud'homme et al., *supra* note 8, at 153; Thomas K. Cheng, *A Developmental Approach to the Patent-Antitrust Interface*, 33 NW. J. INT'L L. & BUS. 1, 47 (2012); Van Smith, *Enabling Environments or Enabling Discord: Intellectual Property Rights, Public-Private Partnerships, and the Quest for Green Technology Transfer*, 42 GEO. J. INT'L L. 817, 824 (2011).

a country can benefit from foreign technologies as a host of foreign investment.¹⁰³ While host countries have various policies fostering technology transfers from foreign companies, it remains a policy puzzle to what extent a government can induce these technology transfers by granting market access to foreign companies.¹⁰⁴ FTT is normally imposed as the condition of market access.¹⁰⁵ In fact, this practice originates from a quid pro quo policy toward multinational enterprises to transfer technology in exchange for market access.¹⁰⁶ This “trade-technology-for-market” policy was fairly popular in developing countries in the 1970s,¹⁰⁷ and has existed in China since the Deng Xiaoping administration of the early 1980s.¹⁰⁸ Some countries, such as Brazil, Japan, and South Korea, had similar policies in place to restrict direct foreign investment and to access foreign technologies.¹⁰⁹

The quid pro quo policy has become an important means for the developing world to adopt new technologies from the developed world.¹¹⁰ In the 1980s, a number of developing countries pushed forward an international agreement within the United Nations to implement the quid pro quo policies and facilitate more technology transfers from the developed world.¹¹¹ Although that implementation initiative failed,¹¹² the quid pro quo approach underlying the FTT has

¹⁰³ See, e.g., Buckley & Zhou, *supra* note 36, at 20-21; Zhang Yuqing & James S. McLean, *China's Foreign Economic Contract Law: Its Significance and Analysis*, 8 NW. J. INT'L L. & BUS. 120, 120 (1987).

¹⁰⁴ See generally PRUD'HOMM & ZHANG, *supra* note 8, at 78-79.

¹⁰⁵ See, e.g., *id.*; Jeffrey N. Gordon & Curtis J. Milhaupt, *China as a “National Strategic Buyer”: Toward a Multilateral Regime for Cross-Border M&A*, 2019 COLUM. BUS. L. REV. 192, 223 (2019); OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 24, at 18; WHITE HOUSE OFFICE OF TRADE & MFG. POLICY, *supra* note 9, at 5.

¹⁰⁶ See, e.g., Thomas J. Holmes, Ellen R. McGrattan & Edward C. Prescott, *Quid Pro Quo: Technology Capital Transfers for Market Access in China*, 82 REV. ECO. STUD. 1154, 1154 (2015); see also Lee, *supra* note 1, at 152-53 (describing the technology in exchange for market access in developing countries).

¹⁰⁷ See Carbaugh & Wassell, *supra* note 13, at 313; Holmes et al., *supra* note 106, at 1154.

¹⁰⁸ Michael Dean Krebs, *Increasing the Difficulty Level: China's 2016 Mobile Game App Regulations, Another Restrictive Market Entry Barrier to Foreign Corporations*, 31 TEMP. INT'L & COMP. L. J. 521, 542 (2017); Zhou, *supra* note 47.

¹⁰⁹ See Holmes et al., *supra* note 106, at 1158; Lawrence A. Kogan, *Brazil's IP Opportunism Threatens U.S. Private Property Rights*, 38 U. MIAMI INTER-AM. L. REV. 1, 87 (2006); Lee, *supra* note 1, at 178; Glenn H. Reynolds, *International Trade Conflict in High Technology Sectors: The Japanese Satellite Example*, 12 UCLA PAC. BASIN L. J. 295, 300-301 (1994).

¹¹⁰ Holmes et al., *supra* note 106, at 1154, 1158; see also Lee, *supra* note 1, at 176-80 (explaining China's “Introducing, Digesting, Absorbing, and Re-innovating (‘IDAR’) approach” to technology development).

¹¹¹ Holmes et al., *supra* note 106, at 1158.

¹¹² *Id.*

continued to exist and has recently become one of the core issues of the U.S.–China trade disputes.¹¹³

Foreign ownership restrictions or the mandatory JV requirement for foreign investment are also a common practice in developing countries.¹¹⁴ A number of countries, such as Brazil, Bolivia, Colombia, India, Mexico, Ecuador, Peru, and the Philippines, had such practices in the 1970s in which the governments facilitated technology transfer by reviewing and intervening in JV agreements and relevant investment contracts.¹¹⁵ Host countries typically expect technology spillover and diffusion from foreign investment by imposing these ownership restrictions.¹¹⁶ China, for example, has utilized the JV arrangement as an important approach to technology transfer and has reaped its consequent benefits, such as local employment and indigenous technological capabilities.¹¹⁷

While China is not the only country with FTT policies,¹¹⁸ and the U.S. has repeatedly accused China of FTT practices over the course of almost two decades,¹¹⁹ the Trump administration has retaliated against China's practices with more fervor than any previous administration.¹²⁰ One may wonder why the U.S. has tolerated China's FTT practices for almost forty years and has only recently decided to fight against them. The answer, in part, is due to the considerable challenge in proving FTT.¹²¹ More importantly, China has become an economic giant whose economic policies can have a profound impact upon the world economy.¹²² The scale of the problem arising from FTT practices in China, combined with the country's significant market power, means that U.S. industries desperately need their own government to handle this issue.¹²³ Moreover, China's technological developments have threatened the United States' leading advantage in certain fields.¹²⁴ Because the technological and economic leadership in these fields is closely related to the United States' national interests, the U.S. cannot

¹¹³ Zhou, *supra* note 47.

¹¹⁴ See, e.g., Qin, *supra* note 10, at 755-56.

¹¹⁵ Holmes et al., *supra* note 106, at 1158.

¹¹⁶ Blomström & Sjöholm, *supra* note 47, at 916.

¹¹⁷ See, e.g., Leslie Cataldo, *A Dynasty Weaned from Biotechnology: The Emerging Face of China*, 26 SYRACUSE J. INT'L. L. & COM. 151, 166 (1998); Peter K. Yu, *From Pirates to Partners (Episode II): Protecting Intellectual Property in Post-WTO China*, 55 AM. U. L. REV. 901, 968 (2006).

¹¹⁸ See, e.g., Mastel, *supra* note 2, at 202.

¹¹⁹ See *supra* text accompanying note 19-24.

¹²⁰ Cf. Mastel, *supra* note 2, at 203 ("The U.S. government has not previously seen a need to become directly involved in policing the transfer of commercial technology, but China is a unique case.").

¹²¹ See *supra* text accompanying note 16-17.

¹²² WAYNE MORRISON, CONG. RESEARCH SERV., RL33534, CHINA'S ECONOMIC RISE: HISTORY, TRENDS, CHALLENGES, AND IMPLICATIONS FOR THE UNITED STATES 1 (2019).

¹²³ Mastel, *supra* note 2, at 202.

¹²⁴ See, e.g., Lee, *supra* note 1, at 180-81.

treat China as just another developing country and tolerate the latter's unfair IP practices, especially FTT, anymore.¹²⁵

B. Trade Law Perspective

FTT has been viewed as a trade-distortive policy and thus triggers trade law concerns.¹²⁶ In the Concept Paper issued by the European Commission ("EC"), which sets out the European Union's ideas on how to reform the WTO, the EC advocates for a reform of WTO rules to properly address FTT practices, which have constituted market access barriers and discriminatory treatment of foreign investors.¹²⁷ Other commentators similarly contend that current WTO rules are insufficient or ineffective in addressing the FTT controversy.¹²⁸ This part analyzes relevant trade law issues associated with FTT.

1. Technology Transfer

A host country's requirement of technology transfer by foreign investors is a type of "performance requirements," which can include the purchase of local products, the export of locally produced products, specific environmental actions, employment of local personnel, profit remittance restrictions, etc.¹²⁹ Performance requirements are normally imposed by host countries as conditions of foreign investment or the continued operation of an existing investment.¹³⁰

¹²⁵ See, e.g., Qin, *supra* note 10, at 757-58; see also Zhou, *supra* note 47 (noting "the worry on the U.S. side is that such practices exemplify the Chinese approach to coerce foreign companies into helping Chinese competitors attain global dominance in vital industrial sectors").

¹²⁶ OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 24, at 18.

¹²⁷ See Eur. Comm'n, *supra* note 15, at 14-17.

¹²⁸ Qingjiang Kong & Shuai Guo, *WTO Reform: Will There Be a Third Option Other than a U.S. Withdrawal and a China Expulsion?*, 14 ASIAN J. WTO & INT'L HEALTH L. & POL'Y 359, 372 (2019) (reporting the concerns of the European Union, Japan, and the U.S. regarding WTO's inability to address FTT issues); see MASTEL, *supra* note 15, at 64 (claiming that FTT is "not directly covered by the WTO"); Ernst-Ulrich Petersmann, *How Should WTO Members React to Their WTO Crises?*, 18 WORLD TRADE REV. 503, 520 (2019) (addressing the inadequacy of WTO rules restricting FTT).

¹²⁹ See, e.g., Kevin C. Kennedy, *A WTO Agreement on Investment: A Solution in Search of A Problem?*, 24 U. PA. J. INT'L ECON. L. 77, 136, 165 (2003); Jürgen Kurtz, *A General Investment Agreement in the WTO? Lessons from Chapter 11 of NAFTA and the OECD Multilateral Agreement in Investment*, 23 U. PA. J. INT'L ECON. L. 713, 727 (2002); Qin, *supra* note 10, at 752.

¹³⁰ See, e.g., Julien Chaisse, *The Treaty Shopping Practice: Corporate Structure and Restructuring to Gain Access to Investment Treaties and Arbitration*, 11 HASTINGS BUS. L. J. 225, 283 (2015); Todd S. Shenkin, *Trade-Related Investment Measures in Bilateral Investment Treaties and the GATT: Moving Toward A Multilateral Investment Treaty*, 55 U. PITT. L. REV. 541, 550 (1994).

While performance requirements are frequently utilized, especially by developing countries, for industrial policy purposes,¹³¹ they have been increasingly scrutinized in the making of bilateral and multilateral trade agreements in the last three decades.¹³² For example, the North American Free Trade Agreement (“NAFTA”)¹³³ and free trade agreements negotiated by Australia, Singapore, the U.S., and South Korea have specifically prohibited a compulsory technology transfer.¹³⁴ Nonetheless, although the Agreement on Trade-Related Investment Measures (“TRIMS Agreement”) under the WTO provides a list of prohibited performance requirements, the list does not include technology transfer.¹³⁵ Therefore, a claim against FTT based on the TRIMS Agreement may not be substantiated.

2. Mandatory JV Arrangements

Although local equity participation or forming JVs with local partners are perceived as forms of performance requirements,¹³⁶ most major trade agreements, such as the North American Free Trade Agreement (“NAFTA”) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (“CPTPP”), do not prohibit mandatory JV arrangements.¹³⁷ It appears that, under the WTO, the General Agreement on Trade in Services (“GATS”) is the only treaty to regulate mandatory JV arrangements. Article XVI of the GATS stipulates that “[i]n sectors where market-access commitments are undertaken,” members should not, “unless otherwise specified,” maintain “measures which restrict or require specific types of legal entity or joint venture through which a

¹³¹ See Chaisse, *supra* note 130, at 283; Qin, *supra* note 10, at 752.

¹³² See Chaisse, *supra* note 130, at 283-84; Lise Johnson, Lisa Sachs & Nathan Lobel, *Aligning International Investment Agreements with the Sustainable Development Goals*, 58 COLUM. J. TRANSNAT’L L. 58, 67-68 (2019); Gloria L. Sandrino, *The NAFTA Investment Chapter and Foreign Direct Investment in Mexico: A Third World Perspective*, 27 VAND. J. TRANSNAT’L L. 259, 311-14 (1994); Qin, *supra* note 10, at 752-53; Tom Ginsburg, *International Substitutes for Domestic Institutions: Bilateral Investment Treaties and Governance*, 25 INT’L REV. L. & ECON. 107, 109 (2005) (“The United States Model BIT, which has formed the basis of some 44 agreements between the United States and developing countries . . . require[s] substantial liberalization . . . by prohibiting parties from imposing performance requirements on investment, such as demands for technology transfer, local content, and export requirements.”).

¹³³ North American Free Trade Agreement art. 1106(1)(f), Dec. 17, 1992, 32 I.L.M. 289.

¹³⁴ Qin, *supra* note 10, at 753.

¹³⁵ Agreement on Trade-Related Investment Measures, Apr. 15, 1994, 1868 U.N.T.S. 186 [hereinafter TRIMS]; see also Kennedy, *supra* note 129, at 165 (indicating that technology transfer is not part of the performance requirements in TRIMS).

¹³⁶ Jose E. Alvarez, *Political Protectionism and United States International Investment Obligations in Conflict: The Hazards of Exon-Florio*, 30 VA. J. INT’L L. 1, 54 (1989); Kennedy, *supra* note 129, at 136; Shenkin, *supra* note 130, at 580-81.

¹³⁷ Qin, *supra* note 10, at 753.

service supplier may supply a service.”¹³⁸ Further, members should not place “limitations on the participation of foreign capital in terms of maximum percentage limit on foreign share-holding or the total value of individual or aggregate foreign investment.”¹³⁹ Therefore, each member’s treaty obligations for foreign ownership restrictions depends on that member’s own market-access commitments. China did not specify any exception to this requirement in its GATS Schedule,¹⁴⁰ therefore, the U.S. successfully claimed China violated its market access obligation by requiring a Chinese partner in a contractual joint venture (“CJV”) distributing audiovisual home entertainment (“AVHE”) products to hold at least 51% equity in the CJV.¹⁴¹ However, GATS is not able to solve all the FTT issues associated with JV because GATS applies only to the service sector.¹⁴² Therefore, WTO rules are still quite limited in regulating mandatory FTT conducted through JV arrangements.¹⁴³

3. China’s WTO Accession Protocol

Like all WTO members, in addition to WTO treaties, China is obliged to comply with its own working party report, the protocol of accession, and the attached schedules containing specific liberalization commitments.¹⁴⁴ Some trade law experts suggest that China’s commitments to the WTO in 2001 provide a legal basis against the country’s FTT practices.¹⁴⁵ First, China made commitments regarding the transparency in its “laws, regulations and other measures pertaining to or affecting trade in goods [and] services.”¹⁴⁶ China may violate these

¹³⁸ General Agreement on Trade in Services, art. XVI, Jan. 1, 1994, 33 I.L.M. 1167.

¹³⁹ *Id.*

¹⁴⁰ Qin, *supra* note 10, at 755.

¹⁴¹ Appellate Body Report, *China — Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WTO Doc. WT/DS/363/AB/R (adopted Dec. 21, 2009).

¹⁴² See General Agreement on Trade in Services, *supra* note 138.

¹⁴³ See, e.g., Krebs, *supra* note 108, at 542-43 (describing how China uses mandatory JV arrangement to acquire foreign technologies and circumvent WTO regulations).

¹⁴⁴ See Karen Halverson, *China’s WTO Accession: Economic, Legal, and Political Implications*, 27 B.C. INT’L & COMP. L. REV. 319, 323-24 (2004).

¹⁴⁵ See, e.g., Jessica Brum, Note, *Technology Transfer and China’s WTO Commitments*, 50 GEO. J. INT’L L. 709, 719-21, 729 (2019); Simon Lester, *Forced Technology Transfer and the WTO*, INT’L ECON. L. & POL’Y BLOG, (Mar. 29, 2018), <https://worldtradelaw.typepad.com/ielpblog/2018/03/forced-technology-transfer-and-the-wto.html> [<https://perma.cc/V28K-UL7G>].

¹⁴⁶ Accession of the People’s Republic of China, *Protocol on the Accession of the People’s Republic of China*, art 2(c) WTO Doc. WT/L/432 (Nov. 23, 2001), (“China undertakes that only those laws, regulations and other measures pertaining to or affecting trade in goods, services, TRIPS or the control of foreign exchange that are published and readily available to other WTO Members, individuals and enterprises, shall be enforced.”) [hereinafter *China’s Accession Protocol*].

commitments by failing to publish its FTT practices,¹⁴⁷ which are measures affecting trade in goods and services. In its accession protocol China pledged to not condition performance requirements on technology transfer.¹⁴⁸ China made the same commitment in the working party report.¹⁴⁹ Nevertheless, as the FTT measures are carried out without a written rule, evidence collection will be the most challenging part of such claims against them.¹⁵⁰

On June 1, 2018, the European Union (“EU”) requested consultations with China at the WTO concerning measures pertaining to the transfer of foreign technology into China.¹⁵¹ Indeed, part of the EU’s claims about China’s FTT practices were based on China’s commitments regarding the technology transfer accession protocol.¹⁵² Nevertheless, the consultation may not lead to a decision by the panel in the WTO Dispute Settlement Body because of China’s recent reform addressing the FTT issues.¹⁵³ The removal of some JV regulations and new anti-FTT provisions might have undermined the foundation of the EU’s claims.

C. *Voluntary or Forced Technology Transfer*

The line between voluntary and forced technology transfer is sometimes blurred.¹⁵⁴ The State Council in China has argued that all technology transfers in the country were voluntary and made with freedom of contract.¹⁵⁵ The Chinese government has insisted that foreign companies transferred their technologies to China for their own interests and that these transfers are normal market

¹⁴⁷ See *supra* text accompanying notes 16-17, 54-55.

¹⁴⁸ China’s Accession Protocol, *supra* note 146, at art. 7(3) (“Without prejudice to the relevant provisions of this Protocol, China shall ensure that the distribution of import licences, quotas, tariff-rate quotas, or any other means of approval for importation, the right of importation or investment by national and sub-national authorities, is not conditioned on: whether competing domestic suppliers of such products exist; or performance requirements of any kind, such as local content, offsets, the transfer of technology, export performance or the conduct of research and development in China.”).

¹⁴⁹ Report of the Working Party, *Report on Working Party on the Accession of China*, ¶ 49, ¶ 203, WTO Doc. WT/ACC/CHN/49 (adopted Oct. 1, 2001).

¹⁵⁰ See *supra* text accompanying note 17; Brum, *supra* note 145, at 732.

¹⁵¹ Request for Consultations by the European Union, *China—Certain Measures on the Transfer of Technology*, WTO Doc. WT/DS549/1 (adopted June 6, 2018).

¹⁵² Request for Consultations by the European Union Revision, *China—Certain Measures on the Transfer of Technology*, WTO Doc. WT/DS549/1/Rev.1 (adopted Dec. 20, 2018).

¹⁵³ See *supra* text accompanying note 67.

¹⁵⁴ See, e.g., BRANSTETTER, *supra* note 16, at 3; Gourdon, Andrenelli & Möisé, *supra* note 47, at 5.

¹⁵⁵ INFO. OFFICE OF THE STATE COUNCIL IN CHINA, THE FACTS AND CHINA’S POSITION ON CHINA-US TRADE FRICTION 29-30 (2018).

activities.¹⁵⁶ Every foreign investor conceivably makes its own decision regarding whether to invest in China and whether to follow the government official's suggestions regarding technology transfer.¹⁵⁷ For instance, when foreign investors decide to conduct business in China, they have already taken into account the various costs and benefits- including those resulting from FTT.¹⁵⁸ Multinational enterprises, such as BMW, can strategically keep their most advanced technologies away from China or delay their introduction to the country.¹⁵⁹ Following this line of thought, FTT does not exist at all.

In the context of a mandatory JV arrangement, some may argue that such an arrangement is not forced at all. First, it is quite a common international business practice that foreign investors provide their IP as equity to form JVs with local partners who will in return contribute valuable local resources.¹⁶⁰ Foreign business may use JV arrangements and accompanying technology transfer agreements to acquire knowledge in local market operations complexities.¹⁶¹ Indeed, some multinational enterprises, such as GM and Infiniti, have indicated that they had significantly benefited from local JV partners in China.¹⁶² Second, joint ventures may foster a new competitor in the future by providing its IP to the JV.¹⁶³ This is the nature of JV, instead of a unique phenomenon in China. Third, if the foreign party provides IP as part of the equity, it will receive licensing fees from

¹⁵⁶ *Regular Press Conference of Ministry of Commerce*, MINISTRY COM. CHINA (June 21, 2018), <http://english.mofcom.gov.cn/article/news-release/press/202003/20200302943436.shtml> [<https://perma.cc/R6CY-3APB>]; see Bradsher, *supra* note 1 (reporting China's argument that foreign companies transfer their technologies to Chinese companies "willingly . . . to get access to China's vast and growing market").

¹⁵⁷ See, e.g. Prud'homme, von Zedtwitz, Thraen & Bader, "Forced Technology Transfer" *Policies*, *supra* note 8, at 153; Prud'homme & von Zedtwitz, *supra* note 1, at 2; Qin, *supra* note 10, at 756; see also Cai & Elmer, *supra* note 1 (reporting Chinese officials' perspective that "[i]f there were coercion . . . foreign companies could choose not to invest in China. If multinationals make hefty profits on the mainland then they benefit from investing in China under terms which are neither discriminatory nor coercive").

¹⁵⁸ See, e.g. Carbaugh & Wassell, *supra* note 13, at 312; Qin, *supra* note 10, at 756.

¹⁵⁹ Anjani Trivedi, *Behind the Myth of China's Great Technology Grab*, JAPAN TIMES (Dec. 23, 2018),

<https://www.bloomberg.com/opinion/articles/2018-12-23/bmw-s-china-success-belies-technology-transfer-fears>.

¹⁶⁰ See, e.g., Duane Hall, *International Joint Ventures: Pros and Cons*, 49 SAM ADVANCED MGMT. J. 4, 5-6 (1984).

¹⁶¹ See, e.g., Arthur Ho, *Licensing in China: Practical Considerations and Tax Implications*, 10 HASTINGS INT'L & COMP. L. REV. 595, 599 (1987).

¹⁶² Grace Tsoi, *China Lets Foreign Automakers Off the Hook—But Who Really Wins?*, INKSTONE (Apr. 18, 2019), <https://www.inkstonenews.com/business/china-relaxes-restrictions-foreign-automakers-it-might-not-be-concession-you-think/article/2142280>.

¹⁶³ Thomas A. Piraino, Jr., *Reconciling the Harvard and Chicago Schools: A New Antitrust Approach for the 21st Century*, 82 IND. L. J. 345, 408 (2007).

the JV, the rate of which is subject to voluntary negotiation.¹⁶⁴ In other words, the proprietary technology is not coercively transferred to Chinese parties for free.

However, the fact that foreign investors can make decisions to enter the Chinese market or negotiate licensing fees for their IP does not mean they are not forced to transfer the technology.¹⁶⁵ Some researchers view the technology transfer requirement as an implicit tax on foreign investment.¹⁶⁶ If the foreign investor has no choice but to transfer its technology for the purpose of market access, this technology transfer is forced.¹⁶⁷ The concept of being “forced” lies with the fact that foreign investors are compelled by repercussions of failing to enter the market or the lack of alternatives to enter the market.¹⁶⁸ The idea of forced transfer is further supported by the fact that most foreign businesses are reluctant to publicize their FTT experiences due to fear of retaliation or loss of access to the large and growing Chinese market.¹⁶⁹

The possible negotiation of licensing fees between the JV parties does not eliminate the “forced” nature of the technology transfer either. The point here is whether those JVs are formed mostly because of commercial considerations instead of regulatory requirements. In many industries, a foreign business is not allowed to structure a WFOE in China;¹⁷⁰ it has no choice but to form CJVs or equity joint ventures (“EJV”) with Chinese firms.¹⁷¹ This is why the technology transfers involved are “forced.”

¹⁶⁴ See Qin, *supra* note 10, at 746, 756.

¹⁶⁵ Gourdon, Andrenelli & Mõisé, *supra* note 47, at 5 (“[A]lthough the transferor of technology might choose to transfer technology to overcome serious obstacles, and a degree of consent might therefore be involved, the obstacles may still be viewed as *forcing* the owner’s choice to give away proprietary technology.”).

¹⁶⁶ Cf. Cristina Castelli, *Trade in Goods and Services in THE GLOBAL GOVERNANCE OF KNOWLEDGE* 163, 166 (Helge Hveem & Lelio Iapadre eds., 2012) (“The aim of these instruments is to enhance technology transfer to domestic firms, but they represent an implicit tariff on intermediate goods’ import . . .”); Carbaugh & Wassell, *supra* note 13, at 312 (viewing FTT as “a tax placed on the more innovative and productive foreign companies”).

¹⁶⁷ Gourdon, Andrenelli & Mõisé, *supra* note 47, at 8; see also Krebs, *supra* note 108, at 543 (citing the statement of Robert D. Atkinson, President of the Information Technology & Innovation Foundation that “[t]hey do it with a gun to their head . . . say either you’re going to make these investments[,] or you’re not going to get access to the market”).

¹⁶⁸ PRUD’HOMM AND ZHANG, *supra* note 8, at 78-79.

¹⁶⁹ See, e.g., USTR, 2018 SECTION 301 REPORT, *supra* note 12, at 9-10, 20-21; Bradsher *supra* note 1; Cai and Elmer, *supra* note 1; Hamlin, *supra* note 1; see also Mikhaelle Schiappacasse, *Intellectual Property Rights in China: Technology Transfers and Economic Development*, 2 BUFF. INTELL. PROP. L. J. 164, 183 (2004) (illustrating how China’s large and growing domestic market attract technology transfer from foreign investors).

¹⁷⁰ See, e.g., Lee, *supra* note 1, at 153; Qin, *supra* note 10, at 747.

¹⁷¹ Lee, *supra* note 1, at 153.

A major criticism of China's FTT practices by its major trading partners is that such practices are not market oriented.¹⁷² Whether foreign companies are forced to transfer their technologies depends on whether their access to the Chinese market is provided as a default rule for all multinational enterprises. If market access should be given in the first place with no doubt, then all technology transfers or the JV requirement as a condition of market access are not voluntary at all. After all, multinational enterprises are not supposed to have to choose either transferring their technologies or forgoing the attractively vast Chinese market.¹⁷³

D. Preliminary Assessment of China's Recent Reform

While China has undertaken a series of legal reforms addressing foreign investors' concerns over its FTT practices, it is important to understand the rationale of the reforms and evaluate their effectiveness.

1. Rationale Underlying the Reform

Since China has denied every allegation of FTT by foreign businesses and its trading partners, why did it push forward the reform prohibiting FTT and pledge to forbid FTT in the Phase-One trade agreement?¹⁷⁴ Some view such reform as "a gesture of compromise in the [U.S.–China] trade war"¹⁷⁵ or an "olive branch" to de-escalate the conflict.¹⁷⁶ Furthermore, China can use the new laws to send a message to the international community regarding its official position against FTT. An optimistic viewpoint is that China's legal reform restricting FTT practices may represent the government's endeavor to use formal rules to vanquish a long-lasting informal norm. This is because legislation is sometimes the best way to root out an improper custom.¹⁷⁷

In the context of the Phase-One trade agreement, one might be curious about the actual function of the FTT provisions in it. Considering China had already

¹⁷² Kong & Guo, *supra* note 128, at 387.

¹⁷³ OFFICE OF THE U.S. TRADE REPRESENTATIVE, *supra* note 24, at 23-24.

¹⁷⁴ Ana Swanson, *China Trade Deal Details Protections for American Firms*, N.Y. TIMES (Jan. 14, 2020), <https://www.nytimes.com/2020/01/14/business/economy/trump-china-trade-deal.html> [<https://perma.cc/C3CH-FXXZ>] (reporting that although China agrees to prohibit FTT practices in the Phase-One trade agreement, it "has yet to admit that it ever forced foreign companies to transfer technology to Chinese firms").

¹⁷⁵ Qin, *supra* note 10, at 750.

¹⁷⁶ Dongwoo Kim & Isaac Lo, *What Is China's New Foreign Investment Law, And What Does It Mean for Canada and the Global Economy?*, ASIA-PACIFIC FOUNDATION FOR CAN. (Apr. 9, 2019), <https://www.asiapacific.ca/blog/what-chinas-new-foreign-investment-law-and-what-does-it-mean> [<https://perma.cc/SE7U-Q2SH>].

¹⁷⁷ See, e.g., Brian M. McCall, *Decorating the Structure: The Art of Making Human Law*, 53 J. CATH. LEGAL STUD. 23, 49-50 (2014); Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2034-35 (1996) (discussing the expressive function of law, which is to strengthen the norms it embodies and weaken those it condemns).

enacted the Foreign Investment Law and amended the Administrative License Law before the two countries entered into the Phase-One trade agreement,¹⁷⁸ why did the U.S. insist that China pledge to forbid FTT in the agreement using language similar to these two domestic laws?¹⁷⁹ A possible explanation is that the agreement would create treaty obligations that the U.S. could use as the basis of claims should China change its domestic laws or fail to effectively enforce them. Another possibility is that the Trump administration needs to document its contribution to the U.S. economy, and having China commit to eschewing FTT in an international agreement is certainly a triumph of the U.S.

2. Enforcement and Monitoring Mechanism

The recent removal of mandatory JV arrangements in certain sectors in China has been heralded by foreign investors because it represents the further opening of and access to the market. The lifting of foreign ownership restrictions also alleviates their concerns over FTT because they will have more chances to form WFOEs.¹⁸⁰ However, commentators have different viewpoints regarding the recent reform on trade secret protection in the administrative approval procedure. Most foreign investors in China seem to welcome these new provisions of the Foreign Investment Law and Administrative Law,¹⁸¹ which forbid FTT and strengthen trade secret protections.¹⁸² Nonetheless, while having these provisions in the written law is better than nothing for foreign investors,¹⁸³ the vague language in these provisions has led to uncertainties in terms of enforcement.¹⁸⁴

¹⁷⁸ See text accompanying note 73-81.

¹⁷⁹ See text accompanying note 97-99.

¹⁸⁰ See, e.g., Carbaugh & Wassell, *supra* note 13, at 314.

¹⁸¹ See *supra* Part II.B.

¹⁸² See, e.g., Ben Blanchard, Ryan Woo & Michael Martina, *Explainer: China Changes Laws in Trade War with U.S., Enforcement a Concern*, REUTERS (May 7, 2019), <https://www.reuters.com/article/us-usa-trade-china-laws-explainer/explainer-china-changes-laws-in-trade-war-with-u-s-enforcement-a-concern-idUSKCN1SD18G> [<https://perma.cc/AKE9-YWW3>] (stating that “[f]oreign business groups have in principle welcomed [the Foreign Investment Law]”); Zhou Xin, *China Approves New Foreign Investment Law Designed to Level Domestic Playing Field for Overseas Investors*, S. CHINA MORNING POST (Mar. 15, 2019), <https://www.scmp.com/economy/china-economy/article/3001780/china-approves-new-foreign-investment-law-designed-level> [<https://perma.cc/833X-ZG5N>] (quoting the comment of Jake Parker at the US-China Business Council that “we are . . . pleased with the . . . language [in the Foreign Investment Law] to further protect foreign company commercial information and trade secrets The addition of language imposing criminal penalties for sharing sensitive foreign company information adopts a much tougher deterrent against counterfeiting and [intellectual property] theft and will offer new avenues for the enforcement of [intellectual property] protection”).

¹⁸³ See, e.g., Prud’homme & Zedtwitz, *supra* note 1, at 11 (arguing that multinational enterprises in China generally benefit from these provisions prohibiting FTT).

¹⁸⁴ See, e.g., Lee, *supra* note 1, at 169; Hamlin, *supra* note 1; see also Cai & Elmer, *supra* note 1 (reporting that “foreign businesses are sceptical about enforcement of the law”); Kim

For example, although Article 39 of the Foreign Investment Law mentions the administrative and criminal liability for government officials who violate the FTT provision and confidential obligation set forth in Articles 22 and 23,¹⁸⁵ the exact administrative liability is not stipulated in the law. Consequently, the government has broad discretion in imposing such liability, which might constitute an action as light as giving the breaching official a warning. Therefore, more detailed administrative regulations would be helpful for enforcing the administrative liability speculated in Article 39. Similar concerns regarding the ambiguous administrative liability exist in Article 72 of the Administrative License Law.¹⁸⁶ Furthermore, while Article 39 of the Foreign Investment Law mentions criminal liability, it does not actually impose any criminal liability on the breaching officials—whether the involved government official has committed a crime depends on the application of criminal law and other relevant laws.¹⁸⁷ In other words, although Article 39 indicates the possibility of establishing criminal liability, it has not actually changed or established any criminal liability. Third, some foreign investors still doubt whether forced technology transfer will be eliminated even after the enactment of the Foreign Investment Law.¹⁸⁸ Given these uncertainties regarding enforcement of the Foreign Investment and Administrative laws, I have argued elsewhere that actual enforcement will depend on the Chinese government’s determination to eliminate the FTT practice in the country.¹⁸⁹

The Technology Transfer chapter in the Phase-One trade agreement has enforcement problems similar to those mentioned above in the context of the Foreign Investment Law.¹⁹⁰ The U.S.–China Economic and Security Review Commission has raised the concern that compared to other chapters in the agreement, “there are no monitoring guidelines, enforcement mechanisms, clear deadlines, or trade targets to meet [in this chapter]. Absent firm commitments, the U.S. may lack metrics by which to judge China’s compliance.”¹⁹¹ Therefore, while

& Lo, *supra* note 176 (quoting Jacob Parker of the U.S.-China Business Council “[w]hile the language on criminal liability [for sharing sensitive foreign company information] is positive, it will be difficult to enforce”); Qian Zhou, *China’s New Foreign Investment Law: A Backgrounder*, CHINA BRIEFING (Oct. 17, 2019), <https://www.china-briefing.com/news/china-new-foreign-investment-law-backgrounder/> [<https://perma.cc/3XW4-AK9G>] (predicting that “[t]he lack of details could cause loopholes to emerge that may bring new difficulties for foreign business operating in China”).

¹⁸⁵ See *supra* text accompanying note 75-78.

¹⁸⁶ See *supra* text accompanying note 81.

¹⁸⁷ See *supra* text accompanying note 75.

¹⁸⁸ Blanchard, Woo & Martina, *supra* note 182; Wernau, *supra* note 14.

¹⁸⁹ See, e.g., Lee, *supra* note 1, at 170; see also Lester & Zhu, *supra* note 31 (forecasting that “[w]hether . . . [the Foreign Investment Law] are effective in stopping forced technology transfer will depend on the implementation”).

¹⁹⁰ See *supra* text accompanying note 185-189.

¹⁹¹ Virgil Bisio, Charles Horne, Ann Listerud, Kaj Malden, Leyton Nelson, Nargiza Salidjanova & Suzanna Stephens, *The US-China “Phase One” Deal: A Backgrounder*, U.S.-

having China pledge to restrict FTT in the trade agreement together with its domestic law reform is a ceasefire, it is not the end of the FTT story for the U.S. Although FTT by its nature is difficult to prove, China may further use these anti-FTT provisions in the trade agreement and its domestic laws to defend itself against any future claim of FTT. Similar to the Foreign Investment Law and the Administrative Law, the success of the Technology Transfer chapter in the Phase-One agreement hinges on China's determination to fulfill its commitment of prohibiting FTT practices.¹⁹² Therefore, the next step for the U.S. to address this issue is to build a sound monitoring mechanism to evaluate the actual enforcement of the law.

IV. CONCLUSION

FTT in China provides an interesting example of the intricate relationship between technology innovation and economic growth in national development. It not only illustrates the economic and technological competition between the two major powers in the world but also reflects the crossroads of China's economic development. Like many developing countries, China has adopted the *quid pro quo* or "trade-technology-for-market" policy to induce technology transfer from the developed world. However, with the rapid economic and technological development in the country, China's major trading partners have scrutinized the justification of this policy. Subsequently, China has undertaken a series of reforms that restrict FTT practices under external pressure, particularly from the U.S. Although China may only reluctantly initiate the reforms, the consequence of the reforms may enable the country to achieve its goal of indigenous innovation. Without FTT from foreign enterprises, Chinese companies must rely more on their own innovation capabilities and market activities. Although this situation might harm China's short-term economic development, it provides a new opportunity for the country to build its global competitiveness upon independent innovation. Moreover, FTT remains an unsolved issue in the international economic environment. While China's trading partners may build a claim on China's WTO accession protocol, a more general and comprehensive approach to FTT under the WTO rules will be desirable for the balance of market access, technology transfer, and economic development.

CHINA ECON. & SECURITY REV. COMMISSION (Feb. 4, 2020), *see also* James D. Schultz, *US Deal with China Is a Victory for Trump, But More Still Needs to Be Done*, CNN BUSINESS (Jan. 19, 2020) <https://edition.cnn.com/2020/01/19/perspectives/us-china-phase-one-trade-deal/index.html> [<https://perma.cc/LSM9-YUSP>] (arguing "that particular section [on technology transfer] in the [Phase-One] agreement lacks teeth").

¹⁹² Bradsher, *supra* note 1 ("The question is whether China will stick to its pledges [in the Phase-One trade agreement]."); Swanson, *supra* note 174 ("The [Phase-One] agreement is expected to include significant concessions to protect U.S. technology and trade secrets, but its success hinges on whether China will follow through on its commitments.").