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China's Pursuit of Industrial Policy Objectives: Does the WTO (Really) Have an Answer?

Kalpana TYAGI*

In the year 2016, according to estimates by the Chinese Bureau of Statistics, joint ventures (JV) with foreign partners contributed over 25% of foreign investment inflows in China. To the extent these JV help emerging economies such as China become more competitive and innovative is a positive consequence that is widely welcomed by the international community. However, the alleged forced technology transfer in these ventures is the Achilles heel that has evoked various retaliatory responses from governments worldwide. The United States recently studied the issue in its section 301 investigation and subsequently implemented various measures, including tariffs worth over USD 250 billion, which led to the onset of the so-called US-China trade war. The European Union (EU), on the other hand, called for the regulation of forced technology transfer and resorted to a more restrained manner by officially filing a complaint before the World Trade Organization (WTO). The EU's complaint confirms the onerous set of conditions – such as forced technology transfer for approval of investments in strategic areas such as electric cars and the biotech sector – that stand in clear contrast to the China's commitments when it first joined the WTO. For the companies, particularly those in the high tech sector, intellectual property is a key source of competitive advantage. Knowingly sharing this source of advantage means that rational firms that seek profit maximization derive some unrivalled gains through these collaborations.

Against this mixed backdrop, using inter-disciplinary insights from law and business strategy, this article, a part of series of articles on the subject, critically assesses the contemporary debate and different approaches to China's practice of 'discriminatory licensing' and 'forced technology transfer'.

Keywords: Technology Transfer, Discriminatory licensing, Joint Ventures, section 301 US Trade Act, European Union, Market Economy Status, State Owned Enterprises, WTO

1 SECTION 1: INTRODUCTION

In the year 2016, according to estimates by the Chinese Bureau of Statistics, joint ventures (JV) with foreign partners contributed over 25% of foreign investment flows. A key challenge associated with these JV is the alleged

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transfer of technology that the Chinese government forces upon its foreign partners. In an econometric study assessing the relationship dynamics in JV between the Chinese and foreign partners, Jiang et al identify that amongst the set of Chinese firms, the larger and the more innovative ones that actively engage in research and development activities (R&Ds) are most likely to be chosen as JV partners.[1] The partnership between the French food and beverage conglomerate Danone and Chinese Wahaha, a leading food and beverage company in China is a notable example of this selection criterion.[2] Due to their organizational and learning abilities, these local partners also tend to benefit most from these partnerships, as technology transfer accelerates the learning curve and makes it easier for them to engage in follow-on innovation.[3] To the extent these JV help emerging economies such as China become more competitive and innovative is a positive upshot of international JV between the foreign and Chinese firms – a constructive development that needs to be welcomed. However, there are also accompanying disconcerting issues such as those dealing with the alleged 'forced technology transfer' and 'restrictive licensing practices' – that have lately been the Achilles heel of the developed world. The United States endeavoured to ascertain this with its section 301 inquiry and subsequently restrain the Chinese practice of forced technology transfer and many other dumping practices through a host of measures, including the imposition of tariffs on goods worth over USD 250 billion, which led to the onset of the recent US-China trade war. The European Union (EU), on the other hand, called for the regulation of forced technology transfer and resorted to a more restrained manner by officially filing a complaint before the World Trade Organization (WTO). The EU's complaint confirms the onerous set of conditions – such as forced technology transfer as a pre-requisite for the

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1 Jiang et al., *International Joint Ventures and Internal v. External Technology Transfer: Evidence from China*, CESifo Working Paper No. 7065 (May 2018), https://www.econstor.eu/bitstream/10419/180327/1/cesifo1_wp7065.pdf (accessed 20 Sept. 2019).

2 For a very interesting account of this partnership, *see* S. Hamilton & A. Z. Jinxuan, *Doing Business with China: Avoiding the Pitfalls* 14–39 (Palgrave Macmillan 2012). For close to a decade, the joint venture enjoyed double digit revenues with China's accounting for Danone's 10% global revenue in 2006. Following a bitter public feud between the two, the joint venture that started on a very promising note, eventually ended by Danone selling its 51% stake to its joint venture partner Wahaha.

3 In the Wahaha/Danone JV for instance, whereas Wahaha significantly invested in kind by sharing its 'prior knowledge, trade secrets' and intellectual property associated with beverage products [that were] designed for the Chinese market, Danone's key contribution was import and installation of international, particularly German manufacturing technology worth RMB 2.5 million (USD 340 million) and the transfer of technical knowledge and expertise by Danone's R&D director who was transferred from the international market to the Chinese market to ensure smooth operations and installation of the new technology. *See* Hamilton & Zhang, *supra* n. 2, at 14–39.

approval of investments in strategic areas such as electric cars and the biotech sector – which stands in clear contrast to China's WTO commitments. During the accession talks, the Chinese dialogue lasted for well over fifteen years and was limited only to commercial terms and conditions, something that was highly unusual, when compared with the accession-related negotiations with other countries.[4] Moreover, unlike the other Brazil, Russia, India, China and South Africa (BRICS)[5] economies, China has right from the outset, pursued a more thoughtful and strategy-led integration at the WTO.[6]

There is also another important dimension to this debate. For the companies, particularly those in the high tech sector, intellectual property is a key source of competitive advantage.[7] Knowingly sharing this source of advantage means that firms – that are rational entities and seek profit maximization – derive some potentially better benefits through this collaboration. The recent US government's ban against the US Information Communication Technology (ICT) companies on sharing technology with Huawei has evoked mixed responses from the industry, as many allege that the challenge was not of security, instead the measure was proposed to resolve the ongoing trade dispute between US and China.[8]

Against this backdrop, using inter-disciplinary insights from law and business strategy, this article critically assesses the current debate about China's 'discriminatory licensing' practices and 'forced technology transfer'. Section two uses insights from the literature on corporate strategy and tries to identify why foreign companies enter into these 'co-opetition' agreements, where they co-operate in order to compete and fight for market shares in the same markets.[9] Using United States Trade Representatives (USTR's) section 301 report as a starting point, section 3.1 tries to map how China has (mis-used) the 'technology transfer' and its domestic laws to the benefit of its local players and the various state owned enterprises (SOEs). It discusses the findings of the

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4 B. Vickers, *The Role of the BRICs in the WTO: System-Supporters or Change Agents in Multilateral Trade,* in *The Oxford Handbook on World Trade Organization* 259 (A. Narlikar, M. Daunton & R. M. Stern eds, Oxford University Press 2012).

5 BRICS refers to the key emerging economies Brazil, Russia, India, China and South Africa. The term 'BRIC' was first used and popularized by Goldman Sachs in its 2007 report. Following the onset of 2008 Financial crisis, the 'S' referring to South Africa and hence, the current acronym BRICS to refer to the bloack of emerging economies.

6 Vickers, *supra* n. 4, at 258–259.

7 M. E. Porter, *The Competitive Advantage of Nations*, Harvard Bus. Rev. (Mar.–Apr. 1990), https://hbr.org/1990/03/the-competitive-advantage-of-nations (accessed 20 Sept. 2019).

8 D. Goldman & C. Duffy, *US Details New Restrictions on Chinese Supercomputer Companies*, CNN Bus. (21 June 2019), https://edition.cnn.com/2019/06/21/tech/china-supercomputers-ban/index.html (accessed 20 Sept. 2019).

9 A. M. Brandenburger & B. J. Nalebluff, *Co-opetition*, 11–15 (Profile Books Ltd, London 2002).

2018 Report on China's compliance with the WTO commitments. Section 3.2 examines the measures taken by the EU, such as its recent complaint to the WTO. Section 3.3 discusses recent developments concerning the granting of the Market Economy Status (MES) to China, following the completion of fifteen years of the latter's accession to the WTO. Section 3.4 refers to empirical studies to evaluate the effectiveness of differing approaches by the EU and the US. Section 4 assesses whether the current WTO framework offers sufficient remedies to address the resulting harm to innovation and distortion of competition at the global level. Finally, as the current system leaves many issues unaddressed, section 4 also recommends a set of measures that may be more effective and peaceful in dealing with this emerging threat to competition and innovation on the global scale.

2 SECTION 2: COOPERATE TO COMPETE: DISINTEGRATING THE VALUE CHAIN

Firms compete in a highly competitive dynamic disciplined by a range of political, economic, social and technological (PEST) factors.[10] This is particularly true in the more international set up where competition is not only value-based (such as in case of high value luxury brands), it is also price-based (such as in case of necessities). Starting 1970s, onset of a host of macro-economic factors such as stagflation in the developed world[11] and rising labour costs on the one hand, and planned obsolescence for high value goods such as consumer electronics and luxuries on the other,[12] meant that for international players to remain competitive, they had to look for more sustainable sources of competitive advantage.[13] This competitive dynamic coupled with an increased

[10] A. Gupta, *Environment & PEST Analysis: An Approach to External Business Environment*, 2(1) Int'l J. Mod. Soc. Sci. 25–26, 28–39 (2013), https://pdfs.semanticscholar.org/d9d2/86c5a903a91d4e5e6cff565f186f91383a02.pdf (accessed 20 Sept. 2019).

[11] Stagflation or secular stagnation refers to a situation of near negligible growth in a market-based economy. This is usually on account of high per capita income and low investments in the key sectors of an economy such as infrastructure and education. *See* The Guardian (2013), *IMF Goes Back to the Future With the Gloomy Talk of Secular Stagnation* (7 Oct. 2014), https://www.theguardian.com/business/2014/oct/07/imf-gloom-global-economy-growth-secular-stagnation (accessed 20 Sept. 2019).

[12] Considering the oligopolistic nature of these markets, planned obsolescence seems to be a highly profitable strategy. *See* B. Orbach, *The Durapolist Puzzle: Monopoly Power in Durable-Goods Market*, 21 (1) Yale J. Regulation (2004), https://pdfs.semanticscholar.org/e575/9854d72125132205f3a43a32b73ea5679dd2.pdf (accessed 20 Sept. 2019). For the proposed French law on planned obsolescence, *see* report by T. Libaert, *Pour une Consummation Durable En Phase Avec Les Enjeux Européens* (Jan. 2019), www.ladocumentationfrancaise.fr (accessed 20 Sept. 2019).

[13] Porter, *supra* n. 7.

demand for rationally priced goods created incentives for firms to streamline their production processes. Streamlining the production process essentially meant disintegrating the value chain and dispersing different steps in the process to locations where it would be most value augmenting – either cost-wise or innovation-wise. This phenomenon may be understood using Coase's 'transaction cost economics'.[14] Considering that the outsourcing of or the divestiture of parts of the value chain offered firms a 'more flexible cost structure' and higher efficiencies, the firms pursued growth through the 'dis-integration of the value chain'.[15]

To appreciate how firms benefit from this flexible, variable cost model, the supply chain/value chain[16] of personal computers (PCs) and tablet PCs such as Apple's is illustrative. Considering the centrality of 'competition in innovation' in the ICT sector, this example also helps put numbers – in terms of gross value added at each step in the value chain, and hence, the debate on the US/China trade deficit – in perspective. A typical tablet or a personal computer (many components between the two devices are similar and inter-changeable) comprises of hundreds and thousands of components (which in turn comprises of thousands of sub-components that require specialized manufacturing). Notable components include lithium battery, Liquid Crystal Display (LCD) panels, Direct Current/Alternating Current (DC/AC) Inverters, battery pack, external CD-ROM etc.[17] As illustrated in figure 1, instead of individually manufacturing each one of these components, a firm may choose to concentrate only on R&D, assembling of the components to make the final product and sales & marketing. In other words, the firm may concentrate on its core competencies and maximize its profits. This explains why companies as innovation-driven as Apple consciously choose to globally outsource a large part of their value chain. Apple *only* designs and sells its products, including the iPhone; it *does not* manufacture them.

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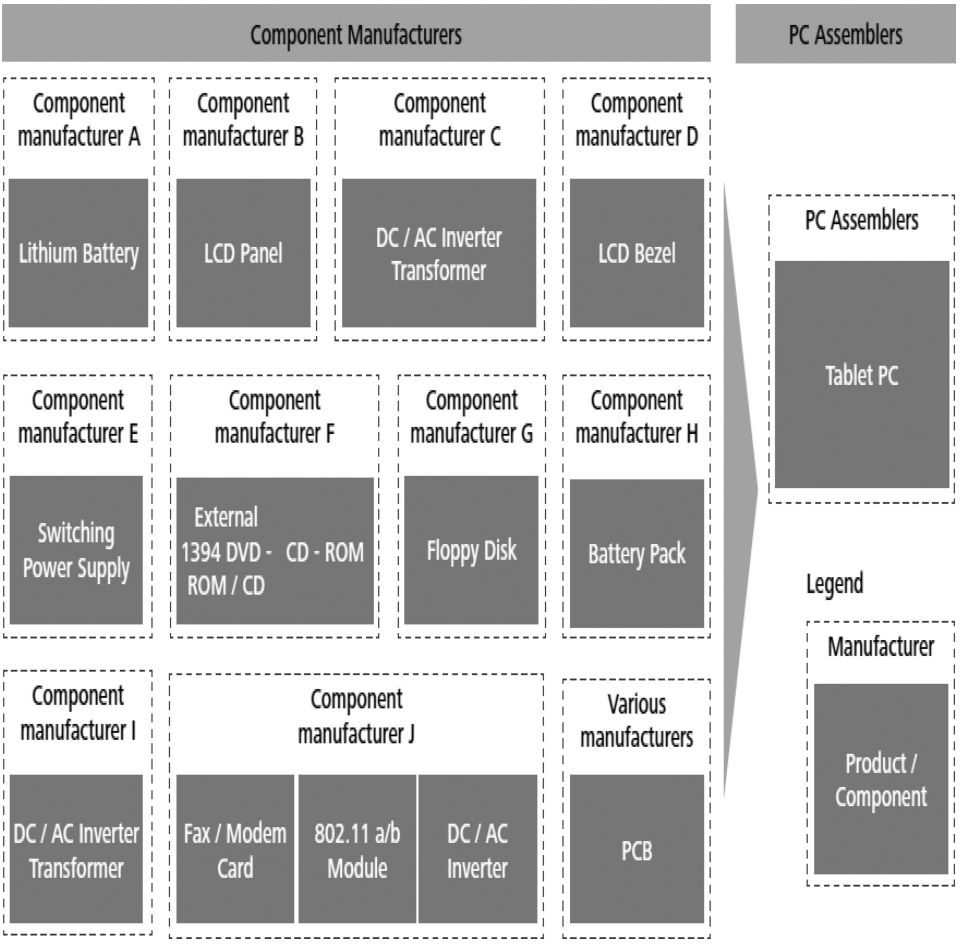
[14] R. H. Coase, *The Nature of the Firm*, 4(16) Economica (Nov. 1937), https://onlinelibrary.wiley.com/doi/full/10.1111/j.1468-0335.1937.tb00002.x (accessed 20 Sept. 2019).

[15] Deloitte, *Evolution Through Dis-integration: How the Future of the Financial Services Industry Will Be Shaped by Dramatic Changes in the Value Chain* 2 (2013), https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Financial-Services/gx-fsi-us-consulting-evoloution-through-disintegration-2013-10.pdf (accessed 20 Sept. 2019).

[16] To avoid complexity, for the purposes of this article, I use the expressions supply chain and value chain interchangeably, even though in the more technical literature, substantial differences are identified between the two key concepts. *See* R. B. Handfield et al., *Supply Chain Redesign: Transforming Supply Chains Into Integrated Value Systems* 22 ff. (Financial Times Press 2002).

[17] Deloitte, *supra* n. 15, at 5–6.

Figure 1 Supply Chain for Personal Computers and Tablets[18]



Disintegration of the value chain and gross value added at each step highlights that the country where the goods are finally assembled may not necessarily capture the largest share of the total value. Quantification of the precise 'value capture' by each of the participants in the mobile handset value chain may be useful to underscore the point. Yrkkö et al. employ an innovative methodology to examine the global supply chain for the Nokia N95 smartphone. Introduced by Nokia in 2006, N95 was one of the first and most successful smartphone models and sold

[18] *Ibid.*, at 6.

over ten million copies worldwide. The authors offer a detailed account of each one of the 600 individual components of the N95 manufactured and assembled across a complex global supply chain. The authors identify that taking due account of the 'assembling locations and all the countries of final sale', over 55% of the value added was captured by the EU-27[19] countries. This was true even for the 'Made in China' N95 model that was assembled in China and sold in the US, where the EU-27 captured over 51% of the total value (pages 270–272). This incongruity between the very minor role played by Finland and EU-27 in manufacturing, but still managing to capture more than half the value can be explained by the key role played in 'branding, development, design and management' by the EU-27 countries (pages 272–273). A key conclusion of this detailed empirical analysis is that even when some of the countries, such as China, may get to assemble the final product, this does not necessarily mean that they will manage to capture a significant proportion of the total value added (pages 273–274). In fact, in this case, the country of 'final assembling' managed to capture only 2% of the value that is circa EUR 11 for every N96 sold at EUR 546 plus taxes in the year 2007 (page 274).

In a recent econometric study, Jakubik and Stolzenburg assess gross trade flow at the component level and determine whether there exists any correlation between Chinese exports to the US market, and the number of manufacturing jobs available in the US.[20] The study offers many valuable insights to study the complex relationship between international trade, value added and the impact on local labour markets. First, the US value added is an important input in Chinese exports, and to determine the true value added by Chinese exports, it is important to 'remove this part of Chinese exports', to determine the value added trade data.[21] Second, looking at the data at this level indicates that import competition has a geographic dimension even within a given country.[22] In the case of US for instance, whereas, California, the hub of electronic equipment manufacturers benefits the most, North-West Indiana, home to the largest US steel mill and large aluminium manufacturers is significantly negatively affected by the Chinese exports.[23] The policy implication of the study are twofold. First, Chinese export competition alone is insufficient to explain the decline in

[19] At the time the study was conducted, the European Union comprised of twenty-seven Member States. With Croatia joining the EU in July 2013, the number of Member States currently stands at 28. *See* European Commission, *European Neighbourhood Policy and Enlargement Negotiations* (2019), https://ec.europa.eu/neighbourhood-enlargement/policy/from-6-to-28-members_en (accessed 20 Sept. 2019).

[20] A. Jakubik & V. Stolzenburg, *The 'China Shock' Revisited: Insights from Value Added Trade Flows*, WTO Staff Working Paper (26 Oct. 2018) ERSD-2018-10, Geneva. (accessed 20 Sept. 2019).

[21] *Ibid*., at 3.

[22] *Ibid*., at 4.

[23] *Ibid*.

US manufacturing.[24] Second, considering the dispersed geographic effects of trade even across the same country, an effective policy response cannot be ad hoc or knee jerk, as it can worsen, rather than strengthen the global trading system.[25]

To summarize, two important findings emerge from this section. First, a globally dispersed value chain it seems is a highly beneficial strategy for the firms, as they profit from cheap factors of production, such as land and labour. As neo-classical theory suggests, firms (acting through their management) are rational players that take 'rational' and 'well-informed' decisions to maximize their value.[26] Any external intervention, should therefore, be kept to a minimum to ensure free-functioning markets, and ensure that consumers worldwide benefit from the Ricardian comparative advantage of international trade. Second, the label 'Made in Country X' does not necessarily mean that country X benefits most or captures the highest value of the good manufactured. Non-tangible inputs in the value chain – such as Intellectual Property Rights (IPRs), branding and marketing – determine which firm (at the firm level) or country (at the country level) manages to capture the value of the final good. This then brings me to the next question, if outsourcing or a globally dispersed value chain should not be the central concern of policy makers, then what is real concern that must be addressed to resolve the current debate. In other words, what are the bigger policy objectives that China is trying to achieve by pursuing 'discriminatory licensing' and 'forced technology transfer' practices?

3 SECTION 3: IS CHINA PURSUING INDUSTRIAL POLICY BY ANOTHER NAME?

If a globally dispersed value chain should not quite be an area of concern, then what is? This brings me two issues as regards the current impasse – first, the forced technology transfer debate, and second, the competitiveness (or the lack of it) of the SOEs.

Technology transfer facilitates dissemination of technology and enhances the absorptive capacity of the recipient country.[27] However, disproportionate and onerous set of conditions attached to 'registration, certification and approval

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[24] *Ibid*.

[25] J. Sachs (i), *China Isn't the Economic Manipulator in this Trade War*, Trump is. CNN Bus. Persps. (6 Aug. 2019), https://edition.cnn.com/2019/08/06/perspectives/china-economy-yuan-trump/index.html (accessed 20 Sept. 2019). J. D. Sachs (ii), *Will America Create a Cold War with China*, 12(2) China Econ. J. 100–108 (2019), https://doi.org/10.1080/17538963.2019.1601811 (accessed 20 Sept. 2019).

[26] D. P. Douglas, *The Neoclassical Theory of the Firm: A Note on the Production and Investment Decisions*, 9(2) Canadian J. Econ./Revue Canadienne D'Economique 331–341 (1975). doi:10.2307/134527 (accessed 20 Sept. 2019).

[27] A. Andrenelli, J. Gourdon & E. Moïsé, *International Technology Transfer Policies*, OECD Trade Policy Paper N. 222, 7–8 (24 Jan. 2019), https://doi.org/10.1787/18166873 (accessed 11 Aug. 2019).

procedure' that require transfer of 'sensitive proprietary information' that is not relevant for getting the administrative approval are disconcerting and require attention at the policy level.[28] Likewise, 'demanding' requirements from foreign joint venture partners that may for example require sharing of trade secrets and/or transfer of technology are unreasonable and negatively affect the incentives to innovate and invest.[29]

Opening of the global markets created both, new opportunities as well as novel challenges for well-established global multinational enterprises. Market access opportunities ensured that the companies could sell their goods and services to the emerging markets. The 'Opening of China' (Gǎigé kāifàng) led by Deng Xiaoping in 1978 opened a window of opportunities for the then stagnating Chinese economy.[30] As the world's most populous country, China for sure seemed one of the most attractive markets. At the time, there was huge unmet domestic demand with little or no local competition for the big, well-established international brands. This was the demand side dynamics at play in the Chinese market. On the supply side as well, with its billion plus population, relaxed labour laws and foreign investor friendly investment laws such as huge tax subsidies, China seemed a very promising place to manufacture and assemble goods. However, China right from the outset was highly (un-)popular in the international community for insufficient Intellectual Property (IP) protection laws and legal enforcement mechanisms on the one hand, and the manufacture of cheap, counterfeit versions of popular well-known brands on the other. The international firms thus, were in a typical prisoner's dilemma.[31] They could either choose to co-operate locally (in order to compete globally) with the local Chinese administration and the joint venture partners or miss the train, and let their competitors benefit from access to large Chinese market for manufacturing (supply-side) and the sale of goods (the demand-side). Considering the immense potential size of the market, the international players opted for participation in the Chinese market despite the evident challenge of losing their 'technology-based competitive advantage' because of various Chinese administrative practices such as forced technology transfer to the local joint venture partners and the weak intellectual protection in the country. To account for this resulting loss of competitive advantage, the firms identified a strategy to 'maintain their technological lead through R&D'.[32] The initial

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28 *Ibid*., at 8.

29 *Ibid*., at 8–9.

30 L. Brandt, *China's Great Transformation* (L. Brandt & T. G. Rawski eds, Cambridge University Press 2008).

31 D. Bennett et al., *Technology Transfer to China: A Study of Strategy in 20 EU Industrial Companies*, 21(1/2) Int'l J. Tech. Mgmt. (2001), https://doi.org/10.1504/IJTM.2001.002899 (accessed 20 Sept. 2019).

32 *Ibid*., at 2. The authors' findings are based on structured qualitative interview with senior company managers of twenty leading European Union companies that made substantial investments in China.

investments in China largely tried to benefit from cheap labour, subsidized land and other factors of production and mainly involved manufacturing and assembling activities, with design, marketing and R&D based in countries that offered tough IP-protection and enforcement.[33]

Starting March 1995, when the Chinese government published its new guidelines on foreign investment, the government started pursuing a more structured approach to the Foreign Direct Investment (FDI) and aligned its FDI policy with its domestic industrial policy objectives and the more broadly defined economic and social objectives.[34] Notably, it removed the general tax incentives for foreign investors and instead, identified key advanced and high technology sectors, such as telecommunications, pharmaceuticals and medical equipment, where it offered better tax incentives and duty free status to attract FDI in specific and desired areas of the economy. Even though the firms clearly identified this 'negative externality'[35] and feared losing their technological edge to the local Chinese joint venture partners, they continued to invest in China. The foreign firms identified immediate short term gains and hoped that any adverse impact were to be felt only in the 'medium to longer-term'[36] – a very long period in the profitability-driven corporate world! This is a notable rift between the incentives of the firms and the more general operation of the nation states – where what may be good for the economy at a national level, may be against the interests of private players. Initially, the more developed economies remained somewhat reticent to this issue of forced technology transfer, hoping that China's accession to the WTO and its compliance with the accession protocol would resolve many of these concerns. However, as the Chinese economy emerged as one of the key players on the global stage, the forced technology transfer and other practices of the Chinese government became a pressing concern. In the area of high technology manufacturing, for instance, the United States has a global lead with 29% global market share, with China at a close second accounting for 27% of the global high tech manufacturing.[37] The challenge therefore are issues of 'unfair trade' and 'industrial policies' that though acceptable in a developing economy context gain seismic proportions when pursued through a 'well-financed strategy' by a nation demographically and economically as big as China's, that additionally also enjoys

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33 H. M. Leung et al., *Contractual Relations, Foreign Direct Investments and Technology Transfer: The Case of China*, J. Int'l Dev. 277–291 (Mar. 1991), https://doi.org/10.1002/jid.4010030307 (accessed 20 Sept. 2019).

34 Bennett et al., *supra* n. 31, at 7–8; X. Wu & R. Strange, *FDI Policy and Inward Direct Investment in China*, in *Business Relationships with East Asia: The European Experience* (J. Slater & R. Strange eds, Routledge London 1997).

35 A. Pigou, *The Economics of Welfare* (3d ed., Macmillan and Company, London 1932).

36 Bennett et al., *supra* n. 31, at 19–20.

37 Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 6.

huge trade surplus with its trading partners (most notably the more consumption-driven US economy).[38]

Following President Trump's instruction to the USTR to study the Chinese practices and their impact on the American IPRs and development, the USTR released its section 301 report in March 2018. This section evaluates whether China is pursuing its industrial policy through its 'directed' FDI policy against the backdrop of the findings of the findings of the section 301 report and the 2018 Report to Congress on China's WTO compliance (section 3.1) and the European Commission's recent request for consultation to the WTO regarding the technology transfer (section 3.2). Section 3.3 discusses China's Non-market economy status (NME). Section 3.4 presents the findings of recent econometric studies in order to identify the factual challenges associated with the 'strategic' Chinese approach to licensing and technology transfer, and the diverging treatment by the US and the EU to deal with it.

3.1 China's treatment of foreign joint ventures

In March 2018, the office of the USTR released the results of its investigations regarding Chinese policies in technology transfer, intellectual property and innovation under section 301 of the 1974 Trade Act. The investigation's focal point was 'acts, policies or practices that are unreasonable or discriminatory and that burden or restrict U.S. Commerce'.[39] The USTR's March 2018 investigation deals with three key areas: first, China's Unfair Technology Transfer Regime and Discriminatory Licensing restrictions; second, the interplay of China's industrial policy with its outbound investments and finally, China's intrusions into the US Commercial Networks and cyber-enabled theft of Intellectual Property and commercially sensitive information. Here, I limit the discussion to the first aspect. Considering their impact on outbound investments, other aspects are assessed critically in the second part of this article. Following China's accession to the WTO, the USTR annually reports to the US Congress about China's compliance with commitments made during its accession. A key concern described in the report is China's continued policy of 'state-led, mercantilist approach to the economy and trade' despite China's commitments to the contrary.[40] This has led to novel challenges for the multilateral trading system that was '[not] designed to

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[38] James Lewis, CSIS, *Submission, Section 301 Hearing 1*, quoted in Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 17.

[39] Trade Act of 1974, 19 U.S.C.§ 2411 (a)–(b).

[40] United States Trade Representative (Feb. 2019) 2018 Report to Congress on China's WTO Compliance, at 5.

deal with a non-market economy of China's size'.[41] Special features of China's economy such as its 'socialist market' and the inter-linking processes across different departments presents new challenges to the WTO. One of the key outcomes of this is the 'trade-distorting subsidization' by China.[42]

Before discussing the key findings of the report, it may be useful to highlight the meaning of the terms 'discriminatory' and 'unreasonable'. 'Discriminatory' within the meaning of section 301 includes 'any act, policy and practice which denies national or most-favoured nation treatment to United States goods, service, or investment'.[43] An act, policy or practice is deemed 'unreasonable' when 'while not necessarily' in violation of, or inconsistent with, the international legal rights of the United States, is otherwise 'unfair' and 'inequitable'.[44]

In the year 2005, the Chinese government issued the National Medium – and Long-Term Science and Technology Development Plan Outline (2006–2020) (MLP) wherein it identified the weakness of the Chinese economy in 'indigenous innovation capacity', which lagged way behind those of the developed countries.[45] The MLP is a key policy document of the Chinese government[46] that identifies eleven key sectors and sixty-eight priority areas for technology development with a clear objective of increasing the share of indigenous technologies in these eleven sectors to 70% by the year 2020.[47] In order to promote innovation and reverse engineering, the document argues for an Introduction, Digestion, Absorption and Re-innovation*(IDAR) strategy. The IDAR includes 1. the'yinjin'* that is 'introduction' (through technology transfer, inbound and outbound investments); 2. *'xiaohua'* that is 'digestion' (of foreign technology following its acquisition); 3. *'xishou'* that is 'absorption' (through collaboration between the Chinese government and domestic industry, including funding by the government) and 4. *'zai chuangxin'* that is 're-innovation' and improvement of the foreign technology.[48]

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41 *Ibid*., at 5.
42 *Ibid*., at 7.
43 19 U.S.C.§ 2411 (d)(5).
44 19 U.S.C.§ 2411 (d)(3)(D).
45 Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 10; Notice on Issuing the National Medium- and Long-Term Science and Technology Development Plan Outline (2006–2020) (State Council, Guo Fa [2005] No.44, issued 26 Dec. 2005) § 1.
46 The MLP is in turn supported by a host of other policy documents, announcements by the Communist Party and Notices such as the Made in China 2025 Notice.
47 Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 10; Notice on Issuing the National Medium – and Long – Term Science and Technology Development Plan Outline (2006–2020) (State Council, Guo Fa [2005] No.44, issued 26 Dec. 2005) § 2(2) para 3. Notable sectors included are biotechnology, information technology, advanced materials, advanced manufacturing, advanced energy, marine, laser and advanced aerospace technology.
48 Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 11–14. *Also see* the references therein.

3.1[a] *Chinese 'Unfair Technology Transfer Regime'*[49]

To execute its *IDAR strategy*, the Chinese government conditionally offers market access to foreign companies. The access is conditional upon fulfilling multiple joint venture requirements, such as the need to enter into a joint venture with a local Chinese firm and the transfer of technology to the local Chinese partner. In the automobiles sector, for instance, the Chinese government has long pursued the 'Changan Model' whereby foreign carmakers must enter into a joint venture with a local Chinese partner, and the non-Chinese ownership cannot exceed 50%.[50] Cloud computing sector, a priority area identified in the policy document, is another interesting example, where the cloud service providers (CSPs) are required to obtain a value-added telecommunications license and for this, they need to enter into contractual arrangements with a local partner.[51] These conditions are flagrant violation of China's WTO accession agreements.[52] In addition, considering the 'opaque administrative procedures' and oral instructions delivered by the Chinese authorities, the Chinese partner plays a key role in the entire licensing and administrative approval process and gain access to highly sensitive technical information and trade secrets that it may later use to its strategic advantage.[53]

The Chinese Government's Foreign Investment Catalogue, first issued in 1995, and most recently revised in 2017, comprises of three key categories of foreign investment: 1. 'encouraged', 2. 'restricted', and 3. 'prohibited'. Foreign investment in industries not mentioned in either one of these three categories are possible via the automatic route.[54] By pursuing the above-referred measures, the Chinese government pursues a discriminatory and unreasonable foreign investment policy to achieve its industrial policy objectives.[55]

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[49] This section summarizes the findings of the Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 19–47. For ease of reading only key policy documents are referred here. The report mentions the particular communications, guidelines and notices in detail.

[50] *Ibid*., at 29 ff.

[51] *Ibid*., at 39–41.

[52] Protocol on the Accession of the People's Republic of China, WTO Document WT/L/432 (23 Nov. 2001) para 7.3 and the Report of the Working Party on the Accession of China, WTO Document WT/ACC/CHN/49 (1 Oct. 2001) para 203 (incorporated in the Accession Protocol through para 1.2).

[53] Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 19 ff. This challenge of ambiguities in the licensing procedure is particularly acute in case new and emerging industries, s. 301 findings, at 39.

[54] Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 24 ff; Covington & Burling LLP (10 Aug. 2014), at 5.

[55] Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 45.

3.1[b] *China's Discriminatory Licensing Restrictions*[56]

The second key finding of the 2018 USTR Report is the discriminatory licensing practices that restrain the freedom of US technology owners to 'bargain' and enter into market-based licensing negotiations with the domestic companies. In China, following three key instruments regulate the transfer of technology. First, Regulations of the People's Republic of China on the Administration of the Import and Export of Technologies (TIER); second, Regulations for the Implementation of the Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures (JV Regulations) and third, the Contract Law of People's Republic of China (PRC Contract Law). Whereas, the TIER and the JV Regulations regulate the relationship between the Chinese and the foreign joint venture partners, the PRC Contract law governs the relationship between domestic Chinese joint venture partners.[57]

Notable limitations on foreign JV partners include the following. First, the TIER includes the non-negotiable requirement for foreign partners to indemnify the joint venture for any infringement of the 'lawful interests of any other person'.[58] This stands in clear contrast to the PRC contract law whereby the parties are free to negotiate the terms and conditions for the domestic transfer of technology and 'bargain' amongst themselves the liability for indemnification.[59] Limiting the possibility of free market-based 'bargaining' is clearly against the principles of a free market economy, and puts foreign partners at a relative disadvantage when compared with the domestic joint venture partners.

Second, the TIER permits the joint venture partners to make improvements to the technology, and any further improvements to the technology are 'severable' from the original technology that are patentable in China or elsewhere across the globe.[60] This means that even with little incremental improvements, the domestic joint venture partner can choose to severe its prevailing joint venture. It can then

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[56] In this section, I highlight the key challenges emerging from China's discriminatory licensing restrictions. The USTR's Report mentions in detail the names of the particular Acts and policies that facilitate these discriminatory practices and creates an uneven ground for the domestic and foreign joint venture partners. *See* Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 48–61.

[57] *Ibid*., at 48–49.

[58] Article 24 TIER states that in a joint venture with a foreign company, the 'liabilities shall be borne by the licensor for infringing the lawful interests of any other person', as quoted in Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 49, 51.

[59] Article 353, PRC Contract Law reads '[w]here the exploitation of the patent or utilization of the technical know-how by the transferee as contracted infringes upon the legitimate rights and interests of others, the liability therefor shall be borne by the transferor, unless the parties stipulate otherwise.', as quoted in Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 52.

[60] Article 27, Art. 29(3) TIER, as quoted in Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 49–50, 52–53.

patent and use the new slightly improved technology without paying any license fees or offering access to this improvement to the original foreign JV partner.

Third, following the completion of the term of the technology transfer agreement,[61] the Chinese joint venture partner is free to use 'unconditionally' the licensed technology in 'perpetuity' without paying any compensation to the foreign firm.[62] This stands in stark contrast to the provisions of the PRC Contract Law applicable to domestic transfer of technology, whereby following the parties' failure to negotiate and determine the ownership of improvements, the default provisions stipulate that 'neither party owns any improvement made by the other party'.[63]

As the foregoing instances illustrate, there is evident differential treatment between foreign imported technology licensors – that are deprived of the benefits of the domestic contract licensing regime under the PRC Contract Law, and the domestic joint venture partners who are 'not' subject to the onerous requirements of the TIER and the JV Regulations. The provisions of the TIER and the JV Regulations not only stand in clear conflict with the provisions of the domestic Chinese Contract Law, they also limit the ability of the foreign licensor to extract optimum payment for their innovation (that may in turn incentivize them to engage in further innovation). China, it seems has clearly paid heed to Sun Tzu's advice that 'great results can be achieved with small forces' by pursuing industrial policy objectives through its arsenal of domestic laws.

3.2 Measures by the European Union

The European Union on its part recently requested for consultation to the WTO. This is a diplomatic and more preferred measure, when compared with the unilateral actions taken by the US.[64] The European Union pursuant to Articles 1 and 4 of the Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU), Article XXII of the General Agreement on Tariffs and Trade 1994 (GATT 1994) and Article 64 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) requested for consultations with

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61 Usually set at ten years (Art. 43(3), JV Regulation).

62 Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 53–54.

63 Refer in particular to discussion on Art. 27, TIER and Art. 61 and Art. 354 of the PRC Contract. *See* Office of the United States Trade Representative Executive Office of the President (22 Mar. 2018), at 52–53.

64 J. P. Meltzer & N. Shenai, *The US-China Economic Relationship: A Comprehensive Approach*, Policy Brief: Global Economy and Development at Brookings, Brookings Institute (Feb. 2019), https://www.brookings.edu/research/the-us-china-economic-relationship-a-comprehensive-approach/ (accessed 20 Sept. 2019).

China. The key issue in the requested consultation concerns 'transfer of foreign technology' in China.[65] The EU's complaint echoes largely similar concerns as presented in the USTR's 301 Report, discussed in the above section. The Union's concerns in particular are as follows. First, China uses its domestic legislation to restrict access to foreign investment by conditioning foreign investment on 'the transfer of technology and undertaking R&D in China'. These requirements as per the complaint are contrary to China's WTO obligations. Second, foreign investment in China is encouraged based on its 'negative lists/catalogues' that classifies investments into three categories – 'encouraged', 'restricted' or 'prohibited'. This in turn leads to certain sector-specific requirements – such as the need to enter into a joint venture with a local partner, licensing requirements and other onerous administrative procedures. Third, China's legislation establishes a different set of rules for Sino-foreign JV on the one hand, and purely domestic ventures on the other. Fourth, China places unjustified restrictions on the foreign IPR holders to 'freely negotiate market-based contractual terms in licensing and other technology-related contracts'.[66] Fifth, the provisions of China's JV Regulations, the New Energy Vehicle Production Enterprises and Product Admissions Regulations (NEV Regulation) and the Administration of the Examination, Approval and Registration of Foreign-invested Crop Seed Enterprises Provisions (Seed FIE Approval Provisions) violate China's WTO commitments.[67] These commitments are stated under paragraph 7.3 of Part I of China's Accession Protocol and paragraph 1.2 of Part I of the Protocol that incorporate the commitments made under paragraph 49 and paragraph 203 of the Report of the Working Party on the Accession of the People's Republic of China to the WTO (Working Party Report).[68] Sixth, the provisions of the JV Regulation that sets onerous requirements for approval of technology transfer agreements limits the duration of the technology transfer agreement to ten years and permits the local partner to use the technology without paying any fee to the foreign patent holder are a violation of Article 28.1(a) and (b), Article 28.2, Article 33, Article 39.1 and 39.2 of the TRIPS Agreement. Seventh, by treating domestic IPR holders and the accompanying technology transfer agreements (that are instead subject to China's domestic

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65 Request for Consultation by the European Union (Dec. 2018). For the list of specific legal instruments that China uses to exercise these discriminatory practices, *see* at 2–5 of the Request. This more recent request replaced the EU's earlier request dated 1 June 2018 (WT/DS549/1, G/L/1244, IP/D/39).

66 *Ibid.*, at 2.

67 *Ibid.*, at 5–9. China's JV Regulations comprises of indemnity provisions and need for the joint venture to serve the objective of the development of China's economy. The NEV Regulation includes certain performance requirements and localization of the production and R&D in China. The Seed FIE Approval Provisions include onerous provisions such as the transfer of valuable genetic material and valuable equipment and second, conduct of R&D in China.

68 China Accession Protocol, *supra* n. 52.

contract law) differently from the foreign IPR holders, China does not offer 'national treatment' and the act is a violation of Article 3(1) of the TRIPS. Finally, inducing the transfer of foreign technology through the afore-mentioned measures are identified as breach of China's obligations under Article X.3 (a) of the GATT 1994 and paragraph 2(a) (2) of the Accession Protocol.

Shortly after the EU's request, Japan requested to join the consultations, as it is one of the key exporters of technology to China.[69] The request is currently pending consultation. The outcome in this dispute is anticipated to be break-through, as it is a litmus test whether the WTO's DSU can successfully resolve the impasse such as the current trade war.

3.3 China as a non-market economy

China poses a very novel challenge to the current global trading system. This can be explained by the very distinctive nature of Chinese economic structure that Wu refers to as 'China, Inc.'[70] The Chinese economy is *sui generis* in the sense that even though the State and the Chinese Communist Party play a decisive role in the management of the SOEs, market forces play a key role in the functioning of the economy.[71] Even though all the Chinese SOEs are controlled by State-owned Assets Supervision and Administration Commission of the State Council (SASAC), these companies compete against one another and fight with another for market share.[72] This offers China a unique competitive advantage – China has 'national champions' that operate in a highly contestable market (!)[73] This SASAC and SOE-like structure is further replicated at the provincial and local levels, overall contributing to the highly exceptional nature of China's economic structure.[74]

Considering the special nature of the Chinese economy, Article 15 of the Chinese accession protocol dealing with 'price comparability in determining subsidies and dumping' to the WTO classifies China as a non-market economy (NME).[75] This mean that there is a default presumption that the Chinese firms do not operate in a competitive free market economy. A key fallout of this default presumption is that the domestic prices of a given good need not be considered as the actual value of the good. A key advantage of the

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69 China – Certain Measures on the Transfer of Technology, Request to Join Consultations: Communication From Japan (2019) .

70 M. Wu (2016), *The 'China, Inc.' Challenge to Global Trade Governance,* 57(2) Harv. Int'l L. J. 264–265 (2011), https://harvardilj.org/wp-content/uploads/sites/15/HLI210_crop.pdf (accessed 20 Sept. 2019).

71 *Ibid.,* at 264–266.

72 *Ibid.,* at 274–275.

73 *Ibid.,* at 274–276.

74 *Ibid.,* at 280–283.

75 Accession of the People's Republic of China (WT/L/432 dt. 23 Nov. 2001).

provision is that unless the firm is able to prove to the contrary, the price and the cost of a good in China cannot be taken as the relevant benchmark during trade-related investigations. Instead, the relevant benchmark is the market economy (ME) that is closest to the NME in terms of the level of development, based on gross national income (GNP) on a purchasing power parity (PPP) basis. Following fifteen years of China's accession to the WTO, in the year 2016, China requested the EU and the US to disregard the provisions of section 15. This was based on the disputed interpretation of section 15(d) that the provisions of the section are applicable valid only for a period of fifteen years from the date of accession.[76] Following the EU and US's refusal to agree to China's request, in December China brought a case before the WTO dispute settlement body.[77] China officially pursued the complaint only against the EU. Shortly thereafter, as it became evident that China would face a significant loss at the WTO, it requested the panel for suspending the legal proceedings.[78] The practical implication of this withdrawal by China is that the EU and the other economies can continue to treat China as an NME and levy anti-dumping duties on Chinese goods.

3.4 Technology transfer and quantitative evidence

Before getting into the details of the effectiveness of the approaches pursued by the US and the EU, and the continued treatment of China as an NME, this subsection attempts to briefly identify whether the execution of China's industrial policy through its foreign investment policy has indeed worked to its advantage and conversely to the detriment of other countries.

Holz econometrically studies the impact of different policy decisions such as sector-specific policies, Five-Year Plans, the seven 'strategic emerging industries' (*zhanluexing xinxing chanye*) issued by the State Council in 2010 and the more recent 2015 'Made in China 2025' policy circular issued by the State Council, largely inspired from Germany's 'Industrie 4.0' vision.[79] Holz evaluates whether these policy documents and subsequent measures implemented by the government have a clear strategy and thereby distinctly

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[76] For an analysis of the deliberation of the EU Parliament on the subject, and the position of leading economies such as Japan, *see* L. Puccio, *European Parliament (10 November 2015) Granting Market Economy Status to China: An Analysis of WTO Law and of Selected WTO Members' Policy*, http://www.europarl.europa.eu/thinktank/da/document.html?reference=EPRS_IDA(2015)571325 (accessed 20 Sept. 2019); For the US position, *see* Congressional Research Service, *China's Status as a Nonmarket Economy*, In Focus (10 Jan. 2019), https://fas.org/sgp/crs/row/IF10385.pdf (accessed 20 Sept. 2019).

[77] China files WTO complaint against US, EU over price comparison methodologies (12 Dec. 2016).

[78] T. Miles, *China Pulls WTO Suit Over Claim to Be a Market Economy*, Reuters Business News (17 June 2019), https://www.reuters.com/article/us-usa-china-wto-eu/china-pulls-wto-suit-over-claim-to-be-a-market-economy-idUSKCN1TI10A (accessed 20 Sept. 2019).

[79] C. A. Holz, *Industrial Policies and the Changing Patterns of Investment in the Chinese Economy*, 81 China L. J. 4–10 (2018), https://www.journals.uchicago.edu/doi/abs/10.1086/699877?journalCode=tcj (accessed 20 Sept. 2019). *See also* references therein.

contributed to the growth of these sectors of the economy or in the alternative, there exists no noticeable correlation between the two. Following remarkable findings emerge from the study. First, it is extremely difficult, if not impossible, to fit China's industrial policies even within China's own sector classification system! As an example, even though 'new energy vehicles' can logically be identified as a sub-sector in the automobile manufacturing, this does not appear to be the case in the Chinese system of classification.[80] Second, strategic approach to foreign investment has not necessarily always led to the desired results. For example, even though China's 'Made in China 2025' has a high focus on Information Technology, the sector has so far not experienced the desired level of growth; whereas, sectors such as 'agriculture, trade, business services, health and social services' that are not the focus of the industrial policies experienced significant investment and growth.[81] Third is the increasingly important role of the private sector in the 'non-public goods' sector.[82] This is a noteworthy finding considering the commonly held notion that the SOEs are the principle-players in the Chinese economy.[83] The SOEs were historically more significant, as they operated in areas that met the more basic requirements of the general population, such as the public goods sector like transport and utilities.[84] In particular, the findings of the study call for a rethink of the priority issues that need to be addressed with regard to China's non-compliance with its WTO obligations. It also means that China's 'Made in China 2025' strategy may be largely driven by the private sector.[85] Fourth, the author identifies that for the period studied – that is between 2012 and 2015 – not all the investment can be explained on the basis of industrial policy. 'Profitability, market demand and capital intensity' have an equally 'clear, strong, and positive influence' in driving investment in the Chinese economy.[86] This empirical finding echoes Wu's observations on China Inc., discussed in the sub-section above.

Finally, today, foreign-funded investment in China has a very limited role to play in the development of the economy. Foreign investment is limited to just 15% of investment and primarily concentrated in a few key sectors such as 'automobile', 'computers' and 'other financial activities'.[87] For the year 2016, the Chinese

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80 *Ibid*., at 10.

81 *Ibid*., at 15–16. *See* particularly the graph on p.16 and the table on pp.17–19.

82 *Ibid*., at 30.

83 In the year 2015, for instance, state owned and state controlled investment stagnated at around 7%; whereas the private sector accounted for over 78% of the total investment. *See* Holz, *supra* n. 79, at 35. Note that this does in no way diminishes China's WTO challenge. It only alters the priority areas and how they need to be dealt with. To the extent they concern inbound investment, I talk about the them in this article. With regards to the outbound investment, the issue is dealt with in the second part of this article.

84 L. Shih, *Chinas industriepolitik von 1978–2013: Programme, Prozesse und Beschränkungen* (Springer Verlag, Heidelberg 2014).

85 Holz, *supra* n. 79, at 35.

86 *Ibid*., at 31, 34–36.

87 *Ibid*., at 31, 36.

Bureau of Statistics put this number at 25% – a significant 10% higher then Holz's estimate. Whatever be the precise percentage – 15% or 25% – the percentage decline in the contribution by foreign investors from 1970s (when the contribution was well over 50%) to the more recent times cannot go unnoticed.[88] This really calls into question, the effectiveness of US' unilateral measures such as US President Trump's tariffs on imports worth over US USD 250 billion. Discerningly, the EU (as it rightly pursed the WTO-route) and the US need to put their act together, and re-think the issue of China's 'discriminatory licensing' practices and 'forced technology transfer' ever more sensitively. UK's role in this debate will only become more prominent over time, considering the attractiveness of the British market for Chinese investments in general and the exporters desire to benefit from the Brexit windfall in particular.[89]

4 SECTION 4: CONCLUSION

The EU and the US have employed very different instruments to resolve the current challenge posed by the rising dragon. Whereas the US under the Trump administration resorted to a host of measures – ranging from filing cases at the WTO to various tariff and non-tariff measures, initiated criminal proceedings and the extradition of Meng Wanzhou, the Chief Financial Officer of Huawei,[90] the EU has largely resorted to the WTO Dispute Settlement, and refused to grant the MES to China.

From the business perspective, it is useful to keep under consideration that 'disintegration' of the value chain and other technological innovations have changed the role and value of 'knowledge'. In the case of manufactured goods, for example, whereas 'knowledge component' contributed to around 20% of the value of the product in the 1950s, by 1995, it climbed to well above 70%.[91] In the context of the ICT goods, it may be no exaggeration to suggest the value of the knowledge component is even more central to the total value of the product. To put in perspective, quantifying the value addition in Nokia smartphone, as outline in section 2 above, is illustrative.

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88 *Ibid*., at 36.

89 Xinhua, *Le Brexit aura un impact limité sur le marché chinois mais devrait renforcer les relations commerciales sino-britanniques. Xinhuanet* (27 June 2016), http://french.xinhuanet.com/2016-06/27/c_135469564.htm (accessed 20 Sept. 2019).

90 Guardian Staff & Agencies, *Meng Wanzhou: Huawei CFO Seeks Halt to Extradition After Trump Comments*, The Guardian (9 May 2019), https://www.theguardian.com/technology/2019/may/09/meng-wanzhou-huawei-cfo-seeks-halt-to-extradition-after-trump-comments (accessed 20 Sept. 2019).

91 P. Roffe & T. Tesfachew, *Revisiting the Technology Transfer Debate*, Lessons for the New WTO Working Group, Bridges: Comment 7, 12 (2010), https://www.iprsonline.org/ictsd/docs/RoffeTesfachewBridgesYear6N2February2002.pdf (accessed 20 Sept. 2019).

Unilateral actions, though may seem prima facie attractive to the US government in the short run, such measures have in the long-run significant negative repercussion for the well-established international trade law and policy. Even in the short run, the US economy has witnessed immediate negative fallouts. With tariffs on goods worth USD 250 billion already in place, the US plans to impose an additional 10% tariff on the remaining USD 300 billion goods that include primarily laptops, smartphones and other high technology products.[92] The decision to impose further tariffs had an immediate negative impact on the bottom line of the US chip makers, with Qualcomm and AMD each posting a decline of 13% revenues when compared with their performance in the same period in the previous year.[93]

There is little doubt that WTO has been one of the more successful international organizations in achieving its larger objective to remove trade barriers (particularly tariff-related barriers) to the free movement of goods and services. It largely achieved this by employing a highly successful, but extremely controversial strategy of 'multi-issue negotiations' and the 'strategic use of linkages' thereby creating results that seemed *'pareto efficient'* for all the participants.[94] The WTO achieved what the World Intellectual Property Organization (WIPO), the United Nations' organization dealing exclusively with the IPRs failed to achieve. As regards the IPRs, there clearly was a divide between the developed and the developing world. Whereas the more developed and industrialized nations, and the multinational enterprises in particular had the greater share of intellectual property rights, emerging economies such as China, particularly due to their large population and unmet demand, are an attractive market for these goods and services. For China, access to the developed markets principally access to the developed US and the EU markets, is a notable incentive that it can little afford to lose. The negotiators of the WTO strategically linked the two issues together and offered as what may be identified as a 'take it or leave it' package. This left little for the two parties to cherry-pick, and signing the deal seemed *'pareto efficient'* for both sides.

Starting with Deng Xiaoping's 'open door' policy in 1978, China progressively 'liberalized its trade' and FDI regimes. As discussed in section 3, China also subsequently strategically aligned its FDI policy with its larger development

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92 Goldman & Duffy, *supra* n. 8; C. Duffy, *The Trade War with China Is Coming for the American Computer Industry*, CNN Bus. (2 Aug. 2019), https://edition.cnn.com/2019/08/02/tech/chipmakers-huawei-ban/index.html (accessed 20 Sept. 2019).

93 Duffy, *supra* n. 92.

94 A. Bradford, *When the WTO Works, and How It Fails*, University of Chicago Law School Chicago Unbound: Public Law and Legal Theory Working Papers (2010), https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1380&context=public_law_and_legal_theory (accessed 20 Sept. 2019).

objective. This is most evident in the 'one belt one road' initiative, an issue that I discuss in some detail in the second part of this article – that deals exclusively with the outward investments by China.

Since its formation, the WTO's Dispute Settlement Mechanism has played a notable role in dealing with tariff and non-tariff barriers to trade. In sections, two and three above, I highlight the following key issues – first, China's dealing with the WTO has been mixed and strategic, meaning that this puts some doubts on the degree of effectiveness of the mechanism in its current form. This in turn, has led many, including the EU-China chamber of commerce and various renowned scholars to call for a reform of the system. Second and perhaps very important is the fact that the US and the EU need to recognize the emerging economic importance of China on the world stage. China today is not only the largest market for manufactured goods; it is also increasingly the largest investor in new age technologies that promise some of the biggest innovations, and thus, the competitive advantage of nations in the digital age.[95] The United States and China today respectively control 38.4% and 30% of the world's supercomputing power.[96] This means that for an 'effective strategic use of linkages', like when the WTO was first negotiated, the challenges today are way different – and to ensure the continued credibility and success of the WTO, those new challenges need to be appropriately identified and suitably addressed. Member States that played a key role in the establishment of the WTO today more than ever need to work harmoniously to preserve its sanctity. This may be done through a *systematic consensus-driven reform of the WTO.*[97]

Moreover, to assess China's compliance (or non-compliance), it must be kept in mind the onerous commitments that it offered during accession, almost equivalent to those offered by the developed countries.[98] Its WTO-plus commitments are the additional set of obligations, well-above those in the WTO, whereas the WTO-minus provisions are the derogations from normal WTO obligations, especially for China.[99]

Second, it is undeniable that considering the size of the Chinese economy, the central role played by the SOEs in the Chinese economy not only effects trade, it also affects the free operation of 'China's markets [and] markets outside of China'.[100] This

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95 K. Walch, *The Race for AI Dominance Is More Global Than You Think. Medium* (28 Aug. 2018), https://medium.com/cognilytica/the-race-for-ai-dominance-is-more-global-than-you-think-e01a0c34d64e (accessed 20 Sept. 2019).

96 Goldman & Duffy, *supra* n. 8.

97 Bradford, *supra* n. 94.

98 Vicker, *supra* n. 4, at 259.

99 *Ibid*.

100 United States Trade Representative (Feb. 2019) 2018 Report to Congress on China's WTO Compliance, at 11.

also means that considering the growing size and importance of the Chinese economy, alienation of the country on a global scale is not in the interest of trade, competition, or geopolitical stability. To preserve the long-term credibility of global institutions, such as the WTO, it is thus, highly desirable to preserve China's faith in the WTO.[101]

Third, issues that remain unaddressed through the plurilateral trading system can be more systematically addressed through free trade agreements. As the foregoing discussion elucidates – many of the problems for China and those that China, allegedly 'dumps' on the rest of the world such as 'structural imbalances, excess capacity and low productivity' are in the state-led SOE economy.[102] China has an impressive record of implementing its Anti-Monopoly Law (AML) that came into effect about a decade ago in August 2008. Instead of alienating China, involving one of the world's largest economy may rather be an upright strategy. Inclusion of competition provisions in bilateral agreements, in addition to strengthening and reforming the WTO will be highly desirable. The Trans-Pacific Partnership (TPP) creatively addressed the challenge posed by the Chinese SOEs.[103] As an example, whereas the GATT/WTO assesse an enterprise, based on 'normal commercial considerations', the TPP offers a model template for future FTAs and perhaps also the WTO, as it identifies many situations that are completely unaddressed by any other contemporary text.[104] Relevant situations include where an enterprise benefits from 'preferential financing, selective enforcement of laws [and] regulatory exemptions'.[105] It is thus, lamentable that shortly after Trump became President, the US pulled out of the TPP.[106]

Finally, it important to absorb John Ruggie's concept of 'embedded liberalism', as 'liberalism "embedded" in domestic welfare and support programs'.[107] In other words, both – the emerging countries, as well as the more developed countries should benefit from a consensus-driven policy space, wherein the countries mutually agree to benefit from 'economic globalization', conditioned on the liberty that will 'safeguard a country's policy space'.[108]

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101 Wu, *supra* n. 70.

102 W. Kovacic, *Competition Policy and State-Owned Enterprises in China*, 16(4) World Trade Rev. 694–695 (2017), https://doi.org/10.1017/S1474745617000271 (accessed 20 Sept. 2019).

103 R. Bhala TPP, *American National Security and Chinese SOEs*, 16(4) World Trade Rev. 658–661 (2017); Symposium on State Owned Enterprises in China, https://doi.org/10.1017/S1474745617000258 (accessed 20 Sept. 2019).

104 *Ibid*., at 662–663.

105 *Ibid*., at 662.

106 *Ibid*.

107 J. Pauwelyn, *New Trade Politics for the 21st Century*, 11(3) J. Int'l Econ. L. 559–573 (2008), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1260617 (accessed 20 Sept. 2019).

108 *Ibid*.

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