

Toward an Explanation of U.S.-China Trade Disputes: Entrepreneurial Innovation, Protectionism and the Struggle for Hegemony in the Global Economy

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Abstract

The paper puts forward an international development model based on entrepreneurial innovation and learning to explain the origin of recent U.S.-China Trade disputes. It argues that Schumpeterian innovation initiates a wave of “creative response” in an economy and widens income and productivity gaps between this economy and the rest of the world. Equipped with advanced military weapons and technological skills, the advanced nation (first mover) calls for free trade with an attempt to enter overseas markets. Preventing the collapse of their economies, governments of developing economies (latecomers) imposes tariff and other means to limit import of foreign goods. This is the beginning of international conflict. Taking the advantages of cheap labor and resources in developing areas, transnational corporations from the advanced nation enter developing economies in the form of foreign direct investment. They soon penetrate and destroy traditional industries

of developing economies. Being weak in technologies and resources, developing economies have no choice but to follow the leader and are content to be a follower. Hence, the world enters into a state of cooperation and harmony. At the same time, foreign direct investment entering developing areas provides opportunities for latecomer firms to learn and catch up. Through learning and imitation from transnational firms, latecomer firms are able to produce and sell imitative and improved products at lower prices. As international markets are flooded with cheap and improved goods, profit margins in the international market decline. Seeing that latecomer economies are able to catch up and threaten its supreme global position, the advanced nation reverts its free trade strategies and calls for trade protection. The tension between two economic camps (the first mover and latecomer economies) increases. This dilemma will not be resolved until another wave of Schumpeterian innovation emerges to redefine the international division of labor and world economic order. This model is illustrated by US-China trade relationship since 1979 and allows us to understand the recent US-China trade disputes.

Keywords: *international development, US-China trade disputes, entrepreneurial innovation, learning and catching up, protectionism*

1. The US-China Trade Disputes

The great power competition with China is “a fight with a really different civilization and a different ideology ... it’s also striking that it’s the first time that we will have a great power competitor that is not Caucasian.”

Dr. Kiron Skinner, Director of Policy Planning at the US State Department

Source: *The Washington Post* (4 May 2019)

“If both sides treat their trade dispute purely on its own merits, their trade negotiators will be able to resolve it. But if either side uses trade rules to keep the other down, then the dispute will not be resolved.”

Lee Hsien Loong, Prime Minister of Singapore

Source: *Channel News Asia* (31 May 2019)

After Deng Xiaoping’s open-door policy in 1979, China and the United States have gone through a relatively harmonious trade relationship for a period of time. However, after more than 40 years of economic reform, China becomes the second largest economy in the world and rises as a global superpower. The United States (hereafter U.S.) is well aware of China’s threats. Clashes between two nations begin.

Since January 2018, China and the U.S. have engaged in a trade war involving the mutual imposition of tariffs. In particular, the U.S. President Donald Trump (hereafter as Trump) wants to fix China’s “longtime abuse of the broken international system and unfair practices.”¹ Furthermore, in April 2018, the U.S. complained to the World Trade Organization (WTO) that China has severely violated intellectual property rights. Relying on Section 301 of the Trade Act of 1974, the U.S. claims that Chinese laws undermine intellectual property rights by forcing foreign companies in the joint ventures to give the Chinese firms access and permission to use, copy and modify American technologies. Trump also considers China’s plan of “Made in China 2025” as a severe threat to the U.S. economy and national security, therefore imposed tariff and other regulations on Chinese goods, in an attempt to curb China’s expansion. However, China argues that U.S. trade policies are typical unilateralism, protectionism and bullying. China argues that the U.S. government is a clear violation of the basic WTO principle of most-favored-nation treatment as well as the basic spirit and principles of international law (*China Daily*, 13 July 2018).

Effort on cooling down the trade disputes between the two nations failed. The trade war has escalated on 5 May 2019. The Trump administration raised the tariffs of 10% levied on US\$200 billion worth of Chinese goods to 25% on 10 May 2019. China retaliates by raising tariffs on \$60 billion worth of U.S. goods on 1 June 2019 (*BBC*, 14 May 2019; see also Appendix 1).

Apart from tariff, the U.S. also sanctioned on China's information and communication technology. On 15 May 2019, Trump issued the Executive Order which gave the government power to restrict any transactions with "foreign adversaries" that involved information and communications technology (*South China Morning Post*, 16 May 2019). Trump emphasized that these adversaries posed "unacceptable risks" to national security. On the same day, the U.S. Department of Commerce added Huawei and 70 "affiliates" to its "entity list" under the Export Administration Regulations. This restricts U.S. companies from doing business with Huawei without a government license (*ibid.*).

Responding to the U.S.'s offensive moves, the Beijing government states that China will defend its legitimate rights and interests at all costs. He warns the U.S. government not to go further down the wrong path to jeopardize China-US relations (*South China Morning Post*, 21 May 2019).

Literatures on international trade disputes are not lacking. When international economic relation is viewed in terms of trade, mainstream neoclassical studies have utilized the Neo-Ricardian theory of comparative advantage. While this neoclassical theory has contributed to our understanding of international trade and development, it neglects the important fact that entrepreneurs or governments can alter the given resource situation of an economy and hence its comparative advantage. In this sense, Porter (1990: 65) is right to contend that "the principle of comparative advantage ... fails to capture the determinants of economic

success in the modern world economy”. He recommends using the concept of “competitive advantage” which emphasizes on organizational learning, creative thinking and knowledge. More crucially, the theory of comparative advantage ignores political, cultural or social factors in trades. Huntington (1993; 1997) argues that the US-China conflicts represent a clash of civilizations. Zhang Lin, a Beijing-based political economy analyst comments that “the growing conflict between Beijing and Washington is very little to do with tariffs”. Instead, it is “a clash of civilizations and ideologies” (*South China Morning Post*, 15 October 2018). The U.S. and China are now struggling for hegemony in global affairs.

Given that there was very little research incorporating international trade, technology transfer, and politics in the world development, this paper attempts to fill the gap. It will formulate a model of international development which incorporates entrepreneurial innovation, learning, technology transfers and protectionism associated with the struggling for hegemony between the world’s two superpowers. The model allows us to understand the US-China trade war in broader international political economy perspective.

2. Toward a Model of International Development: Entrepreneurial Innovation, Protectionism and Struggling for Hegemony

Based on Cheah and Yu (1996: 241-266), our model starts with two types of entrepreneurship, namely Schumpeterian and adaptive². Schumpeterian innovation is extraordinary. It imposes a “creative destruction” to the economy (Schumpeter, 1934/1961: 81-86). Adaptive entrepreneurs attempt to exploit opportunities in the economy. Their activities bring about a change *within* the system.

2.1. Schumpeterian and Adaptive Entrepreneurship

According to Schumpeter (1934/1961), entrepreneurs bring about technological breakthroughs and exert a disturbing force on an economy. Schumpeterian entrepreneurship encompasses three essential characteristics.

First, it can always be understood *ex post*; but it can practically never be understood *ex ante*; that is to say, it cannot be predicted by applying the ordinary rules of inference from the pre-existing facts. Secondly, it shapes the whole course of subsequent events and their long-run outcome. It changes social and economic situations for good and creates situations from which there is no bridge to those situations that might have emerged in its absence. Thirdly, the frequency of its occurrence has something to do with the quality of the personnel available in the society, with relative quality of personnel and with individual decisions, actions and patterns of behaviors (Schumpeter, 1947: 150).

Schumpeter's mode of entrepreneurs is very rare in economic history. Most entrepreneurs are adaptive or imitative but their contributions in economic development should not be ignored. Baumol (1968: 85) argues that imitative entrepreneurship deserves a place alongside innovative entrepreneurship in the front rank of contributors to an economy's prosperity. Imitation is a clever competitive strategy involving investment, creativity and insight (Bolton, 1993). Imitative entrepreneurs exploit the success of others. They invent neither products nor services, but rather perfect and position them. Imitation adds some product attributes so that the product differs slightly from the original and fits in a slightly different market. That is, imitators supplement on what is still lacking in the markets. Drucker (1985: 203-207) correctly points out that imitators do not proceed by taking away customers from

the pioneers who have first introduced a new product. Instead, they serve the markets which the pioneers have created but have not yet adequately serviced.

The two modes of entrepreneurship, namely Schumpeterian and adaptive, exert different impacts on international development. They are associated with what Schumpeter (1947) referred to as creative and adaptive responses in economic history.

2.2. Entrepreneurial Innovation and Two Types of Economic Responses

A central aspect of dynamic competition process in international development is that some firms in advanced nations deliberately strive to be pioneers in technological innovations, while others attempt to catch up by imitating the success of the leaders. In other words, adaptive response follows creative response. Once a new possibility is tried, imitators will arise. They perceive the advantages of new combination and are eager to share in those advantages. These imitators do not have the will or drive to overcome the social resistance to innovation themselves but are ready to adopt new methods promptly as soon as the initial resistance has been overcome by the genuine innovator. It is in this way that an innovation achieves widespread adoption in the system. Some kinds of subsidiary innovations may be derived from the initial breakthrough (Cauthorn, 1989: 14). Schumpeter (1934/1961: 228) summarized the relationship between the two responses as follows:

If one or a few have advanced with success many of the difficulties disappear. Others can then follow these pioneers, as they will clearly do under the stimulus of the success now attainable. Their success again makes it easier, through the increasingly complete removal of the obstacles ... for more people to follow suit, until finally the

innovation becomes familiar and the acceptance of it a matter of free choice.

Schumpeter's two types of response can be modified to explain the dynamic global development process. This paper argues that during the international development process, creative response in the Western society is brought about by Schumpeterian entrepreneurship, while adaptive response is associated with adaptive or imitative entrepreneurship in latecomer economies. The dynamic development model is explained below.

2.3. The Dynamic International Development Process

Our paper confines to the international relationship between a first mover in the West and a follower in the East. Assume that initially extraordinary discovery or Schumpeterian innovation (creative response) occurs in a Western society such as the U.S. and hence makes this nation economically and technologically more advanced than other economies. We would like to examine the development path of a latecomer economy and the resulting pattern of international relationship.

2.3.1. Technological breakthrough in a Western society

Schumpeterian entrepreneurship initiates a creative response in an economy and widens the income and productivity gaps between this economy and other developing economies. In other words, developing economies are made to lag behind the advanced nation due to Schumpeterian innovation and become a latecomer. The advanced nation, as a first mover, with its advanced technology and high production productivity will explore and penetrate foreign markets. At the initial stage of international trade, only final goods are exported to developing economies. To ensure a smooth international investment,

business people from the advanced economy call for free trade and government assistance during their exploration of overseas markets. Advanced technological skills and superior products of the advanced nation soon penetrate and destroy traditional industries of developing economies. Preventing the collapse of their economies, the government of latecomer economies introduce tariff and other means to limit the import of foreign goods. This is the beginning of international conflict. Being weak in both military powers and technological capabilities, developing economies cannot prevent the inflows of cheap and superior foreign goods. They lose their bargaining power and even their taxation sovereignties³. Furthermore, taking the advantages of cheap labor in latecomer economies, multinational corporations from the advanced economy enter latecomer economies in the form of foreign direct investment. Though political conflict occurs at this stage of development, international relationship is still harmonious in economic sense because each nation fits well in the international division of labor. During that stage, the world economy enters a state of cooperation and harmony which is initiated by Schumpeterian innovation in the Western society, and prolonged by the imitative follower in latecomer economies. Carlos Escudé's Peripheral Realism thesis on foreign policy further illuminates our argument.⁴ Escudé (2015: 26-27) stresses "the differences in functions engendered by power differentials between nations". He argues that the world order as a whole is hierarchical. Superpowers are rule-makers who set the rules of world order. The United States is an example. On the other hand, the peripheral states such as Asian developing nations or Latin American nations are rule-takers. Developing economies accept the rules as long as the rules do not damage their economic interests (Escudé, 2015: 27). It is crucial to know that rule-takers can emerge as rule-makers as their economic and

political powers grow. In development economics, this is referred to as catching-up.

2.3.2. *Catching up in latecomer economies*

Under the impact of foreign goods and technologies, traditional handicraft activities of the latecomer economies go through drastic transformations. Interestingly, transnational enterprises from the advanced nation make huge profit from foreign direct investments; at the same time, they also provide huge profit opportunities for latecomer firms. It is often possible that, through learning, imitation and subsidies from their governments, latecomer firms can catch up with the Western developed countries (Yu, 1997). Catching up is possible because: (a) The productivity of developed countries diminishes. In other words, productivity cannot be increased dramatically beyond the threshold unless there is technological breakthrough. (b) As the developed countries put huge investment on specific production plants and technologies, it is economically impractical to switch to a new, though efficient, production method. That is because production and development is path dependent. (c) As a follower, it is easier for latecomer firms or countries to adjust certain advanced production technology. Also, they can avoid making the same mistakes by the developed countries (Dore, 1973: 68; Abramovitz 1988: 337; Ames and Rosenberg 1963: 18).

Learning from the first mover, latecomer firms are able to produce and sell imitative and inferior products at lower prices initially and then improved products later. As international markets are flooded with cheap and improved goods, profit margins decline. The world economy will subsequently adjust downward. The latecomer economies, now with new production capacity, gains more political bargaining power.⁵ The tension between two economic camps (leaders and followers) increases.

Previous harmonious economic relationship vanishes. Encountering economic threats from the followers, the advanced economy undertakes protection policies. In the global scene, free trade view gives way to new protectionism. This dilemma will not be resolved until a new wave of creative response emerges. In the next section, we shall adopt our model to explain the US-China trade conflict.

3. The US-China Trade Conflict

This paper uses the U.S. as an illustration of the first mover and China as an Asian latecomer economy. Our story starts at the time when China is one of the poorest nations in the world after the Cultural Revolution while the U.S. has been a dominant player in world's affairs. Moreover, after the fall of the Soviet Union in 1991, the U.S. became the world's only superpower (Escudé, 2015: 24). It goes no further to say that economic power between the U.S. and China contrasts sharply at the beginning.

3.1. China in the Early 1980s

China under Mao Zedong's leadership still remained, both economically and intellectually, in extremely backward conditions. At the end of the Cultural Revolution, China was one of the poorest nations in the world. Learning from mistakes, Deng Xiaoping embarked on a Four Modernizations Program in order to revive the economy. Among others, the program attempts to adopt foreign technologies to boost China's productivity, and the use of joint ventures with foreign firms (e.g. the U.S. and Japan) to bring funds and investment to China (Yu, 2014: 613). Foreign direct investment in backward economies is regarded by Marxists as exploitation. However, the Deng's government envisaged that the strategic use of foreign direct investment could help China

modernize by gaining access to foreign technology and capital. Since China “opened” her door in 1979, as a result of some preferential measures, foreign direct investments poured into China to take advantage of cheap labor and rentals.

3.2. The United States as a Superpower in the Global Economy

The U.S. has been the world’s economic and technology powerhouse after Second World War. Since 1984, the U.S. economy entered into one of the longest periods of sustained economic growth (U.S. Department of State, 2019). Specifically, in the 1980s, the U.S. industry has performed well in information and communication technologies. Continuing leadership in the new industries provides U.S. productivity growth and competitiveness in the world market (Committee on Japan, 1997: 50). In particular, Steve Jobs and Bill Gates, two of America’s most brilliant minds, can be regarded as Schumpeterian innovators. The two pioneers in the computer world, together with other techno-entrepreneurs, not only created new industries⁶, but also revolutionized the lifestyle of mankind (*Aljazeera News*, 31 July 2017). As a global leader in the information-related technologies, American firms were eager to export their products for profits. They lobbied their government to open trades with other developing economies, and in particular with China. Some of the U.S. government’s trade strategies included helping China enter WTO so that China would comply with international rules of game and liberalize control over American exports of advanced technologies.

3.2.1. Inducing China to play the international rule of game by helping China enter WTO

When American firms enjoy a clear competitive edge in world markets, they lobby their government to push for free trade (*Financial Times*, 24

June 2019: 17). In order to induce China to open its markets and conduct a freer trade, the U.S. tried to help China enter the WTO so that China would comply the international rule of game. The Clinton administration at the time identified WTO accession as one of the measures available to the U.S. for influencing China's trade and development (Brainard, 2001). The U.S. government finally won legislative approval for China's entry into the WTO in the Congress. China's entry into the WTO had a profound impact on US-China relations for years to come. Specifically, American exports to China increased by 81 percent in the three years after China joined the WTO, compared with 34 percent in the three previous years. As the business environment in China improved, American entrepreneurs explored new opportunities in China. In 2004, Wal-Mart, one of the America's largest corporations, had 6,000 suppliers over the world. Of these, 80 percent came from China. As a result, China emerged from relative economic insignificance nation to become the world's third largest trading nation after the U.S. and Germany in 2005. In 1978, the total value of China's trade was only US\$20 billion, ranking 30th in the world. However, China's trade rose to US\$3.87 trillion in 2005 (Wang, 2013).

3.2.2. Liberalizing control over American exports of advanced technology

The US-China economic relations at the time were also facilitated by the steady liberalizing of U.S. controls over American exports of advanced technology. In 1980, American products exported to China were re-grouped from Category Y (the Warsaw Treaty countries) to Category P (new trading partners with the U.S.), then to Category V (American allies). The change allowed additional exports to China. A three-tiered system of export licenses further streamlined the licensing process, placing 75 percent of export license applications in a "green zone" under

the authority of the U.S. Department of Commerce (Wang, 2013). In the second half of the decade, finished manufactures and technologically advanced products began to enter the China market. The U.S. was one of the largest investors in China, with about \$3 billion in assets by 1985. American firms entered China by forming joint ventures with Chinese firms or government agencies. Early entrants into China included giants such as AT&T, American Motors, American Express, Gillette, Kodak, to name a few. Trades in the 1980s were enthusiastic on both sides. Their commercial relationship grew 44 percent per year (*ibid.*). In the 1990s, trade developments were heavily influenced by the stunning performance of the information technology sector in the U.S. According to Information Technology Association of America (1996), information technology became America's number one export. It was obvious that US's IT industries increasingly dominated economic performance all over the globe (Brainard, 2001).

3.3. China's Adaptive Response: Learning from and Imitating Foreign Multinational Firms

Foreign direct investment is useful for latecomer economies to catch up with first mover economies. As multinational firms from advanced economies take the advantage of cheaper resources in the developing economies and invest there, local firms in latecomer economies learn their skills and imitate their products. According to their abilities to absorb foreign technologies, latecomer firms modify and gradually create some new designs. From a large pool of knowledge, they adopt foreign technology and improve on it. Later, some latecomer firms may spend money on R&D and move away from pure copying. By trial and error, eventually some firms establish their own brands. More importantly, by selling improved designs at lower prices, local producers can even threaten the original suppliers from advanced countries. They

can compete in world markets. Of course, the success depends on the absorptive capacity of the nation.⁷ This argument correctly explains China's development.⁸ According to a report in London (Economist Intelligence Unit, 1 August 2002), China was once seen as little more than a vast sweatshop, cheap low-tech production center. However, that perception is changing. As multinationals relocated both factories and research and development (R&D) to China, Chinese firms strove to develop home-grown products. Gradually, China has become a world center for high-tech manufacturing. Chinese firms have been associated with industrial value chain by the most well-known foreign technology brands, including Microsoft, Intel and Lucent of the US (*Financial Times*, 19 April 2002). The rapid shift of global manufacturing capacity to China has prompted commentators to predict the emergence of a new workshop for the world. However, few have noticed a newer but equally pronounced migration of foreign research and development operations to the world's most populous nation.⁹ As *Financial Times* (19 April 2002) reports:

The importance of this trend, evident not only in information technology but in automation, supplies a potent riposte to sceptics who have argued that China was destined to become a giant sweatshop, productive but low tech. And although much of the cutting-edge work is confined to the labs of multinational firms, the people executing it are almost exclusively Chinese. Over time, ideas and skills would be expected to flow to local companies.

In summary, in the early days, products from China are regarded as cheap, low-quality, imitative versions of original branded products. China strove to catch up with the U.S. economy. After learning and innovation, latecomer firms in China modify, improve and design new

products for exports. Meanwhile, China's relationship with U.S. at that time can be said to be harmonious. During the first decade of the 21st century, the bilateral relationship between China and the U.S. expanded at all levels, notably in communications and crisis management. Both countries have attached great political importance to their economic relations. From the Chinese government's standpoint, bilateral trade and foreign investment were crucial for China's modernization. For the U.S., while strengthening its trade with China, its strategies were also subjected to national security and moral constraints. Despite some frictions, the two governments have emphasized their economic collaboration and mutual benefits, and trade relations expanded rapidly, producing the world's most robust trade relationship (Wang, 2013).

3.4. China's Rise as a Global Superpower

As a capable learner, after pursuing a series of trade, technology and development policies, China has become a world's workshop, first in labor-intensive goods, and then high value added and technology-intensive products. China has transformed itself from being seen as "the world's factory" to a home of technology innovation, with some industries having leapfrogged the West.

In terms of industrial technologies, Americans cannot ignore China anymore. In certain high-tech industries such as nuclear reactors and high-speed rail, China is moving aggressively ahead. In some areas such as advanced coal technologies, alternative energy vehicles, renewable energy, supercomputing, China is already outpacing U.S. efforts. In IT sectors, China is surging ahead in e-commerce and Fintech. Specifically, China is a leader in mobile payment. Chinese consumers go beyond debit cards to new, cashless ways to buy. They are adopting mobile payment (via QR code and phones) at a rapid pace, going from £24 million of transactions per year in 2012 to £9.8 trillion in 2016. The

cashless payment system also means that Chinese consumers now sell their own products online. Furthermore, China is currently the second largest investor in artificial intelligence enterprises after the U.S. (*The Telegraph*, 16 November 2018). Obviously, the U.S. must innovate or put itself at risk of falling behind (Aston, 2010).

With technological capabilities, China attempts to expand its influence in global affairs. In particular, China helps developing nations build infrastructure in order to extend China's influences in these regions. In 2013, the Chinese government initiated "One Belt One Road" project and the Asian Infrastructure Investment Bank for strategic global expansion. The two projects serve as a vehicle for creating a new global economic and political order.

3.5. The Struggle for Hegemony: Competition between the United States and China

After the Cold War ended, the US became the sole superpower. However, China emerges as one of the global superpowers too after 40 years of economic reform. The two giants are struggling for world dominance. The U.S.-China relationship has entered a new era that is marked by intense confrontation and competition rather than by coordination and cooperation.

3.5.1. The U.S.'s view

There is a growing consensus in the U.S. that Americans have facilitated China's growth by allowing their manufacturers to invest in China, and it is time for America to wake up. They cannot afford to remain defensive when competing with China. Moreover, they believe that China has taken advantage of the U.S. for too long and that China has overtaken the U.S. in areas of advanced technology, such as artificial

intelligence and some military technologies, through secret means. To many Americans, Chinese firms “steal intellectual property, from corn seeds to computer technology” (Council on Foreign Affairs, 14 May 2019). Some politicians in the U.S. call for efforts to hold the Chinese Government accountable for intellectual property theft, counterfeit goods and acts of economic sabotage. Such views were seen in Trump’s foreign policies on China. In particular, Trump administration’s National Security Strategy now identified China as a competitor, and Chinese global influence as a challenge that must be prioritized (*ibid.*). On 4 April 2018, Trump announced that “war was lost many years ago by the foolish, or incompetent, people who represented the U.S.... Now we have a trade deficit of \$500 billion a year, with intellectual property theft of another \$300 billion. We cannot let this continue” (*ibid.*). Americans and the Trump government claim that China, instead of opening up and becoming more like the U.S., has held back in terms of political openness, and hence represents a challenge to American values and leadership (*Channel News Asia*, 31 May 2019).

3.5.2. *China’s view*

China believes that the U.S. government is trying to “thwart China’s legitimate ambitions” and “no matter what they (Chinese) do or concede on individual issues, the U.S. will never be satisfied” (*Channel News Asia*, 31 May 2019). In China’s view, when American firms enjoy a clear competitive edge in the world markets, they will lobby their government to push for free trade. When the U.S. loses its competitive advantage, it returns to tariffs and protectionism in the name of “fair trade” (*Financial Times*, 24 June 2019: 17).

In response to Trump administration’s initiation of a tariff war, Zhang Qingli, Vice Chairman of the Committee of the Chinese People’s Political Consultative Conference said that “China never wants a trade

war with anybody, not to mention the U.S., who has been a long term strategic partner, but we also do not fear such a war.... The U.S. side has disregarded a consensus with China after multiple rounds of consultations, insisting on waging a trade war against China and continuing to escalate it” (*Express News*, 23 October 2018).

4. The Showdown: Trump’s Offensive Strategies and China’s Retaliation

As a result, tariff and trade wars between the world’s two superpowers formally started on March 22, 2018, with the Trump administration investigated the possibility to apply tariffs on US\$50–60 billion worth of Chinese goods including aircraft parts, batteries, flat-panel televisions, medical devices, satellites and weapons. On 2 April 2018, China responded by imposing tariffs on 128 products imported from the U.S., including aluminum, airplanes, cars, pork, soybeans, fruits, nuts and steel pipes. (For a chronology of the US-China Trade War, 2018-2019, please refer to Appendix 1).

Apart from trade, conflicts “have built up between the two nations over issues including cyber-espionage, 5G technology, freedom of navigation, human rights” (*Channel News Asia*, 31 May 2019). On 15 May 2019, Trump signed an executive order, which sought to restrict the export of U.S. information and communications technology to “foreign adversaries” on national security grounds. The order was meant to support the U.S. allegations of espionage via Chinese telecommunications firms. Specifically, on mobile phone industry, on 15 May 2019, Trump issued the Executive Order on Securing the Information and Communications Technology and Services Supply Chain, which gives the government power to restrict any transactions with “foreign adversaries” that involve information and communications

technology. Trump made no specific reference to China, Huawei, or any other party, but emphasized that these adversaries posed “unacceptable risks” to national security. On the same day, the U.S. Department of Commerce added Huawei and 70 “affiliates” to its list under the Export Administration Regulations. This restricts U.S. firms from doing business with Huawei without a government license. Some U.S.-based companies immediately stopped their supplies to Huawei in order to comply with the regulation. For example, Google removed its ability to certify future devices and updates for its Android operating systems from Huawei (*South China Morning Post*, 21 May 2019).

Responding to the U.S. moves, Chinese envoy to the European Union (EU) stated that Beijing will not “sit idly by” as U.S. undermines “Chinese companies’ legitimate rights and interests”. China warns the U.S. “not to go further down the wrong path, to avoid further disturbances to China-US relations” (*ibid.*).

It remains to speculate what will happen to the trade war in the future. Our model suggests that the U.S.-China conflict and trade disputes will proceed until another wave of Schumpeterian innovation emerges to make many trade protection policies ineffective. New technologies will once again widen economic and productivity gaps between first mover and follower economies. It will also redefine international division of labor. As it happens, the world economy re-enters into a state of cooperation and harmony.

5. Concluding Remark: Innovation as the Determinant of Future World Economic Leader

The paper suggests an international development model which incorporates entrepreneurial innovation, protectionism and world politics. The model is used to explain the U.S.-China competition in last

decades and recent trade disputes in particular. This paper begins by pointing out that after the Cultural Revolution, China was one of the poorest nations in the world. On the other hand, Schumpeterian entrepreneurs in IT industry created a creative response in the U.S. and make the U.S. an economic and technology leader in the world. Equipped with excellent technological capabilities, American entrepreneurs explored profit opportunities in China and entered China in the form of exports and foreign direct investment. Given poor resources and technology capabilities, China accepted the U.S.'s rule of game and opened its markets to Americans. As a result, both nations gain in trade. The U.S.-China relationship at the time was in harmony. As multinational firms from the U.S. invested in China in the form of foreign direct investment, China's latecomer firms were able to learn from them. Chinese manufacturers went on to master high-tech industries from the West. In other words, China embarked on a phase of adaptive response, encompassing imitation, product improvement and mass production. After more than 40 years of economic reforms and learning, China eventually emerged as a global superpower. It begins to pose a challenge to the U.S.'s dominance. In order to curb China's rise, the U.S. government exercises a series of trade protection policies on China. Hence, final showdown between the two superpowers occurs. Our model suggests that the U.S.-China conflict and trade disputes will continue until another wave of Schumpeterian innovation emerges to make trade protection policies ineffective. Technological breakthrough will once again widen income and productivity gaps between first mover and latecomer economies. New technologies will also redefine international division of labor. As it happens, the global economy re-enters into a state of cooperation and harmony. Our theory concludes that innovation is the determinant of future leader in the world.

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Appendix 1 Chronology of the US-China Trade War, 2018-19

- On March 22, 2018, the Trump administration investigated the possibility to apply tariffs on US\$50–60 billion worth of Chinese goods including aircraft parts, batteries, flat-panel televisions, medical devices, satellites and weapons. Trump stated that the proposed tariffs were a response to the unfair trade practices of China over the years, including theft of U.S. intellectual property.
- On April 2, 2018, China responded by imposing tariffs on 128 products imported from the U.S., including aluminum, airplanes, cars, pork, soybeans, fruits, nuts and steel pipes.
- On May 29, 2018, the U.S. announced that it would impose a 25% tariff on \$50 billion of Chinese goods with “industrially significant technology”. It also planned to impose investment restrictions and enhanced export controls on certain Chinese individuals and organizations to prevent them from acquiring U.S. technology.
- On June 15, 2018, Trump declared that the US would impose a 25% tariff on \$50 billion of Chinese exports, of which \$34 billion would start July 6, 2018. China imposed retaliatory tariffs on U.S. goods of a similar value. On June 19, 2018, China retaliated and stated that the United States had launched a trade war. China vowed to retaliate with additional tariffs on American goods worth \$60 billion annually.
- On August 8, 2018, the U.S. finalized a list of 279 Chinese goods, worth \$16 billion, to be subject to a 25% tariff from August 23, 2018. In response, China imposed 25% tariffs on \$16 billion of imports

from the U.S., which was implemented in parallel with the U.S. tariffs on August 23, 2018.

- On September 17, 2018, the U.S. announced that its 10% tariff on \$200 billion worth of Chinese goods would begin on September 24, 2018, and will increase to 25% by the end of the year. They also threatened tariffs on an additional \$267 billion worth of imports if China retaliated, which China promptly did on September 18, 2018, with 10% tariffs on \$60 billion of U.S. imports.
- On May 5, 2019, Trump stated that the previous tariffs of 10% levied in \$200 billion worth of Chinese goods would be raised to 25% on May 10, 2019.
- On May 15, 2019, Trump signed an executive order, which sought to restrict the export of U.S. information and communications technology to “foreign adversaries” under national security grounds. The order did not make any references to specific companies or nations, but it was heavily implied that the order was meant to support United States allegations of espionage via Chinese telecommunications firms.
- On June 1, 2019. China will raise tariffs on \$60 billion worth of U.S. goods.

Sources: *The New York Times* (5 July 2018); *CNBC* (12 December 2018); *CNBC* (5 May 2019) and Crowley (2019).

Notes

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1. Trump's press conference at the White House on 7 November 2018. See *Economic Times* (8 November 2018), "Donald Trump says China no longer in race to supersede US as top economic power", <https://economictimes.indiatimes.com/news/international/world-news/donald-trump-says-china-no-longer-in-race-to-supersede-us-as-top-economic-power/articleshow/66545223.cms>, accessed on 26 June 2019.
2. Instead of "adaptive entrepreneur", Cheah and Yu (1996) uses the term "Austrian entrepreneur".
3. This is the case in the late Ch'ing Dynasty in imperial China.
4. Mainstream scholars in international relations look at the world order from the superpower's perspective. In other words, the superpower is the center of the world order and all other nations are peripheries. However, Escudé (2015) looks at the world order from the periphery perspective.
5. For instance, today, Malaysia would confront face-to-face with Britain or USA in many international affairs.

6. Personal computers can be said to appear in the 1970s, shortly after the development of the microprocessor chip. The Apple I came out in 1976, and the Apple II in 1977. Then in 1982 came the IBM PC. By introducing a powerful PC, IBM gave personal computers real credibility. During the 1980s, Intel released a 32-bit processor which had more than a million transistors on a single chip, a clock speed of 25 MHz and a 4-gigabyte memory space. Hard disks, which really did not exist in the personal computer marketplace in 1980, became inexpensive and ubiquitous. By the end of the 1980s, PCs were widely adopted (Brain, 2006).
7. See Cohen and Levinthal (1990) for the concept of absorptive capacity.
8. Admittedly, at the beginning, most joint ventures were rent-seeking activities pursued by the government officials either at the township or provincial level. However, the most important fact is that Chinese people have had the opportunities to learn from overseas companies.
9. For example, Alcatel, the telecommunications company, joined forces in 2003 with a Chinese venture capital fund, New Margin ventures, to invest US\$18 million to support innovation in telecom engineering. Alcatel expects to spend around 15 per cent of its worldwide R&D budget in Shanghai. On this investment, Ron Spithill, the executive vice-president of Alcatel remarks that “China has long been a recipient of telecom technology, very soon it will be a source of innovative technology.” (*Financial Times*, 19 April 2002).

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