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Managing Trade Conflicts in the ICT Industry: A Case Study of EU–Greater China Area*

Han-Wei Liu** and Shin-Yi Peng***

ABSTRACT

Trade policy is formulated through a rather complex decision-making process that involves two-way interactions between actors in public and private sectors. Such interactions are of particular importance in resolving trade controversies in the information and communication technology (ICT) sector. Focusing on the conflicts between the EU and its trading partners in the Greater China Area regarding certain innovation policies in this high-tech industry, this Article underscores how catch-up strategies adopted by latecomer economies in East Asia may implicate the world trade order in recent years. Loosely built upon the insights of public-private network theory, this Article identifies key variables—economic, legal, and political considerations—most pertinent to the EU s strategies to manage these claims. By unpacking these underlying factors that turn on truces or peace in trade conflicts, this Article contributes to the scholarly debate by indicating possible direction in which the stream will flow inside the trade policymaking process.

INTRODUCTION

Long before the establishment of the World Trade Organization (WTO) in 1995, European policymakers preferred a diplomatic approach to trade disputes. At the time, the European Union (EU) used defensive legal approaches more often than offensive approaches to pursue its interests.[1] Since the creation of the WTO, however, the EU has joined the USA to become one of the most active players in the dispute

* The term of 'Greater China Area' is generally used to refer to Mainland China, Hong Kong, Macau, and Taiwan as a whole. For the present, we use this term by simply focusing on the economic ties between these economies without having any political connotation.

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1 For the present purpose, we use the terms of 'EU' and 'EC' interchangeably.

settlement system.[2] As of this writing, there are 95 cases in which the EU acts as a complainant, far exceeding what it had done throughout the pre-WTO era.[3] The EU trade policy, as Gregory Shaffer aptly remarked, had transformed from 'diplomatic, inward-looking, and reactive' to one that is more 'outward-looking and export-oriented based on judicialized international economic relations'.[4] Such a shift, according to this network theory, is underpinned by complicated public–private partnerships in the region, which helped European policymakers assess economic impacts, the nature of trade barriers, foreign policies, and the merits of legal claims under the laws of the WTO and other preferential trade agreements, among other considerations. Typically, legal proceedings would not kick in unless diplomatic and local remedies had been exhausted.[5] Some sort of cost-effective analyses, in other words, is still required before the EU policymakers to judicialize trade matters through the WTO dispute settlement system.

These dynamics—the role of private sector enterprises in particular—as have been seen from the negotiation history of the Information Technology Agreement (ITA),[6] are of significant relevance in shaping trade policy in this digital world

2 In 1984, the European Community introduced the Council Regulation 2641/84, known as 'New Commercial Policy Instrument' (NCPI), which was intended, in part, to give private sectors some opportunities to invoke the EU's intervention against illicit commercial practices by third countries.

Yet, the NCPI was of little importance in practice. It was not until 1996 when the EU introduced the 'New Market Access Strategy' through its Council Regulation 3286/94, effective in 1995, known as 'Trade Barrier Regulation' or 'TBR' that European private enterprises played a more active role by petition the Commission to combat against foreign trade barriers. The EU thus moved toward a systematic and coordinated use of available instruments, including the dispute settlement system, and its overall trade policy has become 'more proactively on opening foreign markets for European firms, rather than on defending the EU's domestic market from foreign goods'. For a recount, see e.g. Communication from the Commission, *The Global Challenge of International Trade: A Market Access Strategy for the European Union*, COM (96) 53 final; Marco Bronckers, 'Private Participation in the Enforcement of WTO Law: the New EC Trade Barriers Regulation', 33(2) Common Market Law Review 299 (1996); Petros C. Mavroidis and Werner Zdouc, 'Legal Means to Protect Private Parties' Interests in the WTO-the Case of the EC New Trade Barriers Regulation', 1(3) Journal of International Economic Law 407 (1998); Gregory Shaffer, *Defending Interests: Public-Private Partnerships in WTO Litigation* (Washington, DC: Brooking, 2003), at 65–102 [hereinafter Shaffer, *Defending Interests*]; Gregory Shaffer, 'What's New in EU Trade Dispute Settlement? Judicialization, Public-Private Networks and the WTO Legal Order', 13(6) Journal of European Public Policy 832 (2006) [hereinafter Shaffer, 'What's New in EU Trade Dispute Settlement?']; Alasdair R. Young and John Peterson, 'The EU and the New Trade Politics', 13(6) Journal of European Public Policy 795 (2006); Geert A. Zonnekeyn, *Direct Effect of WTO Law* (London: Cameron May, 2008), at 194–229.

3 See WTO, 'Disputes by Country/Territory', https://www.wto.org/english/tratop_e/dispu_e/dispu_by_country_e.htm (visited 29 January 2016).

4 Shaffer, 'What's New in EU Trade Dispute Settlement?', above n 3, at 835.

5 See ibid, at 839. See also Council Regulation (EC) No. 3286/94 of 22 December 1994 laying down Community procedures in the field of the common commercial policy in order to ensure the exercise of the Community's rights under international trade rules, in particular those established under the auspices of the WTO (OJ L 349, Article 11).

6 Private sectors have been a powerful driver behind ICT-related trade matters. A classic example is the conclusion of the ITA. Following the failure to liberalize trade in a number of electronic devices during the Uruguay Round, the US computer enterprises regrouped in 1994 under the banner of the Information Technology Industry Council (ITI), later joined by the Japanese Electronic Industry Development Association (JEIDA) and the European Association of Manufactures of business Machines and Information Technology Industry (EUROBIT), among others, as a strong advocate of the ITA in the USA, Japan, the EU, and elsewhere. For a background, see e.g. WTO Secretariat, *15 Years of the Information Technology Agreement* Geneva: (WTO,

marked by information and communication technology (ICT).[7] What makes this ICT industry interesting in the global trade context is that it is, and will continue to be, in a state of dynamic and unpredictable changes. These emerging challenges make various firms incapable of operating as solely independent entities, but rather must become part of the supply chain.[8] As global supply chains have been reoriented, latecomer economies in Asia, especially for the present purpose, China and Taiwan—two powerhouses in the high-tech sector with each accounting for over 1.43 and 15.2 billion euros in terms of the ICT trade with the EU, have emerged as the center of gravity of most manufacturing and assembly work of key ICT devices.[9] As the economic structure changes, so does the way in which trading partners resolve their trade conflicts. The way in which the EU settles trade conflicts with its Greater China Area partners in terms of the ICT sector offers an interesting case study of public–private networks acting in the shadow of the WTO rules.

Since the 1980s, economies on both sides of the Taiwan Strait have benefited from their respective manufacturing sectors. Yet, such economic growth came hand in hand with the aggravation of social problems, including environmental pollution, depletion of natural resources, and underemployment of labors. Worse yet, domestic manufacturers have long suffered from what Richard P. Suttmeier and Yao Xiangkui coined as the 'technology trap'—the lack of innovative capacities led China to import advanced technologies from abroad at the expense of their competitiveness.[10] Royalties and rigid licensing terms associated with international technology transfer significantly undercut the profit margins of manufacturers in China and Taiwan. This

2012), https://www.wto.org/english/res_e/publications_e/ita15years_2012full_e.pdf (visited 20 January 2016), at 11 [hereinafter *15 Years of the ITA*]; Petros C. Mavroidis, *The Regulation of International Trade: Volume 1: GATT* (Cambridge: The MIT Press, 2016), at 158–162.

7 For the purpose of this article, the term 'ICT' is broadly understood as covering 'any equipment or interconnected system or sub-system of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, or duplication, of data or information'. See Andrej Fatur, *EU Competition Law and the Information and Communication Technology Network Industries: Economic Versus Legal Concept in Pursuit of (Consumer) Welfare* (Oxford: Hart, 2011), at 15.

8 Jukka Hallikas et al., 'The Evolution of the Network Structure in the ICT Sector', 115 International Journal of Production Economics 296 (2008), at 296–297.

9 See e.g. Alessia Amighini, 'China in the International fragmentation of Production: Evidence from the ICT Industry', 2(2) European Journal of Comparative Economics 203 (2005); Barbara A. Fliess and Pierre Sauvé, *Of Chips, Floppy Disks and Great Timing: Assessing the Information Technology Agreement*, Les Cahiers de l'IFRI, No. 26 (Paris: Institut Français des Relations, 1998), at 10–11 (reporting that 'developing countries of Asia offer some of the greatest market access opportunities for firms located in industrial countries').

10 Technology trap can be understood against the broader economic background of 'middle-income trap' facing emerging economies. While developing countries' competitiveness has been undercut as the wages rise in labor-intensive sectors, the laggard innovation makes it difficult to continue high rates of economic growth and shift economic activities into higher skilled sectors. For a discussion of technology trap in China, see e.g. Richard P. Suttmeier and Yao Xiangkui, *China's Post-WTO Technology Policy: Standards, Software, and the Changing Nature of Techno-Nationalism*, National Bureau of Asian Research, NBR Special Report No. 7 (2011), at 7. For an account of the way in which middle-income countries deal with their WTO trading partners, see generally Gregory Shaffer and Charles Sutton, 'The Rise of Middle-Income Countries in the International Trading System', in Randall Peerenboom and Tom Ginsburg (eds), *Law and Development of Middle-Income Countries: Avoiding the Middle-Income Trap* (Cambridge: Cambridge University Press, 2014), at 59–83. We are grateful to an anonymous reviewer for pointing out this reference.

was even more true after both economies joined the WTO after the early 2000s and were bound by the WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs).[11]

Such disadvantages vis-à-vis their Western counterparts have set off an alarm for policymakers in China and Taiwan, and a number of innovation policies have come into play.[12] In China, standards and subsidies are considered a strategic tool to catch up with its global competitors in terms of productivity. China's sheer market size lends itself to support its domestic firms by creating indigenous standards, regardless of whether foreign market participants accept them. By including Chinese-owned patents in indigenous standards, China attempted to readjust the position of its domestic manufacturers in the global supply chain. The now-infamous wireless LAN authentication (WAPI) and the enhanced versatile disk (EVD), as noted below, are two of many Chinese homegrown standards that have arisen over the past decade. Standards initiatives, however, are only part of China's overall strategic plan. Other policy instruments, notably subsidies, also play a crucial role in the Chinese government's attempt to narrow the gap between China and developed countries in high-tech sectors. As detailed below, China's subsidies to its telecommunication giants, such as Huawei and ZTE, provide vivid illustrations.

Like China, the Taiwan government also strived to assist its ICT firms in moving up the global value chain by reducing the burden of royalties. In contrast to their Chinese counterparts, however, Taiwan' policymakers have relatively little policy space to achieve the same end. The lack of market power and installed base, for instance, makes it difficult for this small economy to forge ahead with its own standards without considering stakeholders from abroad. In a way, therefore, intellectual property rights (IPR)-related measures, as noted in the recordable compact disks (CD-R) case below, seemed a sensible fallback option for Taiwan to support its domestic high-tech industry.

The use of these instruments by China and Taiwan has raised the eyebrows of the ICT industry stakeholders and, of course, trade policymakers of major economies, including the EU. The EU has voiced its concerns on different occasions. Yet the EU has not brought any of these measures to WTO adjudicators. Apparently, the EU found the judicial approach less cost-effective in promoting its economic interests of ICT trade in the Greater China Area. What is less clear, however, is why this was so: what are the underlying factors that may lead the EU to opt for alternatives to WTO legal proceedings to address these conflicts? To further complicate the matter, recall *EC–IT Products* where the EU took a hard stance by defending its tariff classifications of certain ICT products under the ITA.[13] Contrasting the EU's approaches toward these trade

11 Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Legal Instruments - Results of the Uruguay Round, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994) [hereinafter 'TRIPs Agreement'].

12 The term 'innovation policy', or from a systematic perspective, 'national innovation system', refers to a set of policy instruments that aim at supporting science and technology developments, including, subsidies, public procurement, standards, IPR-related policies, antitrust, and so on. See e.g. Jorge Niosi et al., 'National Systems of Production: In Search of a Workable Concept', 15 Technology in Society 207 (1993).

13 *European Communities and Its Member States – Tariff Treatment of Certain Information Technology Product*, WT/DS375 (376, 377), adopted 21 September 2010 [hereinafter *EC–IT Products*].

controversies would seem to indicate that EU policymakers are relatively moderate in their use of the WTO legal proceedings on the side of exports, but much tougher when it comes to protecting the domestic ICT market. But why? Why did the EU allow for more flexibilities on one hand, but take a hardline on the other? What are the legal and non-legal considerations, as well as the role of private sectors, in this context?

For analytical purposes, this article refers to the way in which the EU managed ICT trade controversies vis-à-vis China and Taiwan as manifesting in three forms: weak form, semi-strong form, and strong form. In the weak form, the EU seems to simply make some noise without a clear plan to crystalize legal actions against counterparties. In the semi-strong form, European policymakers would seriously consider resolving trade claims before the WTO adjudicators. Responses of this kind can be exhibited by, for example, official investigation reports by trade authorities, which specify the timeframes and ways in which counterparties can 'correct' relevant measures. Finally, strong-form responses are evidenced when the EU opted for legal proceedings under the WTO dispute settlement mechanism.

By applying this analytical framework to selected case studies, the purpose of this article is two-fold. First, it expands upon prior studies that examine how public–private nexus play out behind the EU's strategies to resolve trade conflicts. While it is too early to generalize our findings to establish a comprehensive model to predict the outcome of trade conflicts across different contexts, this analytical framework helps underscore key variables that may escalate conflicts into lawsuits before the WTO adjudicators. Unpacking the underlying economic, legal, and political factors behind the selected case studies would offer a broader, more integrative understanding of the way to manage trade conflicts in this dynamic sector. Second, and more crucially, such understanding is linked to the reason why we are concerned about the emerging economies' innovation policies in the ICT industry. Many emerging economies that struggle with middle-income traps tend to perceive information technologies as a key driver to catch up with industrialized countries.[14] Depending upon the endowments of each country, such catch-up process involves various types of innovation policy instruments,[15] some of which lie in the legal gray zone from the trade law perspective. Despite such trade concerns, however, the WTO dispute settlement mechanism is not necessarily the best way to manage trade conflicts given the complex settings of the ICT industry. For one, the short life cycle of the ICT products casts doubt about the effectiveness of bringing a lawsuit before the WTO tribunals.[16] For another, as developing countries in Asia have become a hub

14 See e.g. Martin Kenney et al., 'Coming Back Home After the Sun Rises: Returnee Entrepreneurs and Growth of High Tech Industries', 42(2) Research Policy 391 (2013) (discussing how East Asian countries like China, India, and Taiwan to attract 'returnees'—a foreign national who left their home country for higher education and work abroad—to develop the ICT industry to catch up with advanced economies).

15 See e.g. Byeongwoo Kang et al., 'Comparison of Chinese and Korean Companies in ICT Global Standardization: Essential Patent Analysis', 38(10) Telecommunications Policy 902 (2014), at 903 (pointing out that technological factor and the size of internal market would affect a country's catch-up strategies).

16 As Moore's Law observes, the power and memory of computer semiconductors are doubled every 18 months; these dynamics drive technologies advance rapidly and thus shorten the life cycle of ICT products. See e.g. Robert R. Schaller, 'Moore's Law: Past, Present, and Future', 34 IEEE Spectrum 52 (1997), at 52, 55.

attracting trade and investment in information technology, Western firms not only compete, but often collaborate with their counterparts in this region.[17] The intertwined relationships among various industry stakeholders along the fragmented supply chain suggest that the ICT-related trade disputes are not a zero-sum game; a more dedicated approach that combines both legal and non-legal tools is required. Overall, by using the EU and Greater China Area as a case study, this article seeks to identify the patterns and underlying factors from these seemingly disconnected episodes, which may cast light on how the EU may manage other latecomers' catch-up strategies in the face of similar complex settings.

With this in mind, we begin by introducing China's indigenous innovation policies with a focus on two instruments, namely, standards and subsidies. Section I examines how the EU approaches these regulatory interventions and identify crucial variables underlying the interactions. Section II turns to the EU's patterns of managing the ICT-related trade conflicts vis-a-vis Taiwan in terms of Taiwan's CD-R/RW compulsory license and *EC–IT Products*. Section III concludes by offering some final thoughts.

I. EU–CHINA TRADE CONFLICTS ON ICT INNOVATION POLICIES

A. The EU's weak-form responses to China's indigenous standards policies

1. China's indigenous innovation policy grows up

Science and technology development has been back on track since Deng Xiaoping took over power in the late 1970s.[18] On top of China's regulatory agenda at that time was exploiting resources from abroad by building an investment climate to attract financial and technological assets from abroad.[19] China's zeal in pursuit of technological independence gained new momentum after it became an observer of the General Agreement on Tariffs and Trade (GATT) in 1984. It became clear to the Chinese leaders that integration into a multilateral trading system inevitably required a robust national innovation system. China's indigenous innovation policy entered its prime after it joined the WTO as the 143th member in 2002.[20] In its 10th Five-Year Plan (2002–05), the Chinese government highlighted the importance

17 For instance, empirical studies show that research and development (R&D) activities in the ICT industry are internationalized: Asia has been a preferred location of R&D activities for both the US and EU-owned multinational firms, while the USA and EU together attract more than 20% of the R&D centers owned by Asian high-tech companies. Depending upon the level of international collaboration, the ownership of the R&D outputs vary: the USA plays a key role in owning inventions created by Asian inventors, followed by the EU. Such a strong linkage could presumably turn judicial approach into a double-edged sword for Western firms. For a background of global R&D network in the ICT industry, see Giuditta De Prato and Daniel Nepelski, 'Internationalization of ICT R&D: A Comparative Analysis of Asia, the EU, Japan, the USA, and the RoW', in Guiditta De Prato et al. (eds), *Asia in the Global ICT Innovation Network: Dancing with the Tigers* (Oxford: Chandos Publishing, 2013), at 147–178.

18 Sylvia Schwaag Sergere and Magnus Breidne, 'China's Fifteen-Year Plan for Science and Technology: An Assessment', 4 Asia Policy 135 (2007), at 138.

19 Suttmeier and Yao, above n 11, at 13.

20 WTO, 'Understanding the WTO: Members and Observers', https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm (visited 28 January 2016). For a background, see e.g. Yang Guohua and Cheng Fin, 'The Process of China's Accession to the WTO', 4 Journal of International Economic Law 297 (2001).

of indigenous technologies by identifying three key elements for China's technology strategies in the post-WTO era: patents, standards, and human resources.[21]

Against this background, in 2006 China launched the 'National Mid-Term and Long-Term Science and Technology Development Plan (2006-2020)', known to the West as 'MLP' or 'MLP-2006-2020', setting forth the groundwork for the nation's innovation policies.[22] The goal of the MLP is to transform China into an innovative country by 2020 and a global leader by 2050.[23] To this end, China's policymakers adopted a number of regulatory initiatives as supporting policies, including creating the 'Indigenous Products Catalogues', giving preferential treatment to indigenous innovation products in government procurement, and granting tax incentives to qualified firms in selected sectors.[24] Among these policies, standards were a focal point. In its 12th Five-Year Plan, for instance, China's policymakers placed great emphasis on standards by allocating public funds for the development of indigenous standards in strategic industries, including the ICT sector.[25]

For the past decade or so, China has released various ICT standards. In 2011 alone, it was reported that China's standardization authority identified over 900 standards to be completed in the years to come.[26] Notable examples include EVD, WAPI, Time Division Synchronous Code Division Multiple Access (TD-SCDMA), Audio Video Coding Standard (AVS), and Unified Charger for Mobile Telecommunications Terminal Equipment (UCMT) (YD-T/1591-2006).[27]

2. Case studies: WAPI and EVD standards driven by technology trap concerns

These Chinese indigenous standards come in different flavors. Some of them are mandatory while others are voluntary still others seem to fall somewhere in

21 Guo min jin gji he she hui fa zhan di shi ge wunian jihua (2001–05) [The Tenth Five-Year Plan for the Development of National Economy and Society] (promulgated by People's Cong. Fourth Session, 15 March 2001) (P.R.C.); Wo guo jue ding shi shi sanda keji zhan lue [The National Decides to Adopts Three Major Technology Strategies], *People's Daily*, 10 January 2002, at 002.

22 Guo jia zhong chang qi ke ji fa zhan gui hua (2006–20) [The National Mid-Term and Long-Term Science and Technology Development Plan] (2006–20) (promulgated by the St. Council, 9 February 2006).

23 In late 2010, the State Council, China's highest administrative organ, issued another administrative order, namely, 'Decision to Accelerate the Development of Strategic Emerging Industries'. This order stated explicitly that by 2020, the selected strategic industries' share of gross domestic products (GDP) would be increased to 15%, while the overall dependence on foreign technology would be reduced to 30%. See e.g. Shin-Yi Peng, 'Standards as a Means to Technological Leadership? China's ICT Standards in the Context of the International Economic Order', in Lisa Toohey et al. (eds), *China in the International Economic Order: New Directions and Changing Paradigms* (Cambridge: Cambridge University Press, 2015), at 128, 130 [hereinafter Peng, 'Standards as Means to Technological Leadership'].

24 See Shi shi 'Guo jia zhong chang qi ke zue he ji shu fa zhan gui hua gang yao (2005–20) ruo gan pei tao zheng ce de tong zhi (2005–20) [Supporting Polices for the Medium-and Long-Term National Plan for Science and Technology Development] (2005–20) (promulgated by the St. Council, 26 February 2006, effective 26 February 2006) [hereinafter '2006 Supporting Policies'].

25 Peng, 'Standards as Means to Technological Leadership', above n 24, at 131.

26 Ibid.

27 See James McGregor, *China's Drive for "Indigenous Innovation": A Web of Industrial Policies*, (2011), at 28–29, https://www.uschamber.com/sites/default/files/legacy/reports/100728chinareport_0.pdf (visited 28 January 2016); James Lewis, *Building An Information Technology Industry in China: National Strategy, Global Markets*, CSIS Report (2007), http://csis.org/files/media/csis/pubs/070508_lewischinait.pdf (visited 29 January 2016).

between.[28] And, although these standards are often developed in the name of public interests (e.g. cyber-security, environmental protection), they are all driven, in large part, by technology trap concerns.

As an illustration, let us consider the WAPI standard. In May 2003, two Chinese standardization agencies—the Standardization Administration of China (SAC) and the Administration for Quality Supervision, Inspection, and Quarantine (AQSIQ)—issued a new encryption standard for wireless devices, WAPI.[29] China required that all wireless devices to be placed on the Chinese market comply with the WAPI by the end of 2003. While China seemed to defend its measure by citing security loopholes in the IEEE-802.11 standard, known as 'Wi-Fi', this regulatory intervention was in fact closely intertwined with IPR issues.[30] The implementation of the WAPI standard required access to certain encryption technologies owned by a handful of Chinese firms.[31] For foreign firms, therefore, compliance with the WAPI standard would entail obtaining licenses from their local counterparts.[32] In a way, the WAPI could help the Chinese enterprises gain an upper hand in gaining the competitive advantage as compared to Western chipmakers at home and abroad.[33]

28 Although the Chinese government often designs these standards in a voluntary fashion (e.g. EVD), the line between voluntary and mandatory can be blurred in practice. For instance, while the WAPI was originally planned as a technical regulation, China later postponed its implementation, thereby turning the WAPI into voluntary. Yet, the WAPI still gained certain level of market acceptance for the Chinese government in January 2006 directed all government purchases to be WAPI-compatible. Thus, despite its voluntary nature, China leveraged its government procurement market to reshape market outcome. Similar initiatives can be found in the TD-SCDMA, a 3G standard for Chinese mobile network. The fact that the TD-SCDMA was given preference by the government procurement led this voluntary standard rather popular among private sector firms. See Peng, 'Standards as Means to Technological Leadership', above n 24, at 131–136; Brian J. DeLacey et al., 'Government Intervention in Standardization: the Case of WAPI' (September 2006), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=930930 (visited 28 June 2016), at 14.

29 Guo jia zhi liang jian du jian yan jian yi zong ju, guo jia bian zhun hua guan li wei yuan hui guan yu wu xian ju yu wang qiang zhi xing guo jia biao zhun shi shi de gong gao [Administration for Quality Supervision, Inspection, and Quarantine (AQSIQ) and Standardization Administration of China (SAC)'s Notification regarding Implementation of National Mandatory Standard for WLAN] (promulgated by AQSIQ and SAC) (26 November 2003).

30 See Christopher S. Gibson, 'Globalization and Technology Standards Game: Balancing Concerns of Protectionism and Intellectual Property in International Standards', 22 Berkeley Technology Law Journal 1403 (2007), at 1435.

31 See generally DeLacey et al., above n 29.

32 Gibson, above n 31, at 1436–1437.

33 The details of the encryption technologies used in the WAPI standard were controlled by 24 Chinese companies and some of them are, in fact, potential competitors with Western firms. To implement the WAPI standard, foreign chipmakers were required not only to pay a per-chip royalty but cooperate with their Chinese counterparts in terms of R&D. Such cooperation means that foreign firms may have to share their proprietary technologies with their potential competitors. Worse still, as the WAPI was designed incompatible with the Wi-Fi, foreign firms needed to set up a China-specific product line and maintain local facilities, which would, increase the manufacturing costs for foreign chipmakers. See Heejin Lee and Sangjo Oh, 'The Political Economy of Standards Setting by Newcomers: China's WAPI and South Korea's WIPI', 32(9–10) Telecommunications Policy 662 (2008), at 666; United States International Trade Commission, *China: Intellectual Property Infringement, Indigenous Innovation Policies, and Framework for Measuring the Effects on the U.S. Economy* (USITC Publication 4199, November 2010), at 5–15 ('Inclusion of WAPI technology adds costs for manufacturers, who must work with local companies to make the hardware as well as pay royalties for the Chinese technologies'); Aimee Boram Yang, 'China in Global Trade: Proposed Data Protection Law and Encryption Standard Dispute', 4 I/S: A Journal of Law and Policy for the Information Society 897 (2008–09), at 919 (pointing out that the

The EVD standard is yet another example. For years, China has been dominant in producing digital optical storage media, such as CD, DVD players, computer disk drives, as well as high-definition disks.[34] For instance, China's DVD manufacturers alone accounted for some 75% of the global output in 2003.[35] Yet, despite its production capacity, the profits reaped by the Chinese producers were rather limited. Royalties are a major source of constraints that undercut profit margins. Worse, as the DVD format has been penetrating the markets around the globe, China's downstream manufacturers were left little room to renegotiate the licensing terms.[36]

To alleviate such negative ramifications, developing an indigenous standard emerged on the radar of China's policymakers in the late 1990s.[37] The Ministry of Information Industry and the State Trade and Economic Commission began to create a homegrown standard by coordinating a group of government-funded research institutes and the DVD manufacturers to form an entity called 'Beijing E-World Technology'.[38] These efforts were realized in the advent of the 'Advanced High Density Disc System', which was later blended with Taiwan's technologies and became the EVD, a competing format to the DVD.[39] While the EVD was far from a commercial success and was removed from the shelf shortly after the emergence of next-generation optical storage technologies like high-definition digital video disk (HD-DVD) and Blu-Ray,[40] such standards initiatives nevertheless slashed royalty payments for the Chinese manufacturers.[41] Studies indicated that the announcement of the EVD was soon followed by a royalty concession from major players who owned patents critical to the DVD standard.[42] In sum, notwithstanding the lacking market success, the EVD yielded some tangible outcomes to serve the interests of the Chinese ICT industry.[43]

WAPI can hurt foreign firms in several ways. For one, it would force foreign companies to conclude co-production agreements with their Chinese competitors at the risks of a potential loss of the IPR. For another, the WAPI standard could lead foreign chipmakers to depend upon their Chinese competitors' patents).

34 Michael Murphree and Dan Breznitz, 'Innovation in China: Fragmentation, Structured Uncertainty, and Technology Standards', 2013 Cardozo Law Review De Novo 196 (2013), at 204.

35 Ibid, at 207.

36 Ibid.

37 Ibid.

38 Greg Linden, 'China Standard Time: A Study in Strategic Industrial Policy', 6 Business & Policy 1 (2004), at 15.

39 Murphree and Breznitz, above n 35, at 208.

40 Ibid.

41 For products using EVD standard, the licensing fee was $2 per unit. By contrast, it was around $13–$20 per unit for those following foreign standards. Ibid.

42 For instance, it was reported that royalties for domestically sold DVD players were reduced from $21 to $12 per unit, and by early 2004, the overall licensing rate (including domestically sold and exported DVD player) was further reduced to $13.80. Ibid.

43 According to Greg Linden, the Chinese government helped local firms secure leverage by improving, in game theoretic terms, their 'threat point' through the EVD standard available at less expensive prices (i.e. about 30% of the licensing fees for the DVD). Thus, while the EVD seemed to amount to 'nothing more than a small footnote' to the global DVD market, it nevertheless 'played a role in the DVD royalty negotiations between China and the global electronics giants by improving the fallback position of the Chinese who could, in the event of a dispute, have placed restrictions on the sale of non-EVD players in China'. Linden, above n 39, at 16; see also Erik Gruenwedel, 'DVD Group Cuts License Fees', *Home Media Magazine*, 7 March 2005, http://www.homemediamagazine.com/news/dvd-group-cuts-license-fees-7249

3. Why weak? Legal dispute settlement as a second-best solution to resolve the controversy

Unsurprisingly, China's indigenous standards policies were provocative in the eyes of its trading partners, including the EU. Citing the WAPI as an example, the EU in 2005 raised trade concerns over China's standards initiatives before the TBT Committee.[44] The EU challenged, among other things, that China's non-transparent standardization system may exclude European firms from China's standardization work.[45] Moreover, China's use and development of its indigenous standards where there were already international standards also seemed to run counter to Article 2.4 of the TBT Agreement.[46] Other WTO Members, notably the USA and Japan, raised similar concerns on different occasions.[47] Despite the EU's criticisms, however, none of China's ICT standards initiatives-even the most controversial, WAPI-has thus far been attacked through the WTO dispute settlement mechanism. This weak-form response, in our view, is underpinned by several legal, political, and economic considerations, which we address in turn.

a. Legal and political considerations affecting the EU's strategies In some contexts, China may design standards as voluntary in that import, sales, distribution, or use of a given ICT device is not up to foreign firms to determine the format of their optical storage products. Viewed in this light, the EVD is a voluntary document, or legally speaking, a 'standard' in the Agreement on Technical Barriers to Trade (TBT) and, thus, subject to a less stringent set of the TBT disciplines.[48]

Even in cases involving mandatory documents—otherwise referred to as 'technical regulations' under the TBT Agreement—it seems problematic for other WTO

(visited 30 June 2016) (reporting that the EVD initiative '[i]n the short term, it is already a win for China, because Japan lowered its rates').

44 See Committee on Technical Barriers to Trade, *Fourth Annual Transitional Review Mandated in Paragraph 18 of the Protocol of Accession of the People's Republic of China*, G/TBT/17 (9 November 2005) [hereinafter *Fourth Annual Transitional Review*]. See also Committee on Technical Barriers to Trade, *Communication from the European Communities, China's Transitional Review Mechanism*, G/TBT/W/300 (5 November 2008) (the EU 'strongly urged' China to, notwithstanding the stated objective of national security, 'refrain from adopting any technical regulation mandating testing and certification for information security purposes for products intended for commercial or consumer use'); Committee on Technical Barriers to Trade, *Communication from the European Communities, China's Transitional Review Mechanism*, G/TBT/W/326 (29 October 2009) (the EU criticized China's Multi-Layer Protection Scheme, while again, expressing its concerns about negative implications from these indigenous standards under the TBT Agreement).

45 *Fourth Annual Transitional Review*, ibid, para 5.

46 Ibid.

47 See e.g. 'Letter from Bush Administration Officials to Beijing Protesting Wi-Fi Encryption Standards', *Businessweek Online*, 15 March 2004, http://www.bloomberg.com/bw/stories/2004-03-14/online-extra-letter-from-bush-administration-officials-to-beijing-protesting-wi-fi-encryption-standards (visited 28 January 2016).

48 Agreement on Technical Barrier to Trade, Annex I, 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S 120, Annex I [hereinafter 'TBT Agreement']. This does not suggest, however, that such standards initiatives are not without problems under the WTO framework at all. Although the EVD per se may not constitute technical barriers, the way in which China provided financial aid in the development of this home-grown standard may still raise concerns under the Agreement on Subsidies and Countervailing Measures.

Members to attack such measures. There are at least two legal problems. First, while TBT Article 2.4 requires WTO Member to use 'international standard' as a basis for their technical regulations, the concept of 'international standard' is far from clear. The TBT falls short of providing a definition of the term 'international standard', and it does not offer a list of qualified institutions that can issue international standard for the purpose of the TBT Agreement.[49] As hundreds of industry consortia create ICT standards in one area or another, it was argued, it seems problematic for a WTO Member to ascertain an appropriate benchmark in this context.[50] Worse still, as the ICT standards paradigm has been transformed over the past three decades, there are criticisms about the decision-making process of both industry consortia and traditional standard-setting bodies, such as the International Telecommunication (ITU), International Organization for Standardization (ISO), as well as International Electrotechnical Committee (IEC).[51] As an illustration, while the USA condemned China in that it should have used the Wi-Fi as a basis for its WAPI standard, the way in which the IEEE—the founding father of the Wi-Fi—managed the standard-essential patents (SEPs) and the holdup problems in the standard-setting process, may undermine the legitimacy of use of the Wi-Fi as an international standard under the TBT Agreement.[52]

Second, it is common for the Chinese government to justify its intervention in the name of national security (or more broadly, cybersecurity) in the ICT standards initiatives, a ground explicitly recognized by TBT Article 2.2 as a legitimate policy objective.[53] An eminent example is, again, the WAPI saga. It is the WTO adjudicators' duty to determine, on a case-by-case basis, whether and the extent to which such defense is a valid claim or a pretext for trade protectionism. Amid recent

49 On this score, see generally Humberto Zúñiga Schroder, *Harmonization, Equivalence and Mutual Recognition of Standards in WTO Law* (The Hague: Kluwer International, 2011).

50 See generally Han-Wei Liu, 'International Standards in Flux: A Balkanized ICT Standard-Setting Paradigm and Its Implications for the WTO', 17(3) Journal of International Economic Law 551 (2014), at 556–574.

51 Ibid, at 587–588 (noting that ICT firms may seek to capture the consortia and turn certain industry standards into an 'international standard' certified by traditional standard-setting organizations like the ISO/IEC).

52 In contrast with other industries, a high-tech product in the ICT sector typically combines a number of components, and thus, various patents. In practice, it is common that firms seek to maximize their profits by including their patented technologies into standards and then demand higher licensing fees when standards have been set—an opportunistic practice called patent holdup. While the IEEE, like many standard-setting organizations, does maintain the IPR policies (i.e. disclosure rule and licensing rule based on 'reasonable and non-discriminatory' (RAND) principle) to address such concerns, it has been dragged into a number of SEPs-related lawsuits for years. The level of the licensing fees may raise concerns about 'openness' and in the case where the licensees are firms from emerging economies, 'development dimension' as laid down in the six principles of the 2000 TBT Committee Decision. For an overview of the patent holdup problem in the standardization process, see e.g. Mark Lemley, 'Ten Things to Do About Patent Holdup of Standards (and One Not To)', 48 Boston College Law Review (2007), at 149–168. For the implications of patent holdup for the concept of 'international standard' under the TBT Agreement, see Liu, above n 51, at 591–597.

53 TBT Agreement, above n 49, Article 2.2 ('[T]echnical regulations shall not be more trade-restrictive than necessary to fulfill a legitimate objective . . . . Such legitimate objectives are, *inter alia:* national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment.').

cyber-espionage controversy, however, it seems rather sensitive, politically and legally, for China's trading partners to bring these measures through legal proceedings.[54]

Recall again the WAPI dispute. Although China's measures seemed to, as the USA criticized, violate the TBT Agreement on several accounts (e.g. non-transparent, unnecessary, and deviation from relevant international standard) and the interest of major US ICT giants such as Intel and Broadcom were at stake, this dispute was nevertheless resolved through political channels.[55] In our view, this indicates that these major trading powers weighed in both on legal and political stakes and preferred to keep control of such controversies. For them, delegating the power to the WTO adjudicators in this context may not be the best available solution to handle trade issues.

b. The EU's non-legal considerations That said, the WTO legal proceedings are not necessarily the best option for the EU to manage China's standards initiatives. The following question is then, what are possible alternatives for the EU to address relevant ramifications. In our view, two non-legal mechanisms may play a role when the EU contemplated its strategies.

First, market forces may in some ways place a constraint on China's aggressive standards policies. The ICT industry is, by and large, a typical market exhibited by network externalities. Such a unique feature would tend to produce a 'winners-take-all' paradigm by driving networks with smaller installed base out of business.[56] Thus, as long as European (or in other contexts, American) technologies remain superior to, and more popular than their Chinese counterparts in the global ICT market, it is likely that China's indigenous standards could lead to nowhere. For instance, the fact that the short-lived EVD failed to attract a large installed base was due in large part to its lagged technologies and lack of industry support, as well as market acceptance from abroad. Given the time and costs associated with the WTO legal proceedings and the relatively short life cycle of ICT products, adopting a 'wait-and-see' approach seems more cost-effective to handle China's standards initiatives.

In addition to the passive strategy noted above, as a tactic to compete with its primary rival—the USA—in the ICT industry, taking China's standards matters before the WTO adjudicators may have broader economic and political implications. For one thing, as one of the present authors has argued elsewhere, the new ICT standards universe is, more or less, an American affair because some 70% of these transnational

54 See e.g. Shin-Yi Peng, 'Cybersecurity Threats and the WTO National Security Exceptions', 18 Journal of International Economic Law 449 (2015); Roger P. Alford, 'The Self-Judging WTO Security Exception', 2011 Utah Law Review 607 (2011).

55 The outcry from the US ICT industry led to Sino–US trade talks. In March 2004, in a letter cosigned by three high-level officials—Robert Zoellick, the US Trade Representative, Donald I. Evans, Secretary of Commerce, and Colin L. Powell, American policymakers urged China to drop its WAPI plan. One month later, after a meeting of the US–China Joint Commission on Commerce and Trade, China agreed to suspend 'indefinitely' this mandatory standard. See Gibson, above n 31, at 1405, 1422–1434.

56 On network effects, see e.g. Paul Krugman and Robin Wells, *Economics* (London: Worth Publishers, 2006) 527–533; Michael L. Katz and Carl Shapiro, 'Systems Competition and Network Effects', 8(2) The Journal of Economic Perspectives 93 (1994).

standard-setting networks emerge out of are based in the USA.[57] Judicializing China's standards initiatives would, presumably, turn on the sensitive issue-whether and the extent to which the ISO, IEC, and the ITU still matter in issuing international standards for the purpose of the TBT Agreement.[58] Applying the recent case laws to this context reveals that the EU's claim that development of standards should be determined by only a handful of traditional standard setters may not be warranted.[59]

While the lack of systematic studies bars us from concluding that America's overwhelming dominance played a role in shaping the EU's approaches to China's standards policies, one thing is for sure—European countries have long history of adopting a relatively friendly position in engaging China on standardization matters.[60] China's modern standards system, for instance, was built in 1979 with the assistance of Germany's national standardization bodies, Deutsches Institut für Normung (DIN).[61] For European policymakers, therefore, shaping a Chinese standardization system that is more akin to its European counterparts may create a better setting for the EU–Sino cooperation on standards initiatives. A tangible output of this kind is the 'Seconded European Standardization Expert for China' (SESEC) project launched by the European Commission in 2006, which is meant to 'enhance visibility of European standardization and contribute to the integration of China into the WTO trade system'.[62] Other standards initiatives like the 'Europe-China Standardization Information Platform' (CESIP), also illustrate how the EU policymakers addressed negative ramifications arising from China's *beggar-thy-neighbor* policies through indigenous standards in a less strong legalized manner.[63]

B. The EU's weak-form responses to China's subsidies to certain ICT firms

1. EU launches investigations into the Chinese subsidy to Huawei and ZTE

That said, China's 'indigenous innovation' policy is shaped to favor domestic firms through an array of instruments such as tax incentives, public procurement,

57 Liu, above n 51, at 577–579 (noting that 'Even if one counts European nations as a whole, North America (with 157 in the USA and two in Canada) still has a significant lead, with 68% when compared to Europe's 20% in the ICT consortia universe').

58 The USA and the EU have a long history of debating whether certain international standard-setting organizations should be accredited as an 'international standard' under the TBT Agreement. The shifts in the ICT standards universe fueled the debates. The USA proposed a functional or 'decentralized' approach without *a priori* excluding any institutions from being considered as an international standard-setter. The EU, in contrast, prefers the centralized approach by delegating the authority to certain traditional institutions, including the ISO, IEC, and the ITU. See ibid, at 577–578.

59 Liu, above n 51, at 581–586 (arguing that certain ICT consortia, such as the IEEE, IETF, and W3C may be qualified as 'international standardizing body' under Article 2.4 of the TBT Agreement).

60 Kai Jakobs, 'The (Future) Role of China in ICT Standardization-A European Perspective', 38 Telecommunication Policy 863 (2014), at 874.

61 Ibid.

62 Ibid.

63 CESIP is a website where Chinese and European industry stakeholders can gain more easily access to standards and technical regulations—available both in Chinese and English languages—with a view to facilitating mutual trade and investment flows between these two partners. For more details of the CESIP, see Europe–China Standardization Information Platform, http://www.eu-china-standards.cn/zobzen/# (visited 29 June 2016). Observing the EU's overall standards strategies vis-à-vis China for the decades, Kai Jakobs, an leading expert in this field, concluded that 'the European view of the Chinese standardisation system is rather more geared towards cooperation'. Jakobs, above n 61, at 874.

standards, subsidies, IPRs, and competition regulation.[64] Like indigenous standards, China's paradigmatic approach to subsidize its ICT firms has also prompted enormous outcry in Europe.[65] Imports of Chinese telecommunications equipment—mostly from two local powerhouses, Huawei and ZTE—into the EU were worth over $1.3 billion a year[66] and led to a constant decline in market shares of Ericsson, Alcatel-Lucent, and Nokia–Siemens Networks.[67] For instance, Huawei, an upstart founded in 1987 initially to resell telephone switches in rural China, has dramatically expanded its share in the global telecommunications equipment market in the past few years.[68] To this date, Huawei has joined European ICT giants like Ericsson as one of the leaders in the global mobile infrastructure market.[69] Such a changing paradigm is a wake-up call for certain European ICT firms who attributed the rise of Huawei to the substantial financial aid from the state-owned banks as a consequence of China's broader innovation scheme to promote strategic industries at home and abroad.[70]

Amid these outcries, on 15 May 2013, the EU announced the launch of anti-dumping and anti-subsidy investigations into telecommunications equipment imported from China[71] The products at dispute included mobile telecommunications networks and certain essential elements for the fulfillment of the requirements of the EU telecommunications service providers, regardless of technology (i.e. 2G, 3G, or 4G) and whether they were wholly or partly assembled or unassembled at the time of shipment.[72] The EU Trade Commissioner, Karel De Gucht, publicly stated that the EU believes that Huawei and ZTE may possibly be receiving unfair subsidies to lower their prices and increase their market share in the region.[73]

As for the trade remedy investigations, two points are particularly relevant to our analysis below. First, the Commission made it crystal clear that this decision 'will not be activated for the time being to allow for negotiations towards an amicable solution

64 McGregor, above n 28, at 4.

65 Heavier Competition from the Chinese Firms, http://qz.com/133492/unless-your-companyis-chinese-its-a-tough-time-to-be-a-telecoms-engineer/ (visited 22 January 2016).

66 Ibid.

67 The company's mobile infrastructure equipment revenues have been down 6% since 2011. See ibid.

68 In 2012, Huawei's market shares in the global telecommunication equipment industry increased from 56% to 64%. See Huawei Investment & Holding Co, Ltd, *2013 Annual Report*, http://www.huawei.com/en/about-huawei/corporate-info/annual-report/2013/index.htm (visited 24 January 2016).

69 Kevin J. O'Brien, 'Ericsson Finds a Chinese Rival Hot on Its Heels', *The New York Times*, 24 February 2013, http://nyti.ms/YvqJQC (visited 24 November 2015); 'Ericsson Can Overcome Challenges in the Mobile Infrastructure Business', *Forbes,* 19 August 2015, http://www.forbes.com/sites/greatspeculations/2015/08/19/ericsson-can-overcome-challenges-in-the-mobile-infrastructure-business/ (visited 24 January 2016).

70 O'Brien, ibid.

71 The EU claimed that the Chinese government's subsidies allowed Huawei to undercut other equipment suppliers like Ericsson to build its market share. European Commission, *Statement by EU Trade Commissioner Karel De Gucht on Mobile Telecommunications Networks from China* (15 May 2013), http://europa.eu/rapid/press-release_MEMO-13-439_en.htm (visited 11 January 2016).

72 Ibid.

73 Brien Sin, 'EU Intends to Launch an Investigation against Huawei and ZTE', http://www.slashgear.com/eu-intends-to-launch-an-investigation-against-huawei-and-zte-17278186/ (visited 24 November 2015). See also European Union, 'Trade Defense Database', http://trade.ec.europa.eu/tdi/ (visited 11 January 2016).

with the Chinese authorities',[74] and that the Commission 'will revert in due course'.[75] Second, the industry did not trigger the investigations; rather, they were a trade defense case launched *ex officio* by the European Commission.

2. Major factors affecting the EU's strategies: a beautiful fake-out?

In October 2014, the Commission decided it was no longer necessary to its investigation.[76] The Commission announce that the concerns that led the EU to launch the case 'will be addressed in a systematic and regular dialogue' in the EU–China Joint Committee.[77] In our view, the fact that EU dropped its threat to impose punitive tariffs on China's telecommunications exports was driven by both legal and non-legal considerations, as discussed below.

a. Legal considerations Roughly, a self-initiated case has to meet the same requirements as a case based on a petition by European firms. The only difference is that such a self-initiated case does not have to be supported by 25% of the affected industry.[78] For the EU trade policymakers, therefore, launching this sort of investigation without an official petition from the industry can offer a 'shield' when there is a high risk of retaliation against those European companies asking for trade remedy.[79] Nevertheless, even in such *ex officio* cases, the Commission still needs evidence to determine the existence of dumping and subsidies, as well as the extent to which the EU's ICT industry was injured. Put differently, the European Commission must obtain relevant information on market share, industry production, and capacity utilization of the EU firms. From a legal perspective, the lack of detailed and accurate information from the industry stakeholders can, therefore, undermine the EU's capacity to impose antidumping and countervailing duties.[80]

The absence of private sectors was, in our view, a determining legal factor that led the European Commission not to complete the investigations.[81] The leading ICT powerhouses in the region, including, Ericsson, Nokia–Siemens Networks, and Alcatel-Lucent refused—at least, officially—to participate in the investigation as interested parties.[82] Nor did these firms publicly advocate for such trade remedies against their Chinese competitors. A Siemens–Nokia Networks' spokesperson, for instance, remarked that she 'knew nothing of such a case and therefore could not offer

74 Ibid.

75 Ibid. See also 'Facts and Figures on the European Union's Trade Defense Actions', *World Trade Online*, 15 May 2013, http://insidetrade.com/ (visited 11 January 2016).

76 Ibid.

77 Ibid.

78 Ibid.

79 European Commission Directorate-General for Trade, 'EU and China Settle the Telecoms Case at the Joint Committee', *News Archive-Trade Defense*, 20 October 2014, http://trade.ec.europa.eu (visited 11 January 2015).

80 Sin, above n 74.

81 However, the fact that the European firms refused to cooperate with the Commission was more or less intertwined with non-legal considerations (e.g. their businesses in the Chinese market).

82 Sin, above n 74.

a comment'.[83] Ericsson added that the company 'is a strong supporter of free trade and does not believe in this type of unilateral measure'.[84]

The absence of domestic support from the EU's ICT sector as a consequence of retreating from China's potential retaliation led the Commission to back down from pursuing trade remedies. European firms seemed to be more export-oriented by focusing their concerns on the exportation of telecommunications equipment to China rather than domestic sales. This may be a rational choice for these European firms as the empirical data shows that Huawei and ZTE' share of the EU's wireless equipment market is still below 30%, while the combination of market shares of Ericsson, Nokia–Siemens Networks, and Alcatel-Lucent in China's wireless equipment market is more than 45%.[85] Apparently, European firms, and thus, the EU, would have much to lose in such a tit-for-tat relationship.

b. Non-legal considerations For EU trade policymakers, droping the threat to impose punitive tariffs on China's telecoms giants is not only subject to the evaluation of the legal merits in each case, but is closely intertwined with certain non-legal considerations.[86] That said, the Commission's termination of trade remedy investigations was due in part to the lack of support from the private sector, which reflects the EU's fears regarding its commercial interests in China if the EU–Sino trade war ever occurs. Second, the Commission's decision may, it is contended, go beyond the concerns over each of these individual ICT companies by touching upon the EU's overall economic relationship with China. In a way, the trade remedy investigations would seem to serve as nothing more than a negotiation tactic for the EU policymakers to urge their Chinese counterparts to reach amicable solutions for trade conflicts.[87]

Resolving the long–running ICT trade controversies in a relatively more amicable fashion marked a significant step toward better EU–Sino relations,[88] thus paving the way for the bilateral talks about trade and investment arrangements.[89] EU–China trade and investments have increased consistently over the past few years. To date, the EU is China's biggest trading partner, while China is the EU's second largest trading partner behind the US.[90] At the 16th EU–China Summit held on 21 November 2013, the EU and China announced the launch of negotiations of a comprehensive EU–China Investment Agreement.[91] Since then, there has been seven

83 Paul Rasmussen, 'Sweden Fears Trade War if EU Probes Huawei, ZTE over Subsidies', 30 May 2012, http://www.fiercewireless.com/europe/story (visited 11 January 2016).

84 'EU, China Agree to End Dispute over Chinese Telecommunications Subsidies', *International Business Times*, 20 October 2014, www.ibtimes.com/economy (visited 11 January 2016).

85 Ibid.

86 Laurence Boisson et al., *Diplomatic and Judicial Means of Dispute Settlement,* 1st ed. (Boston: Martinus Nijhoff, 2013), at 14.

87 See Shaffer, 'What's New in EU Trade Dispute Settlement?', above n 3.

88 Robin Emmott, 'EU and China End Telecoms Row as EU Drops Threats against Huawei', Reuters, 20 October 2014, http://www.reuters.com/article/2014/10/20 (visited 24 November 2015).

89 European Commission Directorate-General for Trade, Brussels, 27 February 2012, http://trade.ec.europa.eu (visited 12 December 18 2015).

90 European Commission, 'EU-China Trade', http://ec.europa.eu/trade/ (visited 24 November 2015).

91 Ibid.

rounds of bilateral talks. Concluding such an investment agreement is no doubt a stepping stone for both sides to develop a deeper and more comprehensive economic partnership.[92] As for the ICT manufacturing sector, the EU and China signed an agreement in early 2015 committing themselves to exploring possibilities in implementing joint research actions in the area of 5G technology. Huawei and Ericsson will jointly promote international standardization for the 5G, as well as cooperate on the applications for the 5G, including the Internet of Things (IoT).[93] Despite that Huawei's competition remains a threat, it is apparent that Ericson is better off than it was before the EU legal proceedings against its business rivals.

It follows from the above discussion that diplomatic avenues of resolving trade conflicts can take place simultaneously. In this case, diplomatic and legal approaches went hand in hand in a way that they served each other reciprocally.[94] The legal approaches contributed to more-constructive EU–Sino diplomatic talks, which, in turn, made the legal disputes moot. Here, the legal approach was not a last resort, but rather served as a catalyst to drive the momentum of trade negotiations. Meanwhile, this may also demystify, as argued above, why the EU prefers a weak-form response in addressing China's aggressive standards policies.

II. EU–TAIWAN TRADE CONFLICTS ON ICT INNOVATION POLICIES

A. The EU's semi-strong form responses to Taiwan's compulsory licenses

1. Orange Book standards and compulsory licenses

For years, Taiwan's ICT industry has been operating in a similar fashion as its Chinese counterpart in the sense that Taiwanese manufacturers have been trapped by heavy burdens of royalty. Unlike China, however, Taiwan's ruling elites seem to have little room to leverage standards policies to help the country's domestic industry. In the area of optical storage, for instance, while the Chinese government has in some ways assisted its downstream firms to renegotiate better licensing terms through voluntary EVD standard, Taiwan seemed to rely on, perhaps controversially, compulsory licenses. The case of CD-R and rewritable compact disks (CD-RW) offers vivid illustrations on this score.

Beginning in the late 1980s, Philips Electronics and two Japanese firms, Sony and Taiyo-Yuden, jointly set up the CD-R/CD-RW standard—also known as 'Orange Book'—by pooling together numerous patents relating to CD-R/CD-RW products.[95] Acting as an exclusive licensor via this patent pool, Philips has licensed a

92 European Commission Directorate-General for Trade, 'Fourth Meeting of the EU-China High Level Economic and Trade Dialogue (HED) in Brussels', *News Archive*, 25 October 2013 (visited 22 January 2016).

93 European Commission, 'The EU and China Signed a Key Partnership on 5G, Our Tomorrow's Communication Networks', 28 September 2015, http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153843.PDF (visited 13 January 2016).

94 Boisson, above n 87, at 23, 71.

95 For a background, see e.g. Tu Thanh Nguyen, *Competition Law, Technology Transfer and the TRIPs Agreement: Implications for Developing Countries* (Cheltenham: Edward Elgar, 2010), at 204–212; Li-Dar Wang, 'Deviated Unsound and Self-Retreating: A Critical Assessment of the Princo v. ITC En Banc Decision', 16 Marquette Intellectual Property Law Review 51, 56–57 (2012).

bundle of patents to CD-R/RW manufacturers, primarily from Asia, since the 1990s.[96] In 1999, Philips concluded package licensing agreements with three Taiwanese firms, Gigastorage, Princo, and Linberg. The royalty under these agreements was fixed at 3% of the net selling price with a minimum of 10 Japanese yen per disk.[97] Yet, the emergence of a number of new market entrants after the conclusion of these licensing agreements led to dramatic slash in prices for CD-R/RW products. The wholesale price dropped from $7 per disk in 1996 to $0.50 per disk in 2000.[98] The 10 Japanese yen per disk licensing fees thus accounted for some 20–30% of the retail price.[99] Despite dramatic changes in market conditions, Philips refused to adjust the royalty as originally agreed.[100] These Taiwanese enterprises responded by stopping royalty payment, which led Philips' to terminate the licensing agreements in 2001. Despite the termination, Gigastorage continued its production of CD-R/RW products and thus, legal proceedings arose.[101]

Taiwan's CD-R/RW manufacturers adopted a 'dual-track' approach to handle this matter. These producers lodged a complaint with Taiwan's antitrust agency, Taiwan Fair Trade Commission (TFTC), but then applied to the Taiwan Intellectual Property Office (TIPO) for compulsory licenses to use Philips' five patents registered in Taiwan. For the former, the TFTC concluded that Philips, Sony, Taiyo-Yuden, and others, acquired monopolistic power in the relevant CD-R/CD-RW market through the patent pool, and that the refusal to adjust the royalties irrespective of substantial market changes constituted an anti-competitive conduct that violated Article 10(2) under Taiwan's Fair Trade Act.[102] On appeal, Taiwan's Supreme Administrative Court upheld this decision.[103]

On the latter, the TIPO in July 2004 granted compulsory licenses to Gigastorage as Philips failed to offer voluntary licenses on 'reasonable commercial terms and conditions', a valid ground under Article 76(1) of Taiwan's Patent Act.[104] On appeal,

96 Ching-Fu Lin, 'Filling the Gaps of the TRIPs Agreement: Reflections on the Taiwan-Philips CD-R Compulsory License Case', 3 Asian Journal of WTO & International Law & Policy 556 (2008), at 560.

97 Ibid.

98 Ibid.

99 Ibid. Nguyen, above n 96, at 205; Wang, above n 96, at 52 (noting that Philips' maintenance of the licensing scheme would 'generate royalties twenty to sixty times more in 2000 than the amount originally expected by both sides of the parties').

100 It is reported that Gigastorage tried to renegotiate the terms by reducing the royalty rate to 2–5% of the selling price of each unit, while Philips insisted on a $0.045 per unit. Mei-Hsin Wang, 'Compulsory Licensing under Patents in Taiwan', 47 Les Nouvelles 94 (2012).

101 Trade Barriers Regulation Committee, *Examination Procedure Concerning an Obstacle to Trade, within the Meaning of Council Regulation (EC) No. 3286/94, Consisting of Measures Adopted by the Separate Customs Territorial of Taiwan, Penghu, Kinmen and Matsu Affecting Patent Protection in Respect of Recordable Compact Disc* (30 January 2008), http://trade.ec.europa.eu/doclib/docs/2008/january/tradoc_137633.pdf (visited 12 January 2016) [hereinafter 'TBR Investigation Report'].

102 Under Article 10(2) (now Article 9) of Taiwan's Fair Trade Act, monopolistic enterprises shall not 'improperly set, maintain or change the price for goods or the remuneration for services'.

103 See Judgment of Taiwan Supreme Administrative Court (96-Pan-Zhi-No. 533) (4 April 2007).

104 At the time, Article 76(1) of Taiwan's Patent Act read: 'To address the national emergencies, or to make non-profit-seeking use of a patent for enhancement of public welfare, or in cases where an applicant fail to reach a licensing agreement with the patentee concerned under reasonable commercial terms and conditions within a considerable period of time, the Patent Authority may, upon an application, grant a right of compulsory licensing to the applicant to put the patented invention into practice; provided that such practicing shall be restricted to domestic market.'

the Appeal Board of the Ministry of Economic Affairs affirmed the TIPO's decision, which in 2008 the Taipei High Administrative Court revoked.[105]

2. Major factors affecting war and truce

The TIPO's compulsory license order was provocative; as further explained below the EU considered taking Taiwan and the dispute to the WTO tribunals. Nevertheless, both parties settled the claim amicably, which reflected certain interesting factors underlying the decision-making process for the EU and Taiwan.

a. The role of the WTO legal proceedings in resolving the compulsory licenses dispute In January 2007, while Philips' appeal against the TIPO's order was pending in the Taipei High Administrative Court, Philips lodged a complaint with the European Commission alleging that the Taiwan government's intervention violated Article 31(b) of the TRIPs Agreement.[106] Later in January 2008, the European Commission circulated its report concluding that Article 76 of Taiwan Patent Act was inconsistent with the TRIPs.[107] According to the EU, The TIPO twisted the interpretation of the term 'reasonable commercial terms and conditions' under both TRIPs Agreement and Taiwan Patent Act.[108] In the EU's view, Taiwan could not justify its intervention under TRIPs Article 31 when there had been no more than a mere failure to agree terms and conditions in a reasonable amount of time.[109]

To the EU, the Taiwan government effectively leveraged compulsory licenses as some sort of 'industrial policy instrument' to force Philips to lower the licensing fees in favor of Taiwanese CD-R/RW manufacturers.[110] The Commission, therefore, urged Taiwan to eliminate possible precedential effects of the compulsory license order by amending the Patent Law within two months following the TBR report. Failure to do so would result in legal proceeding before the WTO adjudicators.[111]

EU's ultimatum—together with other factors noted below—effectively resolved this controversy. In early March 2008, shortly after the TBR Report being released, the TIPO made its first round of contacts with the Commission. In the second round of negotiations, the TIPO further assured that it would not appeal the Taipei High Administrative Court's ruling and would propose an amendment to compulsory license clauses under the Taiwan Patent Act.[112] Given the removal of commercial

105 See Judgment of Taipei High Administrative Court (95-Shu-Tzu-No. 2783) (13 March 2008).

106 Philips lodged the claim under Article 4 of the TBR, alleging that Taiwan's measures inconsistent with Articles 28, 31(b), (c), and 31(h) of the TRIPs Agreement, thereby constituting trade barriers under Article 2 of the TBR.

107 For the EU's arguments, see TBR Investigation Report, above n 102, at ii.

108 Ibid, at iii.

109 Ibid, at 28–29. For the EU, the requirement that a proposed user of a patent seek authorization 'on reasonable commercial terms and conditions' is not a substantive ground, but a procedural requirement for granting compulsory licenses. The EU argued that the patent owners have the right to refuse to deal, which may be part of its commercial strategies to maximize its profits, and thus, 'it is clear that a refusal to deal cannot, in the absence of related competition law violations, suffice as a substantive basis for the grant of a compulsory licenses'. Ibid, at 30.

110 Ibid, at iii–iv.

111 Ibid, at iv.

112 European Commission, *General Overview of Active WTO Dispute Settlement Cases Involving the EC as Complainant or Defendant and of Active Cases under the Trade Barriers Regulation* (08 May 2009), http://

disadvantages for European firms, this case was thus settled amicably out of the WTO adjudicating body.

b. Non-legal concerns: why did Taiwan back down from compulsory licenses? Clearly, WTO legal proceedings pose a credible threat that plays a crucial role here. It is less clear, however, why Taiwan government retreated from granting compulsory licenses without bothering to defend its measures. While the EU condemned the TIPO's intervention as trade protectionism, there were, in fact, commentators in support of the legality of this decision and its legal basis-Article 76(1) of Patent Law from the perspective of the TRIPs Agreement.[113]

The debate between the EU and certain Taiwan scholars goes as follows. First, Article 31(b) of the TRIPs Agreement recognized the failure of prior negotiations as a ground on which the WTO Members could grant compulsory licenses.[114] That said, the EU took a restrictive view by reading this provision as a procedural requirement.[115] In the EU's view, there must be a substantive ground (e.g. national emergency and public non-commercial use) to justify compulsory licenses.[116] A reading to the contrary would 'wholly undermine the disciplines imposed by the TRIPs Article 28'.[117] By contrast, some argued that the TRIPs Article 31(b) offers a non-exhaustive list of grounds where a compulsory license could be permitted.[118] Others echoed this by referring to the Doha Declaration on the TRIPs Agreement and Public Health, which explicitly provides that '[e]ach Member has the right to grant compulsory licenses and the freedom to determine the grounds upon which such licenses are granted.'[119] Still others criticized that the EU disregarded the fact that

trade.ec.europa.eu/doclib/docs/2007/may/tradoc_134652.pdf (visited 12 August 2015) [hereinafter '*General Overview of Active WTO Dispute Settlement Cases Involving the EC*'].

113 See e.g. Lin, above n 97, at 566.

114 TRIPs Agreement, above n 12, Article 31(b) (which permits the use of patents without the holders' authorization by respecting several principles, including (b) such use may only be permitted if, prior to such use, the proposed user has made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period of time').

115 TBR Investigation Report, above n 102, at 29.

116 In its report, the European Commission also referred to Nuno Pires de Carvalho who suggests '[t]he mere fact that the prospective licensee has unsuccessfully attempted to obtain a voluntary license from the patent owner is not a sufficient reason for the grant of a compulsory licenses' and 'even when it is decided that the patent owner has refused to license the patent in spite of having offered reasonable commercial terms, it does not follow that the compulsory license should be automatically granted'. Ibid, at 31. See also Nuno Pires de Carvalho, *The TRIPs Regime of Patent Rights* (Alphen aan den Rijn: Kluwer Law International, 2005), at 320.

117 TBR Investigation Report, above n 102, at 30.

118 See e.g. Carlos M. Correa, *Trade Related Aspects of Intellectual Property Rights: A Commentary on the TRIPs Agreement* (Oxford: Oxford University Press, 2007), at 314, 318 ('Article 31 allows Members to determine the grounds for granting compulsory licensing. Although it refers to some specific grounds (national emergency, anti-competitive practices, public non-commercial use, dependent patents), it does not limit the Members' right to establish such a remedy for different situation.'); UNCTAD-ICTSD, *Resource Book on TRIPs and Development* (Cambridge: Cambridge University Press, 2005), at 468 ('Article 31 does not purport to limit the grounds on which compulsory licenses may be granted.'); Lin, above n 97, at 566.

119 Declaration on the TRIPs Agreement and Public Health (14 November 2001), Doc. WT/MIN(01)/DEC/2, 20 November 2001, para 5(b) [hereinafter 'Doha Declaration'].

Philips charged an excessive royalty rate notwithstanding the changed market condition while reading into the term 'reasonable terms and conditions' under the TRIPs Agreement.[120] Thus, it was argued that the TFTC's finding regarding Philips's anti-competitive conduct may support Taiwan in justifying compulsory licenses under Article 31(b) of the TRIPs Agreement if read in conjunction with Articles 7, 8, 31(k), and 40.[121]

Amid these debates, the Taiwan government nevertheless backed down from intervention. Of particular interests to this article are the considerations behind this retreat. Recall the case of China's ICT standards initiatives illustrated above, the fact that certain concepts under the TBT Agreement (e.g. international standard and national security exceptional clause) are less clear may be a hurdle for a WTO Member to challenge China through dispute settlement proceedings. The same logic does not, however, apply to the CD-R dispute. While there is some room for debate as to the legality of Taiwan's compulsory licenses under the TRIPs Agreement, a matter that has not yet been scrutinized by the WTO adjudicators, Taiwan chose to withdraw the measure and amend the relevant clauses of the Patent Act.[122] An immediate question arises—why did Taiwan do so without a legal battle?

Taiwan's responses (and vice versa, the EU's strategies), in our view, reflect two major non-legal concerns. The first is reputational costs. International relations and international law scholars have long suggested that reputation would help ensure states abide by their commitments.[123] States may, as Robert Axelrod nicely puts it, act in 'the shadow of the future' in that their present actions may shape others' future behavior.[124] A state that repeatedly violates treaties would, according to Alan Sykes and Eric Posner, would experience substantial reputational discounts for its future cooperation with others.[125] Maintaining treaty commitments is thus a way to keep a 'connection to the real world' and prevent 'isolation'.[126]

120 See e.g. Kung-Chung Liu and Wei-Ke Chien, 'Analysis of and Comments on CD-R Related Cases: Focusing on Competition Law and Patent Compulsory Licensing Issues', 17(1) Fair Trade Quarterly 1 (2008), at 26 (in Chinese). Although the European Commission noted the anti-competitive claims involved in this present case, it was of the view that the 'reasonable commercial terms' should be determined by the market in the first place. Also, the Commission argued that Taiwan fell short of taking into account the 15 factors, as opined by Judge Tenney of the US District Court for the South District of New York in *Georgia-Pacific*, a leading US case on patent infringement. TBR Investigation Report, above n 102, at 44–52.

121 See e.g. Kuei-Jung Ni, 'The Competence of a WTO Member in Determining the Grounds for Compulsory Licensing: The Compatibility of the Ground for Triggering Compulsory Licensing on Philips' CD-R Patents with the TRIPs Agreement in Light of the Vienna Convention on the Law of Treaties', 39(3) National Taiwan University Law Journal 369 (2010) (in Chinese), at 410–418, 421–424.

122 To avoid the conflicts from further escalation, the TIPO decided that it would not appeal against the ruling of the Taipei High Administrative Court, and that it would amend the Patent Law, as the EU suggested, to eliminate the possible precedential effects of the compulsory license order.

123 See e.g. Eric A. Posner and Alan Sykes, *Economic Foundations of International Law* (Cambridge, MA: Belknap Press, 2013), at 32–33.

124 See generally Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984).

125 Posner and Sykes, above n 124, at 33.

126 Abram Chayes and Antonia Handler Chayes, *The New Sovereignty: Compliance with International Regulatory Agreements* (Cambridge: Harvard University Press, 1995), at 27.

Such concerns play a crucial role for Taiwan's international relations. Given its status as an 'unrecognized state' or 'entity sui generis',[127] Taiwan's policymakers seemed to weigh in on these factors in managing trade frictions with other WTO Members. Thus far, Taiwan has not been named as a defendant in any WTO dispute settlement proceedings. Such a position can be exhibited in the case of CD-R/RW dispute where the TIPO was concerned about the long-run negative implications for international trade, inward foreign investment, and cross-border technology transfer.[128] Viewed in this light, the EU's threat of bringing the CD-R/RW case before the WTO adjudicators seemed to work perfectly in the shadow of Taiwan's concerns about being isolated from international economic integration.

Beyond reputational costs, private sector firms also played a crucial role in this context. On top of various lawsuits in Taiwan, Philips also filed a complaint with the US International Trade Commission (ITC), alleging that certain Taiwanese enterprises, including Gigastorage, violated Section 337(a)(1)(B) of the Tariff Act of 1930 by importing certain CD-R/RW products into the USA.[129] While the ITC once rejected Philips's claim by finding that the contested package licensing practice constituted patent misuse for tying both essential and non-essential patents to CD-R/RW manufacturing,[130] the US Court of Appeals for the Federal Circuit reverse the decision. The Federal Circuit found no evidence of anti-competitive effects and remanded the case in late 2005,[131] which, in turn, led the ITC to grant a general exclusion order prohibiting the importation of the infringing products in February 2007.[132] Presumably, Philips's victory in the Federal Circuit seemed to implicate the present dispute in two ways. First, the risks of infringing CD-R/RW products being excluded from the US market, alongside litigation costs, have pressed Taiwanese firms to rethink their business strategies.[133] In April 2007, only two months after the ITC order, Gigastorage requested that the TIPO revoke the compulsory licenses as it began to

127 On this score, see e.g. Steve Charnovitz, 'Taiwan's WTO Membership and Its International Implications', 1 Asian Journal of WTO & International Health Law & Policy 401 (2006); Pasha L. Hsieh, 'An Unrecognized State', 28 Michigan Journal of International Law 765 (2008), at 765–814; Han-Wei Liu, 'An Entity Sui Generis in the WTO: Taiwan's WTO Membership and Its Trade Law Regime', 4 Journal of International Commercial Law & Technology 252 (2009).

128 An li zhu ti zhuan li qiang zhi shou quan ou shang kang yi [the Topic of Cases: Compulsory Licenses and Protests from European Firms, Small and Medium Enterprises Administration of MOEA],http://law.moeasmea.gov.tw/modules.php?name=Content&pa=showpage&pid=694 (visited 04 January 2016).

129 *US Philips Corp. v ITC*, 424 F. 3d 1179 (Fed. Cir. 2005).

130 Ibid, at 1183, 1184 (the ITC found that Philips's package licenses 'did not give prospective licenses the option of licensing individual patents (presumably for a lower fee) rather than licensing one or more of the patent packages as a whole').

131 The Federal Circuit was of the view that 'there is no evidence that a portion of the royalty was attributable to the patents that the Commission characterized as non-essential', and therefore, there is no basis to accept Gigastorage's claim that royalties would have been lower if Philips had offered to license the patents on an individual basis or in smaller packages. Ibid, at 1188–1189.

132 *In re* Certain Recordable Compact Disc and Rewritable Compact Disc, USITC Inv. No. 337-TA-474, February 2007.

133 However, Princo, another Taiwanese firm, continued the legal proceedings against Philips in the USA Princo's appeal was eventually rejected by the Federal Circuit. In an *en banc* decision, the Federal Circuit found that Philips's conduct did not constitute a patent misuse. 616 F. 3d 1318 (2010).

move its CD-R/RW manufacturing out of Taiwan.[134] Later, in September 2007, Gigastorage and Philips resolved all claims via a settlement agreement.[135] In the meantime, instead of being dragged into a string of lawsuits in Taiwan and elsewhere, certain Taiwanese CD-R/RW producers elected to join China's standardization efforts by contributing to the creation of the EVD, as noted above.[136]

Second, although the Federal Circuit did not address the excessive royalty rate issues head-on, its finding that the package licensing practices did not constitute patent misuse nevertheless seemed to make the EU policymakers more comfortable by condemning Taiwan's compulsory licenses in the TBR report. Moreover, as Taiwanese enterprises retreated by moving CD-R/RW manufacturing to other countries, it thus became moot for Taiwan government to intervene in a way that involved reputational costs.

B. EU's strong-form responses to Taiwan's ITA claims

1. The WTO dispute settlement case on EU–IT Products

The ITA is a plurilateral agreement concluded among 78 WTO Members with a view to eliminating duties on IT products.[137] The EU is an original participant in the ITA and has incorporated into its Schedule the tariff commitments set out in Attachment A and B of the ITA.[138] Legally, those commitments formed a part of the EU's WTO obligations under the GATT Articles II:1(a)[139] and II:1(b).[140] At the time of its enactment, the ITA covered approximately 10% of global trade.[141] One decade later, world exports of IT products have more than tripled in value.[142] For the same period, imports of IT equipment to the EU rose sharply from 9% to 20%.[143]

The *EC–IT Products* turned on various measures adopted by the EU as it regards the tariff treatment of certain IT products, namely 'flat panel display devices'

134 TBR Investigation Report, above n 102, at 19

135 Ibid, at 4.

136 See Linden, above n 39, at 15 (reporting that there was yet another group of Taiwanese firms struggling with the development of 'FVD' standard, an alternative to the EVD).

137 Ministerial Declaration on Trade in Information Technology Products, WT/MIN(96)/16, 13 December 1996.

138 See generally Shin-yi Peng, 'Taxing Innovation? –The Evolving Coverage of the Information Technology Agreement', 64(1) Tax Lawyer 79 (2010).

139 GATT, Article II(a): Each contracting party shall accord to the commerce of the other contracting parties treatment no less favorable than that provided for in the appropriate Part of the appropriate Schedule annexed to this Agreement.

140 GATT, Article II(b): The products described in Part I of the Schedule relating to any contracting party, which are the products of territories of other contracting parties, shall, on their importation into the territory to which the Schedule relates, and subject to the terms, conditions or qualifications set forth in that Schedule, be exempt from ordinary customs duties in excess of those set forth and provided therein. Such products shall also be exempt from all other duties or charges of any kind imposed on or in connection with the importation in excess of those imposed on the date of this Agreement or those directly and mandatorily required to be imposed thereafter by legislation in force in the importing territory on that date.

141 WTO News, 'Statement by Pascal Lamy', 28 March 2007, http://www.wto.org/english/news_e/sppl_esppl58_e.htm (visited 11 January 2016).

142 *15 Years of the ITA*, above n 7, at 3–4, 8–10; Mavroidis, above n 7, at 158.

143 Ibid.

(FPDs), 'set-top boxes which have a communication function' (STBCs), and 'multi-functional digital machines' (MFMs).[144] Each of these three categories of contested products shared some characteristics with products included by the EU in its scheduled commitments as part of the ITA, but also had certain features that could arguably fall outside the ambit of the ITA.[145] First, the EU has classified flat panel computer monitors with digital video interface (DVI) under tariff codes that are not covered by the ITA, instead subjecting them to a 14% duty. The issue before the Panel was whether the EU was allowed to exclude the FPDs from the scope of the concessions simply because they are capable of receiving and reproducing signals from both automatic data processing machines and other sources.[146] Second, under the EU tariff regime, only a product with a telephony- or cable-based modem qualifies for duty-free treatment—any device that communicated via wireless, the ISDN, or Ethernet modem (e.g. STBCs) was reclassified out of the duty-free tariff line and is subject to a 14% duty.[147] Third, the EU issued a new regulation, classifying the MFMs with the capacities of scanning, laser printing, and laser copying under the HS subheading 9009.12, as photocopying apparatus, carrying a 6% duty.[148]

The key issue for the panel was whether these measures were inconsistent with Articles II:1(a) and (b) of the GATT 1994 because they resulted in less favorable treatment to imports of FPDs, STBCs, and MFMs than those they enjoyed under the EU's WTO Schedule. The Panel examined the meaning of the terms in the EU schedule and ruled that at least some of the FPDs, STBCs, and MFMs could fall within the scope of the duty-free concessions and that the EU measures that required dutiable treatment were therefore inconsistent with Articles II:1(a) and (b) of the GATT.[149]

The *EC–IT Products* was the first trade complaint brought by Taiwan since it joined the WTO in 2002. Its ICT sector's output accounted for 29.58% of the Taiwanese manufacturing sector.[150] More specifically, trade in electronic equipment was $123.2 billion in 2014, accounting for over 39% of Taiwan's total export.[151] So far, telecommunications equipment has been one of the most traded commodities between the EU and Taiwan.[152] Thus, the EU's exclusion of certain high-tech products from the ITA by trying to 'freeze' the commitments at the time when the ITA was originally concluded some 20 years ago would hurt Taiwan's ICT industry. By bringing the litigation in the WTO, the Taiwan government intended to ensure

144 *European Communities and Its Member States – Tariff Treatment of Certain Information Technology Product* [hereinafter Panel Report, '*EC–IT Products*'], WT/DS375, WT/DS376, WT/DS377, adopted 21 September 2010.

145 See e.g. ibid, at para 2.2.

146 Ibid.

147 Ibid.

148 Ibid.

149 Panel Report, *EU–IT Products,* above n 145, at paras 7.321–7.763, 7.832–7.993, 7.1241–7.1540.

150 Ministry of Economic Affairs of Taiwan, '2013 Industrial Development in Taiwan', https://www.moeaidb.gov.tw/ (visited 10 January 2016).

151 World's Top's Exports, 'Taiwan's Top 10 Exports', http://www.worldstopexports.com/taiwans-top-exports (visited 10 January 2016).

152 European Commission, 'Trade-Countries and Regions-Taiwan', http://ec.europa.eu/trade/policy/countries-and-regions/countries/taiwan/ (visited 24 November 2015).

that the EU's commitments to duty-free treatment to these products will be maintained as technologies evolve over time.

2. Zero tariffs on everything?—the EU's strategic defense to tariff classifications

As some argued, if the ITA participants only provided duty-free treatment to the products with technologies that existed at the time the ITA was concluded, very few ITA products would be eligible for such treatment today.[153] On the other hand, if the intent of the ITA was to be much more inclusive and dynamic, eventually almost everything will be covered by the ITA. In this digital age where most products are technologically possible to be connected through the Internet, should the ITA commitments be read as 'zero tariffs on everything'? The EU stressed that the judicial approach may not be the appropriate avenue to clarify the question of whether certain products are covered by the ITA. According to the EU, WTO Members retain the power to revisit the product coverage through negotiations.[154] As argued below, however, the EU took a hardline position in defense of its tariff classifications before the WTO adjudicators. Such a strong-form response is intertwined with complicated legal and non-legal considerations as explained below.

a. Legal considerations Since its inception, digital technology has been creating an ever-increasing potential for new products to fall within the scope of the ITA. The rapid convergence of information technologies and unprecedented market changes have strained the existing legal and regulatory regime of the ICT sector. The questions of whether the ITA commitments are 'open-ended' and, therefore, include any 'new' product created much confusion. As Taiwan argued before the WTO adjudicators,[155] the preamble to the ITA emphasized the key role of trade in ICT devices in the dynamic expansion of word economy. For Taiwan, the notion that technological evolution eviscerates tariff concessions runs counter to paragraph 1 of the ITA, which states that 'each party's trade regime should evolve in a manner that enhances market access opportunities for information technology'.[156] The EU tariff concessions must, in Taiwan's view, cover 'all' devices that fit squarely within its terms regardless of how their functionality may change over time so that an extensive reading of the scope of ITA is necessary to serve the 'object and purpose' of the ITA.[157]

As compared to the EU's patterns of settling other claims vis-à-vis its partners in the Greater China Area, the EU took a tough stance by defending its measures before the WTO adjudicators. In our view, this decision may turn on the evolving nature of the ICT products and *res judicata*. *Res judicata* is, generally, the principle that once a matter has been ruled upon, another court of similar jurisdiction should not rule upon the

153 Ambassador Susan C. Schwab, USTR Remarks on EU, ITA, WTO Case, 22 April 2008, www.ustr.gov (visited 29 January 2016).

154 World Trade Online, 'European Commission to Seek ITA Renegotiation on Four Points', 25 July 2008, http://insidetrade.com/ (visited 29 January 2016).

155 First Written Submission of TPKM, *EC–IT Products*, 5 March 2009, paras 286–287.

156 Ibid, para 286.

157 Ibid, paras 286–287.

same matter.[158] Although the concept of *res judicata* is not explicitly embedded in the world trade regime, the WTO adjudicators seemed to apply this rule in a way that Members are tempted to reopen a case.[159] *Res judicata*, however, only applies if the parties to a dispute are identical and the dispute itself is the same. In other words, *res judicata* in the WTO context would not apply to two different measures even though they have largely identical trade legal issues.[160] Viewed in this light, *res judicata* means that disputes on FPDs, STBCs, and MFMs between Taiwan and EU cannot be relitigated and re-examined. As a corollary, Taiwan faced with similar factual backgrounds—that is, the scope of the tariff concessions under the ITA evolve with technological advances over time—have to litigate time and time again for including new ICT products.

Interestingly though, despite the EU's strong-form response and the fact that it lost the case before the Panel, European policymakers chose not to appeal. Instead, it took immediate actions to bring the contested measures into compliance with the Panel's recommendations.[161] This decision hinges on two factors. First, it relates to the EU Members' division on the ITA issues, as discussed in the subsection that follows below. Second, it turns on the way in which the Panel handled the ITA dispute.

Regarding the former, although the *EC–IT Products* ruling, as Robert Howse and Paola Conconi suggest, helps to achieve the broad objective of the ITA-'maximum freedom of world trade in information technology products' and 'encourage the continued technological development of the information technology industry on a world-wide basis',[162] the Panel failed short of taking a clear stance on how 'technological development' and 'product coverage' should be addressed systematically in the ITA context.[163] Thus, by not appealing the Panel Report, the EU sophisticatedly left some room for subsequent legal debates, thereby paving the way for subsequent negotiations on the ITA expansion.

b. Non-legal considerations In addition to the legal considerations discussed above, EU policymakers also weighed in on several non-legal factors in the present case. First, while the EU is a participant to the ITA, its Member States are spilt on liberalization of ICT products when the ITA was signed.[164] Therefore, a trade-off for the

158 *Black's Law Dictionary*, *Res Judicata*, http://thelawdictionary.org/res-judicata/ (visited 29 January 2016).

159 See Panel Report, *India – Measures Affecting the Automotive Sector*, WT/DS146/R, WT/DS175/R, adopted 5 April 2002, paras 7.42–104. See also Panel Report, *Argentina – Definitive Anti-Dumping Duties on Poultry from Brazil*, WT/DS241/R, adopted 19 May 2003, paras 7.28–7.33.

160 Jeff Waincymer, *WTO Litigation* (London: Cameron May, 2002), at 520–521.

161 John Neuffer, *EU Takes Welcome Action to Implement the ITA*, Information Technology Industry Council, 30 September 2013, https://www.itic.org (visited 29 January 2016).

162 Paola Conconi and Robert Howse, 'Panel Report on EC-IT Products', 11(2) World Trade Review 223 (2012), at 253–254.

163 In *EC–IT Products*, one crucial issue facing the Panel was whether, and if so, how, the state of technology existed at the time of the negotiations relevant to determine the scope of the concessions should be taken into account while reading the EU's commitments. Although the Panel found that 'multi-functionality was not unknown at the time of negotiations', it fell short of giving a definitive answer on this matter. See e.g. Shin-Yi Peng, 'Renegotiate the WTO "Schedules of Commitments"?: Technological Development and Treaty Interpretation', 45 Cornell International Law Journal 403 (2012), at 423–424; see also Conconi and Howse, above n 163, at 254 (noting that the EU still subject some multifunctional devices to import tariffs and certain measures remain ambiguous).

164 Conconi and Howse, above n 163, at 230.

EU to join the ITA was to carve out certain ICT products from this plurilateral agreement.[165] Such protectionist ideology remerged when the European Council adopted the Lisbon Agenda in 2000.[166] By setting up the Lisbon Agenda, European policymakers aimed to make the region 'the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion' by 2010.[167] Yet, the mid-term review in November 2004 showed that the stated goal of the Lisbon Agenda was far from successful.[168] This disappointment, thus, led to the 'i2010' initiative with a view to increasing the EU's investment in research on the ICT industry by 80% no later than 2010.[169] As this strategic industry came under the spotlight, protectionism gained new momentum and spread among EU Members. This may explain, in part, the EU's strong-form response in defense of its ICT-related trade policies before the WTO adjudicators.

Meanwhile, support from private sectors further reinforced the EU's political will on defending the business interests in the region. Evidence indicates that the pressure groups in the region may have lobbied European governments to impose tariffs on certain ICT products to shield themselves from competition.[170]

Indeed, as Conconi and Howse observed, the EU Members' division on the ITA issues has in a way encouraged the EU not to appeal the *EC–IT Products* ruling.[171] Be as it may, it suffices to say that it makes sense for European policymakers to opt for a strong-form response upfront given the pressure to meet the political agenda, support from the industry stakeholders and possible legal ramifications noted above. For the EU, the legal proceedings before the Panel provided some sorts of leverage to negotiate better deals in the ITA II negotiations, to say the least.

III. CONCLUDING REMARKS

While these selected cases are distinguishable on their facts and involve different policy instruments (i.e. standards, subsidies, tariffs, and compulsory license), these seemingly disconnected events can be woven together by our analytical framework. Underlying these trade conflicts is a complex decision-making process that involves dynamic two-way interactions between public–private sectors at multiple levels. Such understanding is crucial for handling trade conflicts in the high-tech

165 Ibid.

166 Otherwise known as 'Lisbon Process' or 'Lisbon Strategy'. 'The Lisbon European Council–An Agenda of Economic and Social Renewal for Europe', DOC/00/7(Brussels, 28 February 2000), http://europa.eu/rapid/press-release_IP-00-191_en.htm (visited 11 January 2016).

167 Ibid.

168 See *Facing the Challenge: The Lisbon Strategy for Growth and Employment*, Report from the High Level Group on the Lisbon Strategy chaired by Wim Kok (November 2004), https://ec.europa.eu/research/evaluations/pdf/archive/fp6-evidence-base/evaluation_studies_and_reports/evaluation_studies_and_reports_2004/the_lisbon_strategy_for_growth_and_employment__report_from_the_high_level_group.pdf (visited 12 January 2016) [hereinafter *Facing the Challenge: The Lisbon Strategy for Growth and Employment*].

169 European Commission, *i2010–A European Information Society for growth and Employment*, COM (05) 229 final (1 June 2005).

170 Ibid.

171 However, the EU Members' division on the ITA issues may, as Howse and Conconi argued, explain why the EU decided not to appeal. Conconi and Howse, above n 163, at 231.

Case	*Variables*				*EU's Response*
	Legal Uncertainty	**Support from Private Sectors in the EU**	**Stronger Political/Economic Leverage over Counterparty**	**Counterparty's Political Will to support the contested measures or pursue trade interests**	
China's ICT Standards (export)	*X*			*X*	***Weak***
China's Subsidies to Local ICT Giants (Import)	*X*			*X*	***Weak***
Taiwan Compulsory License (export)	*X*	*X*	*X*		***Semi-strong***
EC-ITA (import)	*X*	*X*	*X*	*X*	***Strong***

Figure 1. The matrix of variables in shaping the EU's responses.

industry. With the global supply chain becoming fragmented, and given the fast-moving nature of the ICT sector, a legal approach may, but not necessarily, offer the best solution for trade policymakers to settle the claims. The best way to manage this sort of controversies turn on a myriad of key factors, as identified in Figure 1. Overall, the EU seems more moderate in using the WTO legal proceeding when three variables are present: legal uncertainties, *the lack of support* from industry stakeholders, and perhaps most importantly, strong political will of the counterparty to implement the measures, as China's systematic push toward an indigenous innovation system.

In other contexts, however, despite legal uncertainty, where there is a strong endorsement from the private sector and greater economic political leverage over its counterparty, as observed in Taiwan's CD-R/RW compulsory license dispute, the EU would take a relatively harsh approach to holding its trading partner accountable. Finally, the strong-form response is most likely to occur in the presence of all these variables as seen in the ITA dispute. That said, while it may be too early to generalize these variables toward a reliable framework to predict the EU's approach to handling trade disputes elsewhere, our explanations should suffice to shed light on the possible direction in which the stream will flow with respect to legal or diplomatic ways of shaping trade policies.