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**"TRADE DISPUTES INVOLVING CHINA AND THE WTO: AN
INSTITUTION-BASED ANALYSIS AND FUTURE TRENDS"**

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Abstract (in Italian)

Lo sviluppo economico della Cina è stato guidato da un assetto istituzionale con alla base una scarsa protezione di diritti di proprietà intellettuali (DPIs) e la convinzione che la proprietà sia un bene pubblico. Questa prova finale si concentra su uno dei temi più discussi dell'economia mondiale: la violazione dei DPIs in Cina dopo aver aderito all'Organizzazione del Commercio Mondiale (WTO) nel 2001. L'accesso al WTO è stato considerato una scelta strategica per sviluppare un sistema legale di protezione dei DPIs e sostenere gli elevati tassi di crescita passati. Nonostante ciò, dal punto di vista esecutivo (Enforcement), sono presenti lacune notevoli. Tale questione è culminata con l'avvio, da parte degli USA, di una disputa tramite il WTO, prima nel 2007 e recentemente nel 2018, ed all'inizio di una delle guerre commerciali più rilevanti in termini di potenziali conseguenze sull'economia mondiale. L'elaborato in questione, tramite una analisi istituzionale, mostra che il problema alla base non sia strettamente legale, come è erroneamente ritenuto, ma deriva dalle interrelazioni tra il più ampio assetto istituzionale dal punto di vista formale (politiche ed economiche) ed informale (convenzioni). Guanxi, uno dei pilastri delle istituzioni informali definito come 'rete di scambio di favori', influenza notevolmente i governi locali che traggono benefici dalle attività di violazione dei DPIs. Inoltre, il concetto di DPI è stato recentemente introdotto in Cina, che, citando Hofstede (1990), si caratterizza per essere culturalmente 'collettivista'. Nonostante le istituzioni informali siano difficilmente modificabili, implicazioni fondamentali evidenziano che intervenendo sulle istituzioni economiche, promuovendo l'innovazione alla base del vantaggio competitivo, si generi un sistema esecutivo in tema di DPIs pienamente efficiente.

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Introduction

China has witnessed a remarkable economic growth, starting from being a rural and poor country in the 1980s to become the second largest economy in the 21st century. The economic development has been fostered by an institutional shift that, however, significantly differ from what advanced countries have experienced. The divergence regards the lack of intellectual property rights (IPRs) which, being a fundamental component of economic institutions, are counterbalanced by strong social (or informal) institutions, namely code of conducts. The gap in the institutional setting undermines not only the relationships with foreign countries, but also the domestic economy that might not sustain the impressive economic growth in an era increasingly based on innovation as the source of competitive advantage. Pressured by foreign economies, especially USA, China is now aware of the importance to internalise IPRs, leading to the introduction of the concept in the legal environment. In this respect, the accession to the World Trade Organization (WTO) has been widely and wisely considered a strategic and pivotal choice. Indeed, one of the core Agreements underpinning the WTO, namely the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), provides members with common regulations in terms of IPRs.

Nevertheless, despite the admirable progresses, the issue of counterfeiting activities is still widespread in the Chinese business environment. There seems to be, indeed, a paradox. China is increasingly known as having a strong IP legal regime after joining the WTO; however, it is still considered as a high-risk environment for IPRs infringements (Prud'Homme and Taolue 2017). A report by the European Commission (2018) states that China continues to be 'Priority 1' since longstanding issues in the field of IPRs are persistent. According to the Global Intellectual Property Centre, 86% of all physical counterfeiting activities come from China and Hong Kong (New 2016). Moreover, if just the USA are taken into consideration, the percentage increases to 90% (by value) (Plane and Livingston 2017). These alarming statistics led the USA to take initiatives against China through the WTO Dispute Settlement in 2007, citing inconsistencies with some articles of the Agreement. The same situation resurfaced some years later, in 2018, under the Trump administration. The President directed the United States Trade Representative (USTP) to investigate Chinese practices and laws, concluding that China has always taken advantages of the USA (Withers 2018). This led to the initiation of another dispute through the WTO, arguing that the Chinese institutional framework was not consistent with Articles 3 and 28 of the TRIPS Agreement.

Addressing the issue from the mere legal point of view, however, might not lead to a sustainable solution. The recent dispute initiated by USA will probably have a similar result of the previous one, leading to short-term benefits that give way to the usual enforcement issues in the medium and long run. An analysis of the broader institutional setting will be instrumental in getting an insight into the deeper source of the problem and potential solutions and policies to mitigate the counterfeiting activities, promoting a further institutional shift in consistency with international standards. By broader institutional setting, the paper draws upon the classification adopted by Douglass North (2000), who split institutions into 2 macro-areas: formal and informal. Furthermore, formal and informal institutions, which are highly context-specific, are interrelated, suggesting that the deeper source of the problem and the consequent potential resolving policies might not be clearly identifiable.

The paper is structured as follows. The first chapter, after providing an introductory and theoretical overview of institutions, will drive the reader into the economic development undertaken by China. A separate section will be dedicated to the structure of the WTO, underlying the further institutional improvement that China might foster upon accession to the WTO. The second chapter will provide a more detailed and close insight into the relationship between the WTO and China, showing legal improvements but also flaws in IPRs enforcement. The last chapter, finally, undertakes a broader institutional analysis to identify the way China might improve deficiencies in IPRs.

Chapter 1

Institutions and economic development

The neo-classical economic theory assumes that human beings are rational, able to make decisions that maximize their utility function. Actors face transaction costs (Williamson and Masten 1999) due to bounded rationality: the impossibility to gather and process the information available in the external environment (Simon 1972). Even though individuals could sometimes show rationality, ‘This individual achievement does not generate...a socially efficient outcome’ (Olson 1996, p.6). This explains the existence of institutions, which are crucial to characterise the complexity of a country in economic terms.

As stated by North (1994), institutions are made up of formal rules and informal constraints. The former are simply rules put in place, such as laws and regulations, that are clearly defined; the latter, in contrast, do not show up in formal terms, but are ways of doing things embedded within a specific country and draw upon the differences on the cultural dimensions identified by Hofstede (1990). As argued by North (2003), the market-supporting institutions are highly dependent on the political ones. The polity makes and puts in place the economic rules of the game. These essentially concern property rights: not only property rights in terms of rules about how property is used, alienated and owned, but also property rights in terms of the effectiveness of enforcing contracts and agreements in laws.

It is clear that institutions are the underlying fundamentals of a country and its economic performance (Rodrik and Subramanian 2003); an incentive structure that drives the individual economic decisions and the long-term effects on the overall country. Consequently, economic development might be fostered by interventions in the deeper institutional context, rather than mere economic interventions that involve accumulation of inputs, promoting scarce short-term benefits as a result of the law of diminishing returns. Indeed, the relationship between institutions and sustainable economic development has been tested, and positively confirmed, econometrically through regressing current performance on current institutions, using ‘settler mortality rates’ as an instrumental variable (Acemoglu et al. 2001). The use of the latter is motivated by the endogeneity of the independent variable: high-performant economies, indeed, might afford better institutions (Acemoglu and Robinson 2010) and so development clearly influences the quality of institutions in a circular process. The result of the regression has a more important implication behind the mere fundamental relationship between

institutions and economic performance: the former is path-dependent and highly influenced by country-specific features; not easily modifiable due to existence of informal institutions, namely culture and code of conducts, along with formal ones, like laws and regulations (North 2003).

This explains why, given the acknowledged importance of institutions to promote growth, countries show different institutional frameworks and evidence towards an institutional convergence is scarce. Indeed, informal institutions are highly embedded within a specific regional/national context and not easy to change. Additionally, despite specific formal institutions might be built through a process of imitation of advanced countries, it is believed that the process might not be immediate since informal institutions still shape and influence the formal ones and are dependent upon contextual events.

In agreement with the above analysis, Rodrik (2000) underlines, on the one hand, the existence of specific market-supporting formal institutions while, on the other hand, the impossibility of mapping unique formal and informal constraints. About the former, he identifies as fundamental: property rights, regulatory institutions, institutions for macroeconomic stabilization and social insurance and institutions of conflict management. Regarding the latter, he emphasizes the importance of overcoming Westernised best practices and drawing upon 'local knowledge' to experiment something unique to the specific context. This outlines again that building good institutions do not mean following standardized formal rules but refers to the interplay of the latter with informal and unique constraints (Rodrik 2001).

Given the interdependence between political and economic institutions, a wide range of research focuses on the importance to develop the former to sustain the latter. In this regard, Birdsall (2007) argues that the political party needs to mirror the 'Developmental State' (DS): autonomy from interest groups and accountability. Most advanced countries meet these requirements, which might highlight the reliability of this model to analyse the strength of the institutional setting of a country.

The institutional shift towards a more market-based approach in China

Applying this model to China, however, the requirements of DS by Birdsall (2007) are not met. About the former, China is a high-corrupted country ranking 79/176 relatively to other

countries (Transparency International 2018) and one of the most unequal: Gini coefficient had risen from 0.2 to 0.5 since the reforms took place (Chan and Gao 2015). Regarding the latter, China keeps a centralized political structure which, according to institutional theory, might prevent economic development (Tasneem 2015). Consequently, if economic institutions depend upon the political ones, the former should not be well-developed to sustain economic growth. Nevertheless, this is in contrast with the recent outstanding economic development. Indeed, Knight (2014) states that there are different DSs that share two common characteristics that coexist in China: promotion of economic growth and incentives to achieve it. Deng prioritized the stability of the Chinese Communist Party (CCP) and economic growth through an approach known as ‘Regionally Decentralised Authoritarianism’ (RDA): political centralization and decentralized economic management (Jin et al. 2005).

Improving the economic performance as a priority is the result of the necessity to get the support of the citizens after the terrible outcome of the Cultural Revolution, which underlines again the importance of contextual elements. Up until the 1978, China was a closed economy among the poorest in the world. 82% of the population lived in rural areas, but rural incomes had been stagnant for more than a decade. More than 60% of the population lived on less than one dollar a day and famine was an ever-present concern. Moreover, heedless industrialization had left China with even less arable land to feed its people and unemployment was an especially timely issue.

However, through the above-mentioned RDA approach, economic reforms were implemented gradually, inspired by the powerful market economies but with a strong focus on informal institutions.

The early agricultural reforms, with the introduction of the ‘House Responsibility System’ (HRS), are a clear example. Each family was given a piece of land to farm and operated under a dual-track system: production of a fixed quantity to sell to the government at fixed prices and opportunity to retain the surplus and sell it at market-based prices. This led to the creation of a set of incentives, increasing the output by over 61% from 1978 to 1984, during which participation reached 99% (Xu 2011).

The success of the reform provided savings that boosted the non-agricultural sector: China’s agricultural labor force declined from 70% in 1980 to 40% in around 2000 (Qian 2002). These increasing savings began to be directed to collectively-owned firms ruled by local government, named ‘Township and Village Enterprises’ (TVEs) which grew at 28.1% per

year between 1981 and 1990 (Xu 2011; Tasnem 2015). TVEs were successful thanks to the interplay among local management and informal constraints (Qian 2002; Högberg 2009). About the latter, it is believed that culture is a key component. Figure 1 shows the cultural analysis of China, drawing upon the cultural dimensions identified by Hofstede (1990). What strikes immediately the attention is the low score on the individualism dimension, suggesting that China is a highly collectivist society. This dimension explains the success of TVEs and the counterpart lack of IPRs, which is the key flaw of the institutional setting. In addition to this, Power Distance refers to the fact that inequalities amongst people are generally accepted, influencing the long-standing layered political outlook, which is further reinforced by a long-term oriented culture.

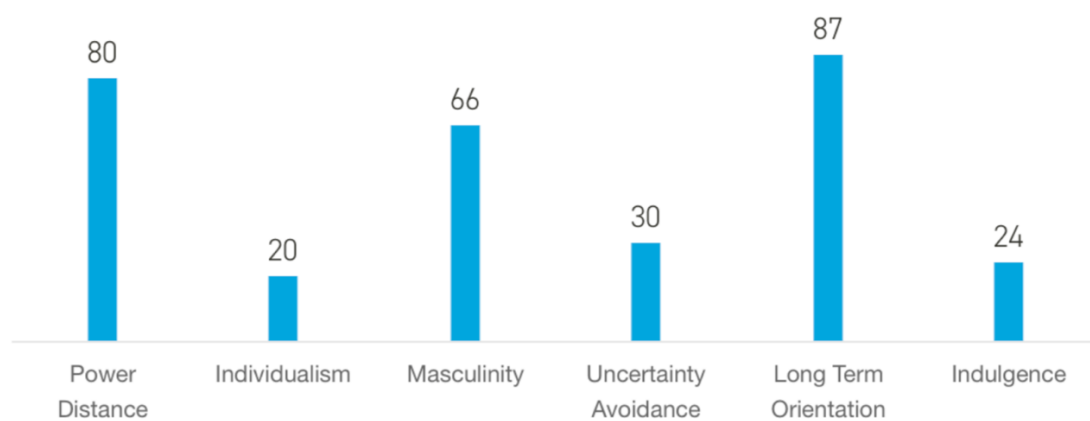


Figure 1: Analysis of the Chinese culture (Hofstede Insights, 2018).

The highly competitive context, that is the consequence of the decentralized approach, promoted efficiency (Xu 2011). This led to the counterpart decline of state-owned enterprises (SOEs), whose output decreased from 77.6% to 28.8% from 1978 to 1996 (Lin et al. 1998). Like HRS, the adoption of ‘Management Responsibility System’ (MRS) increased the productivity but caused high corruption and financial problems particularly between 1993 and 1998: this had repercussions on the financial sector leading to increasing non-performing loans and negative performances (Xu 2011). Consequently, the solution was to privatise the small SOEs and separate commercial and policy purposes, resulting in bad loans drop from 16.84% to 2.81% at the end of 2003 (Hou 2011): Perkins (1988), however, underlines that loans are still provided for political reasons and the financial sector is fragile. The success of TVEs over SOEs, and the consequent financial crisis, is again the confirmation that strong informal institutions outperform formal ones.

In line with the institutional theory, China adopted an export-led strategy: exports increased from 3.4% a year to 14.1% a year after the reforms and, in contrast to SSA, 70% were about manufactures (Perkins 1994). Moreover, the impact of foreign direct investments (FDI) was tested in specific zones: ‘Special Economic Zones’ (SEZs). The enormous success led to the expansion of the reform throughout the country, rising from 4 to 342 from 1980 to 2005 while SEZs share of FDI from 35.9% to 95.3% in the same years (Xu 2011).

China shows an institutional setting that can differ greatly from best practices institutions that are often the object of institutional reform in the developing world. This underlines the importance of contextual forces, both informal institutions and specific initial events, that might counterbalance ineffective formal ones, such as in terms of property rights, explaining the impressive recent growth rate in China.

China and the consequences of transitional institutions: WTO as a solution?

The above section proves that economic development, as an output, can be fostered through various specific institutional settings. The comparison of the recent Chinese economy and the period prior to the reforms clearly underlines the power of the institutional shift. Since reforms, GDP per capita constantly grew, starting from 156.4\$ in 1978 to 8,132.6\$ in 2016 (World Bank Data 2018). However, Tisdell (2009) underlines that the transitional institutions led to high economic growth at really high social costs, mainly environmental issues and distribution inequality. As regards the environment, China loses approximately 6.5% of GDP due to pollution and air pollution contributes to 1.6 million deaths per year (4,400 per day) (Rohde and Muller 2015). About social inequality, before the reforms took place, China’s distribution system was characterised by egalitarianism in all aspects, as the Gini coefficient of 0.16 at that time clearly shows. It is estimated that the coefficient progressively increased to 0.55 in 2002 (Yueh 2013). In this regard, a study by Chan et al. (2015) suggest that inequality has a positive impact on overall household consumption in mature economies with well-developed financial market (e.g., OECD countries) and negative impact in developing countries with less sophisticated capital markets. This is not, however, the case of China due to weak financial institutions as a result of a massive ‘Shadow Banking System’ (The Economist 2018).

This analysis underlines that, as stated by Knight (2014), different DSs are instrumental to foster economic development, regardless of meeting the conditions identified by Birdsall (2007): autonomy from interest groups and accountability. The latter, however, are fundamental to promote economic development minimising, at the same time, social costs. It is widely acknowledged, indeed, that China cannot sustain the impressive growth rates if improvements in the institutional setting, towards a more Westernised approach, are not implemented. The view is also shared by Minxin (2006) who highlights that democratic reforms, respectful of Birdsall's conditions, are required to sustain economic growth. Further, the authors outline a positive relationship between economic development and authoritarian liberalisation which, however, did not occur in China. According to the authors, the lack of development of the political institutions is the consequence of weak rule of law, which is the foundation for sustainable long-term growth.

The Chinese tradition is rich of codes and conducts (strong informal institutions) that counterbalance weak legal rules, which were almost absent before 1949. The importance of rule of law has been acknowledged in the second half of the 20th century by Mao and Deng who, however, subordinate legal reforms to the more important economic achievements to assure the political control. The legal reforms are associated with significant shortcomings and bottlenecks that require an immediate intervention to improve the institutional setting and sustain the impressive economic growth rates. The Chinese legal system lacks the independence from the single party to function as the guarantor of law, undermining the long-term development of the legal setting. Additionally, local governments have substantial influence upon courts since presidents and vice presidents are appointed by the local governments. Moreover, the scarce knowledge about laws, along with high corruption and weak enforcement, makes Chinese legal system unpredictable, discouraging the big opportunities to do business. These domestic institutional shortcomings needed an external push towards institutional improvements: the accession to the WTO in 2001, which was indeed considered as a 'National policy' by the Chinese government, contributed to a significant institutional upgrade.

WTO: functions, structure and principles

Trade has played a key role in supporting economic development, promoting a strong need to be worldwide integrated. Since 1947, the General Agreement on Tariffs and Trade (GATT) has been the focal point for trade regulation on an international scale, initially focused on

tariff agreements but, over time, extended to non-tariff policies (Jackson 1990). The GATT increasingly attracted many more countries but was a highly-flexible institution since negotiations usually occurred among a subset of countries and were not universally applicable (Jackson 2000). However, as a result of the Marrakesh Agreement in 1994, the WTO was officially established, based on the same principles as the GATT, but providing a common institutional framework applicable to all the members (Matsushita et al. 2006).

Additionally, whereas the GATT mainly dealt with trade in goods, the WTO and its agreements also cover trade in services and intellectual property rights (Hoekman and Kostecki 1995). Indeed, the WTO builds upon broad principles, which are the GATT, GATS and TRIPS. Unlike the latter, GATT and GATS comprise additional agreements and annexes coping with special requirements of specific sectors or issues. Finally, there are detailed lists of commitments made by individual members allowing specific products/services access to their market (Matsushita et al. 2006).

GATT, GATS and TRIPS are the Multilateral Agreements contained in the Annex 1, the first of 4 Annexes. Annex 2, instead, contains the WTO's common dispute settlement mechanism: Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU). Indeed, countries can bring disputes to the WTO if they believed that the agreements are being violated. This is fundamental for enforcing the rules and assuring that trade flows smoothly. Annex 3 contains an instrument for surveillance of members' trade policies, known as 'Trade Policy Review Mechanism' (TPRM). Finally, Annex 4 contains agreements that were not widely shared in the Uruguay Round and bind only a subset of countries (Matsushita et al. 2006).

Given the content-based and institutional differences between the GATT 1994 and the WTO, the structure of the latter is far more complicated (Matsushita et al. 2006). The structure is headed by the Ministerial Conference, composed of all members of the WTO, which has full power on the agreements and meet roughly once every 2 years. Between these sessions, the functions are exercised by the general Council, whose meetings are held about 12 times a year. The GC is in charge of the effective management of the organisation and handles urgent matters. Additionally, the structure of the WTO comprises 3 groups of subsidiaries that report constantly to the GC. The most important group consist of 3 Councils that supervise the obligations undertaken by the members under the GATT, GATS and TRIPS. A second set is in charge of broad responsibilities that cover sectoral responsibilities while a third group is responsible for the Plurilateral Agreements (Annex 4).

Despite the marked differences, significant similarities can be highlighted. The WTO continues to be member-driven and operate by consensus (Matsushita 2004). More importantly, the pre-1994 GATT and the WTO share the same principles that characterise the institutional framework of the organisation (Hoekman et al. 2002): non-discrimination, reciprocity, enforceable commitments, transparency, and safety valves.

Non-discrimination

This principle builds upon 2 components: the most-favoured-nation (MFN) rule and the national treatment principle. The former involves the necessity to treat a specific product no less favourably than a similar one that originates from another country (Suwanprasert, 2016). As an example, if a tariff of 4% is applied to a product, the same rate needs to be imposed to imports of the same product from all the WTO members, incentivising the selection of the lowest-cost foreign supplier and lowering negotiation costs. The National treatment requires to treat foreign goods, in terms of internal taxation, as the domestic goods, ensuring that the liberalisation efforts are not neutralised by domestic taxes (Matsushita et al. 2006).

Reciprocity

The non-discrimination pillar aims at preventing potential free-riding behaviours, which is avoided by the reciprocity principle: mutual advantages directed to substantial reduction of tariffs and barriers. Mattoo and Olarreaga (2004) underline that the achievement of a balanced concession of liberalisation is driven by political forces that leads to a more efficient outcome. In this respect, Bagwell and Staiger (1999) offer an economic interpretation: reciprocity neutralises the effects caused by unilateral attempt to reduce protectionism, promoting a greater degree of liberalisation.

Binding and Enforceable Commitments

The above 2 principles embody a strong liberalised orientation. However, once these measures have been adopted, it is important to verify that countries do not take nontariff actions that nullify the tariff concession. The existence of dispute settlement procedures allows to prevent any unilateral action that might harm the overall beneficial achievements (Matsushita et al. 2006).

Transparency

The enforcement of commitments requires the access of information on trade, placing 'transparency' as a crucial principle in the WTO. A large number of committees verify if the provisions are respected and exchange constantly information with members, who are required to publish their trade regulations compatible with the institutional setting provided by the WTO. This principle drastically reduces uncertainty and promotes an institutional convergence key for increasing trade and beneficial for all the members.

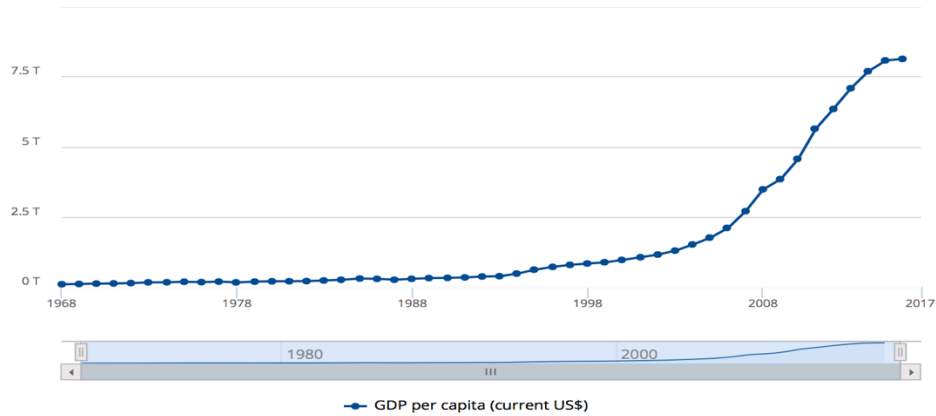
Safety values

An important principle embedded within the WTO grant members the possibility to restrict trade, which might be motivated by several circumstances. Government might need to protect public health and national security that are damaged by an aggressive international competition fostered by the WTO. Additionally, the organisation allows to impose countervailing duties on subsidised imports and antidumping duties on dumped imports. Finally, further provisions involve actions in case of serious balance of payments difficulties or driven by the necessity to support infant industries.

It is clear from the principles that the WTO provides an institutional setting closer to the most advanced countries, so requiring strong formal institutions. The institutional framework is characterised by open and fair trade, stability and predictability to encourage investments, job creation and competition. The positive impact on trade is widely acknowledged in the literature but is highly dependent on the acceptance of the strong requirements. Indeed, Subramanian and Wei (2006) underline that the WTO significantly contributes to improving, in terms of both quantity and quality, world trade, but the positive effects are uneven: benefits are highly correlated to the degree of liberalisation.

Given that the access to the WTO brings substantial benefits, China shows an institutional setting that, prior to 2001, is not fully compatible with the WTO. Thus, might promote pressure to converge towards a more western-style approach, resulting in improvements in the institutional framework and so sustain the impressive recent growth rates. With respect to IPRs, WTO might be seen as an inevitable push towards the development of strong institutions in a field in which China has always been inadequate due to cultural reasons. A report by Business Software Alliance (2010) showed that the rate of piracy hit 54% in 2001, reflecting a strong need to solve the issue through external forces. As figure 1 clearly shows, GDP per capita grew more rapidly after China accessed the WTO in 2001. However, it has

been also argued that the institutional context is highly country-specific, and any potential change might be challenging, particularly due to strong informal institutions.



Source: World Development Indicators

Figure 2: GDP per capita in China from 1968 to 2017 (World Bank Data, 2018).

Chapter 2

Effects of the WTO on the legal system in China

As shown in figure 2, the WTO has certainly had a positive impact on the Chinese institutional framework, leading to a greater convergence between WTO-based international standards and the institutions in China. The external push by the WTO, and the constant relationships between China and the WTO members, have been fundamental to improve the institutional setting from a legal point of view, which would have not been easily possible drawing just upon domestic forces.

This section will evaluate if China meets the WTO legal requirements, which are deeply related to the more general principles listed in the previous chapter: transparency; equality; and due process and justiciability of government action.

Transparency

After the accession to the WTO, the Chinese legal system has been characterised by an impressive progress in terms of transparency. In the past, many laws were unknown because the government was not incentivised to make them public; with the WTO requirements, however, transparency became part of the Chinese culture. According to its Protocol, China undertook that only those WTO-related laws, regulations, and other measures that are published and readily available to other WTO members, individuals and enterprises shall be enforced. Besides, "China shall make available to WTO Members, upon request, all laws, regulations and other measures pertaining to or affecting trade in goods, services, TRIPS or the control of foreign exchange before such measures are implemented or enforced. In emergency situations, laws, regulations and other measures shall be made available at the very latest when they are implemented or enforced" (WTO 2001, p.3). This led to legislative changes in the domestic setting. Indeed, Lam (2009) shows that the 'Regulations on Open Government Information' obliges government departments to publicise information about a wide range of matters. Additionally, individuals have the right to be informed through a written inquiry and must receive an answer within 15 days.

Equality

Drawing upon the article 26 of the International Covenant on Civil and political Rights (ICCPR) (United Nations Human Rights 2018), the principle of equality means that everyone is treated equally, without discrimination. Although the concept was present in the

People's Republic of China (PRC) Constitution, the principle of non-discrimination began to be fully translated into a wide range of laws, not only trade-related, after joining the WTO, which led to an increasing public awareness of the notion of equality and non-discrimination principle. Additionally, the impressive growth after joining the WTO (see figure 2) led to growing disparities that have been instrumental in embedding the concept within the Chinese institutional setting. Indeed, it is widely acknowledged that growing social disparity is highly correlated with social protests (Bebington 2010). In this regard, Wang (2006) underlines that riots constantly grew over time, increasing by 28% between 2013 and 2014. This led to an informal process that incorporated progressively the principle of equality into the Chinese legal system, mirrored by legislative changes that represent a process of institutional change/convergence.

Due process and Justiciability of Government Actions

The principle of due process, referring to the administration of justice according to established rules and regulations, has witnessed a massive influence on Chinese legal system after joining the WTO (He 2008). Moser and Yu (2015) underline that the 'Provisional Rules for Taxation Administrative Reconsideration' of 2004 clearly states that lack of respect of the due process is unlawful. Lam (2009) highlights that a large number of laws, despite not using specifically the term 'due process', require that people in similar situations need to be treated equally, along with the right to defend themselves. This marks a huge difference compared to some years earlier, when the arbitrary practices played a more significant role, underlying a shift from 'China' disinterested government' (Yao 2008) to a deeper focus on the rule of law (Mazur and Ursu 2017). The concept of due process is highly related to the Justiciability of Government Actions. The Accession Protocol requires that China establishes impartial tribunals and agencies ready to challenge governmental acts and policies that beyond the power provided by law.

The increasing relevance of IPRs and the consistency with the TRIPS Agreement

The legislative improvements involved also the more specific field of property rights, which has always been crucial and critical for the long-term development of the Chinese economy. It is widely acknowledged in the literature the positive relationship between IPRs and economic development (Gould and Gruben 1996; Maskus 2000; Chang 2001; Li 2011). As an

example, Barton and Ezekiel (2005) highlight that Patent Law is a crucial policy in today dynamic business environment, fundamental to be globally competitive. Furthermore, Dutton (1984) provides an interesting overview of different scholars, underlying that during the late seventeenth and eighteenth centuries, the grant of patents has been key to drive the industrialisation in Britain and the evolution towards an advanced and high-income economy.

Juxtaposing the Western world with the Chinese one, it is easily noticeable a significant difference in the development of IPRs, which might be easily explained by cultural reasons. Indeed, the Western focused always on the importance of protecting the innovative ideas of individuals while, in China, it was believed that knowledge belonged to the State, mirroring the high-collectivist society and the Confucian values (Lehman 2006). However, by the end of the 19th century, China experienced significant changes driven by the strong need to improve the domestic institutional setting to sustain high growth rates. This led the Chinese government to adopt Patent, Copyright and Trademark laws, and join the IPR protection conventions.

Given the Increasing importance of IPR protection in the Chinese institutional context and the significant efforts towards the introduction of IPRs, in occasion of accession to the WTO, China was immediately bound to the TRIPs Agreement without the favourable concession granted to emerging economies: less developed countries, indeed, have five years to acknowledge the TRIPS Agreement in the domestic institutional setting (Bermann and Mavroidis 2007). It was believed, however, that the institutional setting in China had already internalised the significance of IPR and ready to embrace the WTO-based regulations in terms of IPR, which would have promoted additional improvements of the institutions towards a more Westernised and international setting.

The TRIPS, along with the GATT and GATS, is one of the multilateral treaties representing the foundation of the system WTO. Building upon the WTO-based principles treated in chapter 1, it sets international standards, in the field of IPRs, that members need to respect, so developing common institutional frameworks. After Part 1 (Articles 1-8) lists general information and the basic principles of the Agreement, Part 2 (Articles 9-40) establishes substantive rules in every form of IPR: copyright and related rights; trademarks; geographical indications; industrial designs; patents; layout designs of integrated circuits and undisclosed information. These rules have led to substantial modifications to Chinese legal environment.

About Patents, Chinese Patent Law was first introduced in 1984 (Patent Law 2008) and was modified several times until major changes were undertaken upon accession to WTO in 2001. Article 22 is fully consistent with Article 27 of TRIPS since it requires that inventions, in order to be patentable, need to be ‘novel, creative and of practical use’. Additionally, Article 11 now perfectly reproduces Article 28 of TRIPS, including the rights to forbid the offer for sale of the patented inventions. As regards trademarks, China’s trademark law was introduced for the first time in 1982 (Trademark Law 2014) and the accession to the WTO eliminated all the disparities with the TRIPS Agreement. Indeed, Article 8 first included just ‘words, graphics and their combination’ while now it is fully consistent with Article 15 of TRIPS, including a wider range of elements such as letters and numerals. Further, Article 13 protects well-known marks, which have always been an issue in China, undermining successful international relations. As an example, China refused DuPont’s application to register its trademark ‘Feon’ since the translation was already in use for refrigerants by Chinese manufacturers (Yang et al. 2004). However, given the binding TRIPS agreement, China now protects well-known marks in the domestic environment.

It is interesting to notice that geographical indications, defined by the TRIPS as the indications that identify a good, were not taken into account prior to 2001 (Farah and Cima 2010). The Chinese legal environment now requires that a trademark must not be registered if it contains misleading information. Even in terms of copyright, Chinese legal environment has been modified prior to join the WTO, but after 2001 further modifications have been made to be consistent with TRIPS (Copyright Law 2010). Article 21 is in line with Article 12 of TRIPS, requiring that the term of protection includes the lifetime of the author plus 50 years. The same convergence trend can be acknowledged as far as rental rights are concerned since Article 10 and 41 of China’s Copyright Law are consistent with Article 11 of TRIPS. China, indeed, provides authors and successors with the right to authorise or prohibit the commercial rental.

it is clear that China became aware of the significance of IPRs when reforms started in the 1980s, initialising modifications in the legal environment. In this regard, the accession to the WTO has been fundamental and instrumental to promote further changes and complement the convergence towards international standards. However, legislative changes are necessary but not sufficient since these laws need to be ‘workable’. Consequently, Part 3 of TRIPS (Articles 41-61) deals with the enforcement rules, which complement the previous section of the Agreement, providing a comprehensive IPRs setting. A large number of scholars outline

improvements even in the field of enforcement, which has been closely monitored by the WTO members thanks to a post-accession monitoring mechanism, named ‘Transitional Review Mechanism (TRM)’. A report by the OECD (2005) underline that the number infringement cases involving copyrights increased fourfold over 2002, while the number of cases involving patents and trademarks increased respectively by 67% and 13%.

Particularly, there are two ways to assert IPRs in China (Lam 2007; Farah and Cima 2010): administrative enforcement or through a criminal or judicial procedure. About the former, the owner of IPR provides evidence to the local branch of the agency in charge of protection of IPRs, which would take actions to confiscate illegal goods. This is the most common method and, even though it does not offer financial compensation to the owner, it imposes substantial costs on the infringer. Conversely, judicial procedure has recently witnessed a significant growth, which is the result, indeed, of strengthening the institutional environment after joining the WTO. Data show a nearly 50% annual increase of judicial cases from 2002, followed by more guidance, transparency and larger efforts to ensure improvements of judges’ qualifications (Sepetys and Cox 2008). Local courts are equipped with divisions specialised on IPRs (Li and Zhang 2008) and when such divisions are missing, panels are established to deal with the matter (Torremans et al. 2007).

An ex Chief Judge of the IP Tribunal of the Supreme People’s Court of China, Jiang Zhipei (2013), gave some statistics highlighting improvements of the IPR enforcement system. Particularly, the number of First Instance IP litigations accepted in 2012 was 87,419 civil cases, increasing by 45.99% from 2011. Additionally, administrative and criminal cases witnessed respectively an increase of 20.35% and 129.61% in the same period of time, amounting to 2,928 and 13,104 (Zhipei, 2013). Nevertheless, he pointed out that there are flaws in the system and consequent improvements to be made. As an example, more support from the court in certain circumstances is needed, such as when the infringer refuses to provide evidence while, in patent litigation cases, improvements in the overall process are required, like technical appraisals and expert consultations.

Enforcement deficiencies: WTO-China disputes initiated by US

Despite the improvements of the legal institutions in terms of IPRs, which are believed to promote the adequate institutional changes to sustain the impressive economic growth, much criticism is addressed to the Chinese enforcement system. Legitimate businesses are estimated

to suffer annual losses of US\$250- 750 billion in lost sales as a result of counterfeited and pirated goods (Mercurio 2012). The issue is mostly critical in US: the United States Trade Representative highlights an infringement rate of nearly 90% for all forms of IPRs. The USA started a WTO case against China for the scarce law enforcement, pointing out that some Chinese measures were inconsistent with the TRIPS Agreement. Particularly, the accuse involved 3 matters (United States Trade Representative 2009).

Firstly, the USA outline that China violated Article 41.1 and 61 of the TRIPS Agreement, in regard to the thresholds for criminal procedures and penalties: the critical points are Articles 213-218 of the China's Criminal Law. In this regard, the already-mentioned articles allow to start criminal procedures if the amount of sales is huge, so preventing a wide range IPRs owners to implement a successful procedure to defend their rights if the infringers keep the sales under the threshold.

The second area of concern regards the disposal of goods confiscated by the Chinese authorities that infringe IPRs. The USA accused China to put into markets all the goods that have been identified as infringers of IPRs, so misleading the consumers about the real value and being inconsistent with Articles 46 and 59 of the TRIPS Agreement. Finally, China does not protect works whose distribution and reproduction have not been authorised, being therefore inconsistent with Art. 5(1) of the Berne Convention as incorporated in Art. 9.1, as well as with Art. 41.1, as the copyright in such prohibited works cannot be enforced.

The dispute settlement procedure consists of initial consultations among the WTO members which, if not helpful to settle the dispute within 60 days, the complaining party, USA in this case, has the right to establish a panel at the next DBS meeting. The panel concluded that China should extend the protection also to unauthorised works, so violating Article 5(1) of the Berne Convention and Article 41.1 of the TRIPS Agreement, in relation to enforcement matters (WTO Dispute Settlement 2010). Additionally, the panel determined that Chinese actions were inconsistent with Article 59 by putting into the market channel infringed goods after removing the trademark. However, in relation to the attempt not to provide criminal procedures below certain numerical thresholds, the panel recognised that this was not sufficient to verify the violation of the TRIPS agreement. Indeed, the latter simply sets minimum requirements, especially in Part 3 about enforcement of the rules, so members might usually take arbitrary initiatives to comply to the Agreement.

The losing party has the obligation to comply with the recommendations of the panel, which involves bringing the Copyright Law and the Customs measures into conformity with its obligations under the TRIPS Agreement (Roy, 2000). This happens within a ‘reasonable period of time’: 12 months starting from the 20th of March 2009, when the DSB adopted the panel report. After exactly a year, China confirmed the amendments of the Chinese Copyright Law and the decision to revise the Regulations for Customs Protection of Intellectual Property Rights (WTO Dispute Settlement 2010). Thus, it had completed all necessary domestic legislative procedures for implementing the DSB recommendations and rulings.

The WTO dispute, culminated with the binding report issued by the panel, highlights important points. First of all, despite the initial domestic legislative changes undertaken before 2001 and the further modifications upon accession to the WTO, some gaps in the legal institutional environment might persist, as we have seen in regard to the Copyright Law. Nevertheless, the WTO dispute forces the losing party to amend the domestic law to fill the gap and further promote convergence towards international standards. It might be concluded that China has now a strong legal system in regard to IPRs as most advanced countries. However, strong institutional settings depend not only on the legislative side but also on the way these rules are enforced. In this regard, enforcement deficiencies are still widespread in China, counterbalancing the outstanding improvements in the legal institutions.

The persistent problem on IPRs infringement: recent (stagnant) developments

A recent report by the EU (2016) underlines that China is still the world's main producer of counterfeited goods. This has been supported by a recent study by the OECD/EUIPO (2016), highlighting that Chinese goods represent the 61.8% of all the faked products, rising to 80% if Hong Kong is included. These data clearly show that, despite the establishment of a Western-based legal institutional environment, the infringement of IPRs is still a critical issue in China, undermining the successful relationship with trade partners. The issue has been brought out once again by the USA, guided by the new administration of Donald Trump. The approach was motivated by the large amount of losses in specific industries related to China rise. On August 18, 2017, the Trade Representative initiated an investigation that supported the high levels of infringement notwithstanding the improvements in the legal system. The President of USA accused China for a substantial theft of IPRs and unfair business practices, taking 2 significant initiatives aiming to finally put an end to the problem.

The first one is the imposition of a first round of 25% tariffs on \$34 billion worth of Chinese goods which, announced in March, took effect on the 6th of July. The Chinese government reacted almost immediately with an equal initiative against the US, starting what could become the biggest trade war. Additionally, on the 7th of August, the US announced a second round of tariffs, which will hit \$16 billion of Chinese goods and will take effect on 23rd August (Tan 2018). The starting of a trade war by the USA is going to have certainly an impact on both China and the USA, but also the whole economic world (Peterson Institute 2018). Oxford Economics estimates that the trade war will slow the growth by 0.2% this year, which will probably be higher if variables like rising business uncertainty and supply chain disruption are considered (Independent 2018). Additionally, the Bank of England (2018) foresees that the global trade will decrease global GDP by 2.5%, having a worse impact on the US: 5%. Indeed, with respect to the US, rising costs are likely to affect consumers, leading to pressure on the Federal Reserve, increase the interest rates and slow growth (the US is highly dependent on debt). The reason for this trade war is twofold. The first aim is national security: cutting the relationship with China to avoid further losses that result from unfair business practices. In this regard, there is a debate underway about the legitimacy of the tariffs imposed by the Trump administration. A large number of critics argue that, under the WTO-based rules, the unilateral initiatives by the US are illegal. Indeed, the WTO clearly expresses that, as part of the non-discrimination principle, countries could not discriminate between trading partners, implementing unilateral actions unless permitted by the organisation (Gupta 2018). However, Trump justifies his policy arguing that tariffs are a necessary tool as a result of the unfair theft of US IPRs by Chinese firms and the Chinese government (Bryan 2018). Secondly, Donald Trump aims to harm the Chinese economy so that structural changes will be finally implemented to end the IPRs infringements. Given the above-mentioned costs, it is compulsory to wonder if the benefits, represented by the enforcement of IPRs, are higher. The answer depends on the identification of the source of the problem and the consequent resolution. The trade war will be reconsidered in the last section of the next chapter, in which a further conclusion of the comparative analysis between costs and benefits will be drawn.

The second reaction involves initiating a WTO dispute, as happened nearly a decade ago. The USA requested consultations with China on 23rd March 2018 but, at the time of writing, no panel has been established or a mutually agreed solution notified (WTO Dispute Settlement 2018). Citing Yu (2005), this initiative might fall into what it has been identified as a new 'cycle of futility', which represents initial short-term benefits and improvements in the overall institutional setting followed by increasingly enforcement deficiencies in the longer term that

start a new cycle. The cycle is the result of a focus, by external forces (namely US before 2001 and WTO afterwards), on the mere legal institutions: this is reasonable if the aim is to develop strong rules and regulations. However, as argued by Wang (2004), upon accession to the WTO, China has devoted great effort to further converge the legal system towards international standards and does not need any more improvements. The author stresses out that the high percentage of infringement needs to be found elsewhere, blaming China for not having created a multi-dimensional awareness of the impotence of IPRs. This underlines indirectly that the source of the problems, and the consequent resolving policies, need to be found in the deeper and broader institutional setting, as explained in the next chapter.

Yu (2005) underlines that the first cycle began in the 1992 Memorandum of Understanding Between China (PRC) and the United States on the Protection of Intellectual Property (1992 MOU), which revamped the Chinese intellectual property system. Despite these short-term improvements, the second cycle emerged two years later, leading eventually to the 1995 Agreement Regarding Intellectual Property Rights (1995 Agreement), which included a detailed action plan that laid the foundation of the current enforcement infrastructure. Notwithstanding this action plan and the "special enforcement" efforts taken by the Chinese authorities, a third cycle emerged in less than a year. This time, China and the United States were unable to reach a new agreement. Instead, they agreed to a document that mostly reaffirmed China's commitments previously made under the 1995 Agreement. As it has been mentioned several times, upon accession to the WTO in 2001, China improved the institutional setting in terms of IPRs by converging towards international standards.

The WTO dispute in 2007 described above represent the fourth cycle. While intellectual property protection improved during the first few months immediately following the agreements, piracy and counterfeiting problems worsened once international attention was diverted. Within a short period of time, American businesses again complained to the U.S. government, and the cycle repeated itself.

Figure 1, firstly, shows that, despite the full convergence of the legal system in China towards more Westernised IPRs institutions, the score is not as high as should be, compared to Westernised countries such as UK (7.92/10) or Switzerland (8.58/10). Legal institutions, indeed, are counterbalanced by scarce enforcement that is the real issue in China. The figure, more importantly, shows what Yu (2005) has named 'cycle of futility'. When the USA started to accuse China and threaten a WTO dispute in 2006, IPRs sharply improved mirroring a more effective enforcement. However, it was a short-term improvement and the trend

reversed later on, leading to high infringement levels and new accuse by the USA. This trend is going to repeat since the recent WTO dispute addresses issues in the mere legal system in terms of IPRs, specifically enforcement issues that involve patents. China will implement the suggestions in the short term, witnessing an increase in the IPRs curve, followed by a sharp decrease afterwards. Addressing enforcement issues in China, indeed, requires a broader institutional intervention rather than keeping the focus on the legal institutions, which are now well-developed particularly after joining the WTO in 2001.

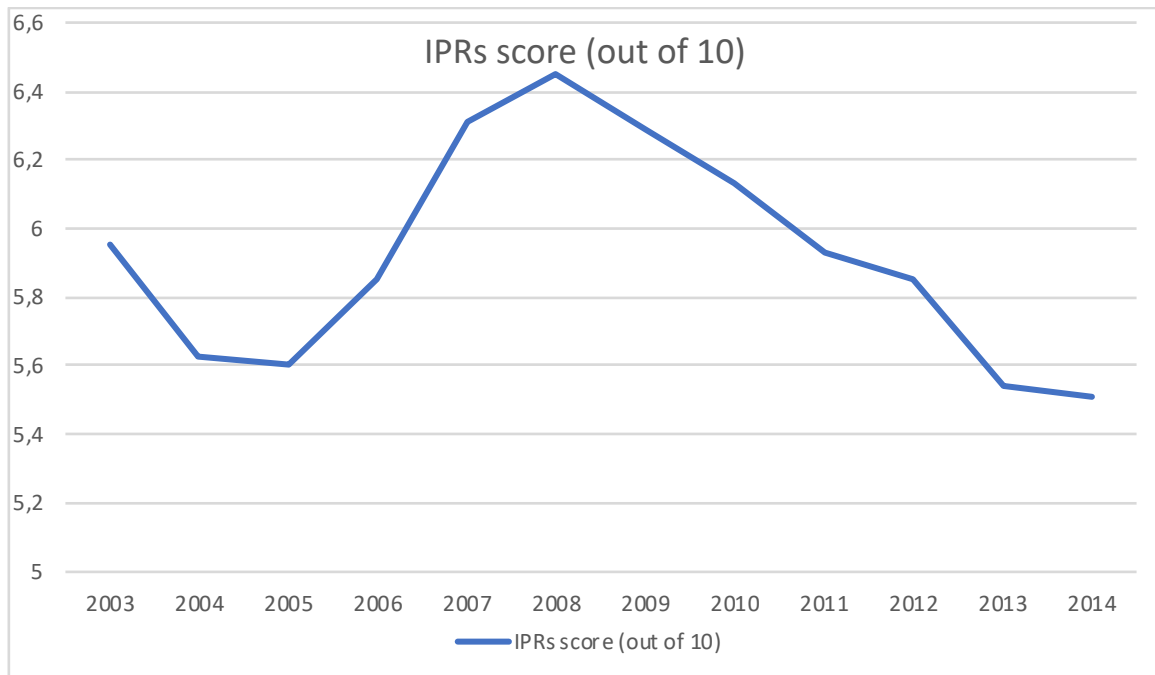


Figure 3: Evolution of the IPRs over time. The graph has been created by the writer drawing on data from the Fraser Institute (2018).

Chapter 3

The key role of the interdependence between political and socio-cultural institutions

Political institutions are among the biggest issues of inadequate enforcement, namely the already-mentioned regionally-decentralised authoritarianism layout, which is characterised by a clear separation between the central and local governments. An increasing number of scholars highlight that, although China presents the same problems in the 21st century as in the early 1980, the source of the problem is different (Massey 2006). If three decades ago the main issue involved the unwillingness of the central government to provide an effective legal system, today the central government is aware of the economic benefits deriving from the development of a 'Westernised system', but local and 'isolated' governments oppose an effective enforcement (Cao 2014). The presence of different local governments and several layers are justified by the size of the country and lead to high level of confusion since laws and regulations could be applied differently depending on the specific agencies (Chung 2015). Additionally, other issues emerge if a firm produces a counterfeited product and sells it to other provinces. Lack of coordination between provinces, and not only among provinces and central government, lengthens the time a case is settled, which might make the technology obsolete and undermine the effectiveness of the law enforcement. Further, counterfeiting has been an integral part of the local governments activities since it is positively related to economic development. Indeed, wholesale markets are established by the provincial governments, so shutting down the trade on counterfeiting goods means that the local economy would suffer a profound crisis. This pushes local governments to establish close relationships with strong local players, which are reinforced by strong informal institutions.

The foundation of informal institutions, namely the socio-cultural dimension, in China is Confucianism, whose main feature is *guanxi* (Buckley et al. 2006): the importance of establishing an interpersonal network based upon implicit obligations and understanding (Yang 1994), which explains the high score on the collectivism dimension (figure 1). *Guanxi* does not only shape the social life but is also a key component of business practices (Ma 2009). In this regard, it is widely acknowledged in the literature that a high percentage of Joint Ventures (JVs) established between a Chinese and Western partner fail due to divergences in culture (Lockett 1988; Verbeke 2013). The former is more focused on group work and constantly learning by others while the latter is more individual-based. The lack of compatibility with the partner and the significant focus on learning from the partner explains

also why the majority of international JVs end with the Chinese partner characterised by a stronger competitive advantage. As another example, in the field of Human Resource Management (Harzing and Punnington 2015), practices in China are different from Anglo-Saxon-countries. Chinese managers tend to adopt group-based performance appraisal techniques compared to individual-based methods adopted, for example, in UK, mirroring differences in culture.

The importance of being part of a network deeply influence the political institutions: provincial governments establish relationships with local players based upon trust, promoting and defending a win-win situation that affords financial compensations deriving from counterfeiting activities. This shows a practical example of the new institutional theory that focuses on the interrelation between formal and informal institutions in shaping the institutional framework. Drawing upon the studies by North (1990), Williamson (2000) points out that informal institutions belong to 'Level 1', which is the most embedded within a society and so more challenging to change and evolve over time. Despite a wide range of scholars that support the institutional theory in explaining the causes of trade disputes between US (and more broadly the WTO) and China argue that local protectionism is the main cause, the above analysis, drawing upon Williamson (2000), shows that informal institutions, guanxi, plays a key role in the enforcement deficiencies.

Informal institutions are key also in terms of the way Chinese look at the concept of individual 'IPRs'. indeed, the concept emerged quite recently compared to Western countries and, despite China now shows a developed legal system, might need more time to be fully absorbed within the institutional setting since informal constraints are deeply embedded (Lehman 2006). Traditional Chinese views on intellectual property are not to be found in legal codes but in code of conducts that are not easy to change in the short term and, further, need the right institutional context to be developed. The concept of 'IPR' has been introduced recently through legal modifications but needs to be fully absorbed by Chinese people. To make things more complicated, informal institutions in China are even more context-specific than other countries due to the long-term orientation (Hofstede 1990). Chinese people, indeed, are highly influenced from what they have experienced in the past. In this regard, since they have witnessed a long period of absent IPRs and code of conducts replacing written regulations, the recent development of a legal system consistent with international standards might encounter daunting challenges.

Economic institutions: key area of interventions?

From a mere economic point of view, the long-standing absence of the concept IPR and the collectivist and long-term oriented culture mirror an almost-absent private sector and the counterpart well-developed public sector guided by a large number of SOEs. Before 1980, a private sector was totally absent, and reforms aimed at privatising SOEs and increase efficiency started just in the 1990s. Nevertheless, as it might be expected, despite reforms the government still plays a key role in the inefficient public sector since China accounts for the largest number of SOEs, namely 51,000 (OECD 2017), granting favourable conditions, particularly due to deep linkages with the financial institutions (Hasan et al. 2009). Indeed, SOEs are often destinations of financial remuneration instead of financing efficient and innovative start-ups that push towards a strong need of developing IPRs (Brimall 2008). This highly regulatory environment is a disincentive to the development of new innovative ideas that promote awareness of a need to develop strong IPRs enforcement and fosters a strong sense of suspicion among customers about new entrants with no government support. Additionally, new entrants face issues regarding lack of established relationship, which is crucial in the Chinese business environment.

Moreover, it should be added that China, despite the outstanding growth rates guided by strong informal institutions, is still a ‘developing country’. As such, it is characterised by scarce high-tech assets which would promote the incentive of the local government to protect IPRs. Indeed, as happened in US, IPRs start to be well enforced if economic institutions promote the development of innovative technologies worth protecting.

The World Bank (2001) underlines that the TRIPs Agreement will have a diverse effect depending on the current industrial and technological development. Particularly, the report stresses out that benefits from protection of IPRs occur only with high incomes and technology sophistication. In this respect, Lall (2003) ranked all the countries according to the ‘competitive industrial performance’ (CIP) index for the year 1998, which includes: Market value-added (MVA) per capita, manufactured exports per capita, the share of medium and high technology (MHT) products in MVA and the share of MHT products in manufactured export. China scores 0.126 on a maximum of 1, placing itself in the medium position. The author underlines that medium groups have a mixture of beneficial and non-beneficial effects since they are in transition towards fully innovation-based economies, namely at the turning point from a developing to a developed country.

However, given the current technological capabilities, China has still to rely on imported technologies: dependence on foreign technology is as high as 50% in many fields. As an example, given the importance of the semiconductor industry to drive innovation, China's government encourage foreign companies to form joint ventures and transfer the technology to domestic players, promoting in this way a technology catch-up (Horwitz 2018). This contrasts with the necessity to develop the own innovative capabilities, moving up the value chain and become more competitive on a global scale. It is believed that a full transition is necessary to modify the awareness of IPRs and so the informal institutions. The next section will give an insight into the innovation system, which is believed is key in regard to enforcement of IPRs, before describing the Chinese reality that fully represents an innovation-based hub: Shenzhen.

National innovation system: evolutionary perspective

Prior to reforms, China's innovation system was totally under the control of the central government as all the centrally-planned economies, such as Russia. Particularly, the major players in China were universities and in-house R&D units in SOEs. The flaw of this system was the separation from production activities and around two thirds of R&D investments were conducted away from production processes: the situation is the opposite in industrialised economies where the industrial sector comprises at least the 60% (Xue 1997). It is widely acknowledged, indeed, that industrial research is more efficient since successful innovation stems from the interrelation of different functions and the interdependence between user and producer. This led to the implementation of reforms to reduce government intervention and promoting technology markets. The latter, however, did not develop due to weak absorption capacity and less developed social capital.

Despite reforms, the expenditure by the industrial sector was really low in the 1990s (around 22%) and level of national investment was much lower than other countries, fluctuating around 0.65% as a percentage of the GDP in the 1990s. An article in the Chinese People's Daily, cited by Cao et al. (2006), shows that 75% of enterprises do not employ anybody to conduct R&D investments. The industrialisation did not result in strong indigenous innovation; China's economy did not undertake the fundamental evolution from 'Made in China' to 'Designed in China' as countries like USA and Japan did.

Moreover, the FDI-based strategy allowed increasing counterfeiting activities through reverse engineering practices, which fosters IPRs infringements to catch up with foreign players without undertaking domestic R&D investments. Theoretically, indeed, it might be conjectured that increasing FDI leads to more competition that might foster more R&D investments. However, given the institutional reasons highlighted above, FDI do not promote increasing R&D investments, despite the legal improvements upon accession to WTO, but re-innovation practices to be more competitive. The same conclusion has been supported by an econometric study (Lundin et al. 2007) that analyses the relationship between FDI and indigenous innovation by testing, first, the relation between FDI and the structural setting of the market, namely the level of competition, and then the effect on domestic R&D, which is linked to a better degree of technology update that fosters the development of awareness of the importance of IPRs, and so better enforcement to complement an already-mature legal framework.

This is the first time that the indirect relationship between FDI and indigenous innovation, passing through the level of competition, has been analysed in China and the conclusion is not, *ex ante*, clear. First, FDI, especially greenfield investments, increase the number of competitors in the local business environment (Haller 2004), suggesting a positive correlation in the first relationship. Alternatively, FDI may raise the level of concentration in the host market by ensuring to foreign multinational enterprises leading positions that reduce the number of firms (Aitken and Harrison 1999).

In regard to the relationship between degree of competition and innovation, economic theory gives us little guidance to make exact predictions. On the one hand, indeed, the replacement effect by Arrow (1962) highlights that, when competition intensifies, monopoly rents decrease along with the incentive to innovate, underlying a negative effect. On the other hand, the selection effect outlines a positive relationship since firms might further improve their innovative capabilities trying to escape competition (Boone 2000; Aghion and Schankerman 1999).

The analysis drew upon a large sample of large and medium enterprises compiled by the National Bureau of Statistics of China, covering the period 1998-2004. Lundin et al. (2007) adopt a two-step econometric approach, investigating first the impact of FDI on the market structure. The dependent variable is the price cost margin (PCM), calculated as $(\text{value added} - \text{payroll}) / \text{value added}$: a high level suggests a low level of competition. Findings outline that FDI has a negative impact on PCM, but there is a time lag before the competition from FDI

has an effect; lag 1 of FDI is statistically insignificant but lag 2 is significant. Adding the interaction term of FDI and the Herfindahl index, which represents the degree of concentration of the market, the results remain stable. It can be concluded that FDI imposes significant pressure on domestic firms in China, increasing the level of competition. In regard to the relationship between the increasing competition (PCM), as a result of FDI, and domestic R&D, the results are statistically insignificant using both OLS and GMM. The conclusion that can be drawn is that the FDI-based policy does not affect indirectly domestic R&D.

The large amount of FDI has been successful in helping the manufacturing system and stimulating the impressive growth of China's high-tech growth, but the value-added activities account for 3-4% of the entire value chain (Xing 2011). As a result, the key point is to build upon indigenous innovation that substantially increase the value created in the value chain and promotes a better enforcement of IPRs, contributing to economic growth and harmonious development. Thus, has been recognised by the Chinese government that issued a 15-year 'Medium-to-Long-Term Plan for the Development of Science and Technology' in January 2006, aiming to become an innovation-oriented society by 2020 and world leader by 2050. The plan intends to reduce dependency from imported technology, which is the consequence of the FDI-based that attempts to transfer technology, while focusing on internal innovation, aiming to invest 2.5% of GDP in R&D (Cao et al. 2006). The focus on indigenous innovation, which is the critical part of the plan, has been subject to debate since it was associated with techno-nationalism. In this respect, a senior official argued that it simply deals with integrated innovation drawing upon assimilation and improvements of existing technologies, suggesting a continuative dependence upon foreign technologies. Along with the identification of key priorities, such as basic science advanced manufacturing, the plan focused on encouraging industrial enterprises to assume a leading role in the innovation system by taxation incentives and strengthening human resources. Indeed, China now employs a large labour force of scientists, offers more science and engineering degrees than US, the quality of research has improved steadily, placing China as the largest producer of scientific papers after US (Xie et al. 2014).

However, the system has been so far criticised for its top-down approach, which should be integrated with a bottom-up approach to make China finally a fully innovation-oriented economy and promoting effective enforcement of IPRs (Schwaag-Serger 2007). What is missing in China is what scholars refer to as an 'organised market' (Gu and Lundvall 2006),

which focuses on networking and interactive learning. Scholars outline that China is viewing the current situation as a trade-off between imports from foreign technology and ‘techno-nationalism’. However, Chinese exponents should consider both perspectives to create learning regions (Gu et al. 2016). Reforms should aim at developing networks of firms where tacit knowledge is involved, discouraging reverse engineering practices, and so counterfeiting activities, and fostering the development of technology upgrade that motivate the willingness to protect IPRs. This will bring more value-added activities in the value chain that do not only motivate the local government, the real cause of the lack of enforcement in China, to enforce IPRS, but also promote awareness among businesses of the importance to protect IPRs. Additionally, networks need to focus on domestic needs which are diverse within China, suggesting various starting points for innovation and networking consolidation. This will create, indeed, a system in which top-down and bottom forces pushes towards a better enforcement.

Shenzhen: an example of indigenous innovation

Shenzhen has evolved from being a small fish village and first SEM to an emerging centre of innovation, known globally as the ‘Chinese Sylicon Valley’. The city has been characterised by outstanding growth averaging 35% through the 1990s and 15% recently, placing itself as the region with the highest GDP per capita within the country with over 40 per cent of the output came from “innovative” businesses (Huifeng 2018). Shenzhen, no longer receives manufacturing orders from foreign companies but domestic players now created their own products, implementing a successful shift from a labour-intensive to an innovation-based reality, whose value-added activities substantially grew over time reaching 36% in 2014. As it has been already theoretically hypothesised, this change in the economic institutions fosters a sense of awareness of the importance of IPRs which, coupled with a full integration of the local government, enhance the IPRs enforcement. As argued by a large number of domestic players (Wired 2016), companies are indeed realising the importance of new ideas, design and, consequently, the fundamental role played by IPRs. The region witnessed applications for 82,254 patents in 2014, doubling compared to 2009: patents granted amounted to 53,687 in 2014, up from 25,894 in 2009 (Chen and Ogan 2018). Interestingly, Shenzhen accounted for 51.8% of all applied patents in China, more than half within the entire country.

Comparing Shenzhen with the Sylicon Valley in US, the main and huge difference that stands out is the role of the government. Unlike SV, central and local government are highly-active

and promote entrepreneurial initiatives through financial incentives (Jing and Lee 2017). Additionally, the local government is spending RMB21.5 billion (\$3 billion) on emerging industries, such as new energy, and counterbalance the lack of angel investors with the establishment of a fund of 5 billion to focus on angels' investments (Yu and Haoting 2018). Moreover, Shenzhen industrial update has been driven by strong improvements in human capital. The number of college graduates constantly increased: college educated talents as a percentage of its population amounts to 37.1%, higher than 28.6% in Beijing, and 23.4% in Shanghai.

The local government and the development of human capital are interrelated since the former contributed to the latter. Indeed, local government tries to attract high-level professionals to the region, such as through the Peacock initiative' launched in 2011: 100 million yuan will be provided as a reward to make scientific breakthroughs. As an example, it also launched the 1st Innovation Competition of International Talents held from November 2015 to April 2016, which is open to all IT talents around the world, to win a total of \$880,000 bonus plus an additional \$200 million government subsidies and venture capital (Hong 2016). Further, the local government constantly invited renowned universities to establish campuses in the zone to build effective university-industry linkages.

Chen and Ogan (2017) underline that the source of astonishing growth in Shenzhen was a heavy in-migration that generated several innovative ideas. However, even in this case the local government played a key role. As an example, Shenzhen adopted wage reform, minimum wage and social insurance package that attracted many skilled workers (Zeng 2012)

Is the 'Shenzhen effect' transferable throughout the country?

It is acknowledged in China that industrial clusters might emerge from successful SEZ (Zeng 2012), such as information and communication technology clusters in Zhongguancun (Beijing), the electronics and biotech clusters in Pudong (Shanghai), the software cluster in Dalian, and the opto-electronics cluster in Wuhan. Given the substantial differences in growth between Shenzhen and other clusters, it is reasonable to believe that little is attributed to geographical proximity (to the international marketplace) since all the clusters count on this location advantage. Consequently, the main differences rely on the above-mentioned causes, namely developed human resource and local government. As an example, in regard to the ICT cluster in Beijing, Tan (2006) underlines that lack of entrepreneurial leadership, venture

capital and scarce linkages with university led to the stagnation of the cluster. Consequently, the implementation of the Shenzhen-like set of policy might, on the one hand, improve existing clusters and, on the other hand, develop new ones.

Generally speaking, as shown in figure 3, despite still lying behind US, China's labour force in science and engineering (S/E) has witnessed a remarkable growth. The figure highlights that the bulk of growth occurred between 2000 and 2010 but, if the population size is taken into consideration, the percentage amounts to just 0.4%, which is far smaller than US: 3.1% (Xie et al., 2014). as a result, despite recent improvements, much attention needs to be devoted to human capital development.

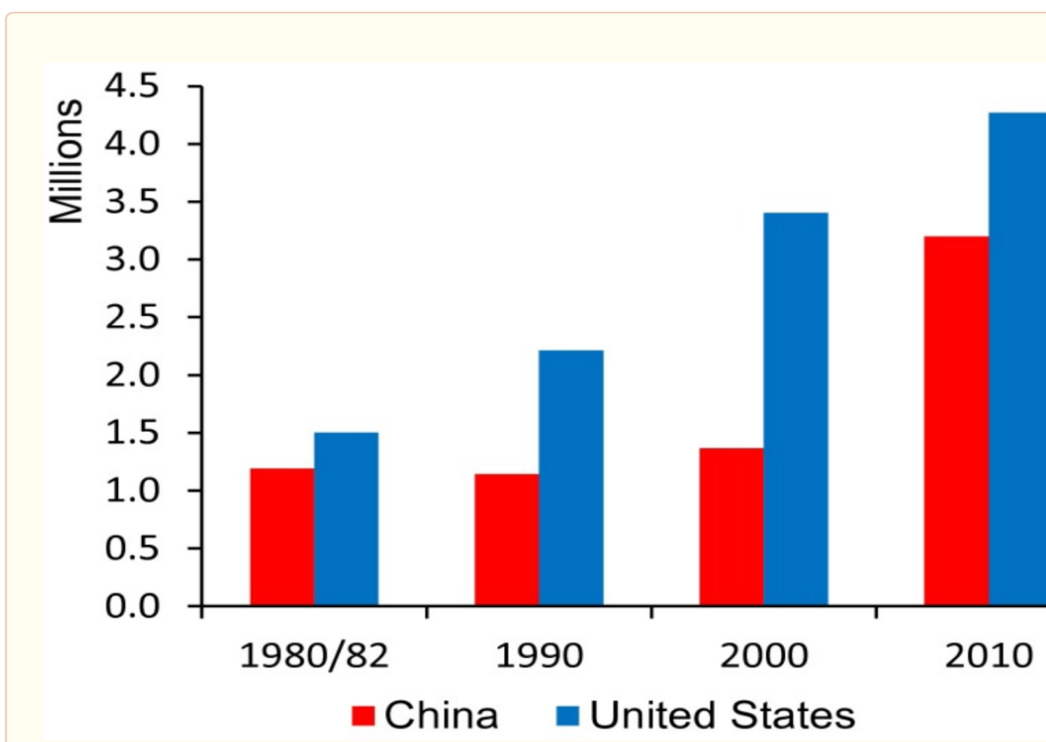


Figure 3: Labor force in S/E. Source: Xie et al. (2014)

The vision to develop clusters to further ultimate the economic transition has been also shared by Crane et al. (2018), who underlined that, in order to reduce the economic disparities between the West and East, the only solution is to establish SEZs even in the West. However, the West lacks the location advantages, not only in terms of geographical proximity but also infrastructure that have been the engine for the East SEZs, fundamental for the initial success (Fan et al. 2011). Indeed, in a comparative analysis of Shenzhen and Kashgar, Chou and Ding (2015) concluded that the former is simply an exception since the latter, bordering Central

and South Asia, did not succeed in attracting the right amount of foreign investments. Fogel (2017) suggests that, in order to fully benefit from the transition towards an innovation-oriented economy, the attention should also be drawn to avoiding the increase in regional inequality. In this respect, the Government, aware of the necessity to implement the ‘basics’ in the west before further expanding the SEZ policy, issued the ‘Great Western Development Strategy’ (China Business Review 2010). The latter focuses on building up infrastructure, promoting education and retaining talents. So far, a total of 1 trillion yuan has been spent but effect will be visible in the following years.

Further Considerations and short-term initiatives for MNEs

The necessity to take inspiration from Shenzhen and focus on innovation has already been internalised by China, namely ‘Made in China 2015’, 15-year ‘Medium-to-Long-Term Plan for the Development of Science and Technology’ and the 13th Five-Year Plan (2016-2020). The latter clearly outlines the need to build regional innovation by focusing on HRs and entrepreneurial incentives (Ministry of Science and Technology 2016). The shift in the economic institutions will progressively modify the awareness of IPRs (informal institutions) and further improve the institutional setting. It is clear that mere interventions in the legal environment, which is already well-developed, and the trade war started by Trump are futile attempts. However, during the process it leads to a better enforcement of IPRs, multinational enterprises (MNEs) might take initiatives to defend from such an evolving context, until the transition period is ended and a fully-developed enforcement setting has been established.

MNEs might take 3 different kind of initiatives: proactive, defensive and networking (Yang et al 2004). In the first case, the strategy adopted by Coca-Cola might be successful: setting a low price in the market to avoid counterfeiting activities. Indeed, buyers will purchase counterfeited products if differences in prices are substantial, but if the original product is cheap, this will disincentivise theft of IPRs. However, this strategy depends on the business model adopted. An alternative solution might be to specify ex ante, in occasion of partnership with local firms, sanctions for the infringements of IPRs, filling the cultural gap between Western and Chinese firms. Additionally, a well-known defensive strategy is to acquire a potential IPRs infringer in the market, which will reduce indirect costs in the long term and further penetrate the market. Finally, networking strategies emphasise the importance to cooperate and seek support from the government and enforcement agencies. As an example, Microsoft has established training institutes at the government level to increase awareness of

IPRs (Microsoft China 2018). Another solution might be to have a direct impact on consumers through advertising or indirect effect mediated by deep relationships with, for example, media and project sponsors.

Conclusion

In today dynamic business world, innovation became the key source of competitive advantage to stand out of competition. MNEs are increasingly recognising the need to move up the value chain to draw upon more value-added activities and be more competitive on a global scale. It is widely acknowledged in the literature, however, that innovation requires a strong and significant protection of IPRs, to incentivise the development of innovative businesses. In this respect, China felt the need to fill the gap in the institutional framework, characterised by scarce IPRs counterbalanced by strong informal institutions, to sustain high economic growth rates. The accession to the WTO, given the binding TRIPS Agreement, has been regarded a key strategic choice to develop a strong legal environment. However, evidence shows that China is still the most IPRs infringer and the priority number 1, as recognised by the European Commission. The biggest losses, nevertheless, are suffered by the largest economy in the world, the US, constantly in trade deficit with China.

Putting an end to this widely and globally discussed debate is the prime concern of most economic players. The WTO dispute settlement, however has been ineffective to solve the issue. Figure 3 has shown that, despite short-term improvements in the enforcement of IPRs, once the international attention is diverted, key issues reappear in the medium term and counterfeiting activities become again the most crucial problem in the Chinese business environment. This paper has shown that, the recent WTO dispute initiated by the Trump Administration on the 23th of March 2018, will probably have the same result of the previous one, leading to what Yu (2005) has termed ‘cycle of futility’. Citing Wang (2004), indeed, addressing the mere legal institutions as the source of the problem is a waste of time and resources. After joining the WTO, China developed a sufficient and strong legal system consistent with international standards, but the key issue, according to the author, is the lack of a multi-dimensional understanding of the importance of IPRs, underlying the deeper source of the problem: informal intuitions.

Important findings outline, indeed, that the concept of IPRs has been introduced recently in the legal environment and might need a significant amount of time to be fully absorbed within the Chinese institutional context, characterised by the embeddedness of codes of conducts and conventions that replace the rule of law (Hofstede 1990; Lehman 2006). Furthermore, given the interdependence between formal and informal institutions (Williamson 2000), the latter highly influence political institutions. Indeed, local governments draw upon Guanxi to

establish long term relationships with strong local players benefiting economically from counterfeiting activities, which are motivated by the concentration of the large part of economic activities in the low end of the value chain, favouring reverse engineering practices. It is argued that interventions in the economic institutions to incentivise the evolution from a manufacturing-based to an innovation-oriented economy will have significant consequences on informal institutions. First, the change will foster the awareness of the importance of IPRs among business players, progressively moving up the value chain focusing on more valuable activities. Second, local government will be more incentivised to protect and enforce IPRs as the result of placing innovation as the source of competitive advantage.

As an example, Shenzhen has witnessed a full transition towards an innovation-based hub, becoming the ‘Chinese Silicon Valley’. Not only the region accounts for more than half of the patents granted in China, but domestic players started to internalise the importance of IPRs as a consequence of the increasing focus on innovation rather than low-cost manufacturing (Wired, 2016). The analysis of the successful path witnessed by the region might give the right directions for policies to transfer the ‘Shenzhen experience’ throughout the country, thus promoting a full transition towards an innovation-based economy. The success of Shenzhen originated from 2 main sources: the involvement of an entrepreneurial local government and the development of human resources. It is believed that China is aware of the importance to improve in these key areas, suggesting that the overall IPRs will progressively show progresses and the recent WTO dispute, along with the trade war initiated by the US, are mere futile attempts. With respect of human resource development, data show an increase since 1980, with higher growth rates from 2010, predicting a further increase in the coming years (Xie et al. 2014).

The issue originated from the belief that China would have immediately benefited from the TRIPs Agreement. The WTO grant developing countries favourable concessions which, however, were not given to China. It was believed, indeed, that China was ready to fully benefit from IPRs protection given the impressive economic growth and the already-modified legal system. However, China is still a developing country. Lall (2003) highlights that the positive gains from the TRIPs agreement are correlated with the economic development. Benefits will be visible once China witnesses a full economic transition that will nullify the radical influence of informal institutions¹.

¹ Number of words (excluding references but including the abstract in Italian): 13.125

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