

China and Global Trade Governance

China's first decade in the World Trade Organization

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Ka Zeng and Wei Liang

3 China, foreign investors, and TRIMs

Bulking up, but not fully compliant

Jean-Marc F. Blanchard

Introduction

It has been a little over a decade since China became a member of the World Trade Organization (WTO). In becoming a member of one of the world's most significant international economic institutions, China obligated itself to fulfill a plethora of demanding terms ranging from adhering to the principle of national treatment to eliminating all trade balancing conditions and meeting all the requirements of the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS). China's progress in meeting its WTO commitments has been a major area of study. There also has been considerable attention given to China's performance as a member of the WTO with scholars asking if China has been a "revisionist or status quo" player and whether the country has contributed positively to WTO negotiations, such as the Doha negotiating round (Pearson 2006).

Although China's WTO compliance record has been frequently investigated, it has been rarely explained. Still, there are several interesting structural analyses, which focus on how international institutions shape China's behavior (Lanteigne 2005; Chan 2006; Kent 2007). Yet variation across WTO issue areas (for example, trading rights versus sanitary and phytosanitary procedures), industrial sectors, and policy structures versus implementation has encouraged most analysts to analyze specific WTO sectors (for example, banking and telecommunications) (Thiers 2002; Chang *et al.* 2005; Bell and Feng 2007). To bolster the database on China's fulfillment of its WTO accords, this study uses government documents (American, European, and WTO), industry association reports, and interviews to examine China's compliance with its general Trade-Related Investment Measures Agreement (TRIMs) obligations and commitments in three sectors: alternative energy, automobiles and automobile parts (collectively "auto"), and semiconductors.¹ Its original contribution is to provide comparative information on China's cross-sectoral TRIMs performance and to explain variation in China's compliance across sectors.²

My analysis reveals China's fulfillment of its general TRIMs obligations remains a work in progress. It further highlights concerns relating to China's record in the alternative energy, auto, and semiconductor sectors. On a related

note, it shows that China's compliance patterns vary across these three cases with the auto sector manifesting the greatest, the alternative energy sector the second, and the semiconductor sector the least divergence. My chapter confirms that arguments stressing economic/industrial policy, socialization, and external pressure do not fare well in explaining variation across these three sectors. Neither do interest groups arguments offer much help. My study's main theoretical value is to demonstrate the usefulness of a leader-centric, cost-benefit model for illuminating China's WTO TRIMs performance across differing sectors such as those analyzed herein.

This study contributes to a number of debates in international relations generally and with respect to Chinese foreign economic policy specifically. First, it illuminates the degree to which international institutions shape the behavior of countries like China (Johnston 2008). Second, it sheds light on the pattern of China's foreign economic policies, which some see as influenced heavily by external forces and others see as more strongly shaped by internal dynamics (Moore 2002; Zeng 2007). Third, for those focused on domestic factors, it should enrich discussions about the extent to which ideology, interest groups, or other factors drive Chinese foreign economic policy behavior (Liew 2005; Kennedy 2006; Zeng 2007). From a policy vantage point, a better appreciation of China's compliance patterns helps minimize overreaction. Finally, it yields a more sophisticated understanding of the tactics the international community might adopt to encourage greater Chinese WTO adherence.

The second section offers some thoughts about how we might think about China's compliance. For background purposes, the third section discusses the implications of Beijing's TRIMs commitments in terms of China's obligations and discusses some of the concerns of WTO members about China's TRIMs performance. Following sections delve into China's performance in meeting its TRIMs terms vis-à-vis the alternative energy sector; probe China's success in meeting its auto sector related TRIMs obligations; examine China's record with respect to the semiconductor sector; and consider how some popular explanations fare in explaining the dynamics of the three sectors. The conclusion offers some summary, expounds on the ramifications of my finding, and provides some concluding remarks.

Measuring China's "compliance"

The term "compliance" is widely used in the literature on international organizations, law, and trade. The term, however, is often left undefined, conceptualized in a fuzzy way, or is defined without the provision of metrics to assess compliance. We are told, for example, that compliance reflects conformity to "what [an] agreement prescribes or proscribes" even though it frequently is contestable what an agreement prescribes or proscribes (von Stein 2010). One seminal literature review article on "compliance" adopts a wide-used conceptualization of compliance advanced by Oran Young: "compliance can be said to occur when the actual behavior ... conforms to prescribed behavior, and noncompliance ...

occurs when actual behavior departs *significantly* from prescribed behavior" (Simmons 1998: 77, emphasis added). Similarly, a recent, wide-ranging study of China and international institutions portrays compliance as, to paraphrase, "reasonable adherence with the norms, principles, and rules of an international institution" (Kent 2007: 21). Yet it remains unspecified how we determine if there is *reasonable* adherence or *significant* divergence.

Further obfuscating matters is the fact that compliance may occur in different realms: the adoption stage (when laws are passed), the implementation stage, or the third-party adjudication stage. This is made abundantly clear in one work that identifies several stages of compliance, including the fulfillment of reporting and technical requirements ("procedural" compliance), the adoption of required laws, rules, and regulations ("*de jure*" compliance), and compliance at the level of implementation and enforcement ("*practical*" compliance) (Kent 2007: 25–27). This raises the vexing issue of how we assess a country's overall compliance when it is compliant in one area but not another. In this study, the emphasis is on China's "*practical*" compliance since audiences, such as international organizations, states, and nongovernment organizations, typically concern themselves most with how states are fulfilling their obligations *in practice* (Simmons 1998: 78).

A possible method for assessing if there is *significant* divergence looks at how parties react to another party's putatively noncompliant behavior. Namely, if parties overlook a deviation, then reasonable adherence is assumed (Chayes and Chayes 1993). The problem with such a standard, however, is that acquiescence can have multiple meanings. For instance, many European states tolerated Libyan dictator Qaddafi's human rights abuses due to economic and security considerations. It would be ludicrous to say their acceptance of Qaddafi reflected a belief the latter reasonably adhered to human rights laws. A further problem with this metric is that another state or group of states may label another party's behavior noncompliant because of ulterior motives or the push of domestic politics rather than because a third party has genuinely failed to meet its obligations.³ One can focus specifically on formal (filed) complaints as evidence of unacceptable noncompliance, but this would only cover a small segment of non-compliant behaviors such as time, cost, domestic politics, and various countervailing factors limit the filing of formal complaints (Rickard 2010).

To recognize the limits of these schemes is not to dismiss them entirely given the potential of "external" assessments (Young 2011: 106). However, such techniques need to be supplemented with more objective measures. Unfortunately, while it is easy to measure objectively tariff cuts, the elimination of quotas, or reductions in capital requirements for the formation of banks, it can be quite difficult to measure the degree to which markets have been opened, the conformity of technical standards to international norms, the adequacy of penalties for intellectual property rights (IPR) violations, the existence of nontariff barriers, and the extent to which there is national treatment. Moreover, even where objective measurement is relatively easy, "trade policies are implemented on thousands of products, and in the absence of authoritative rulings, it is hard to know which

policies are consistent with treaty obligations and which are not" (Simmons 2010: 284).

This study proposes five basic metrics for measuring noncompliance. The first is the scale or size of a violation quantified in financial terms. For instance, \$1 billion of illegal subsidies, IPR accord transgressions, or disallowed tariff rate quota policies would be seen as indicating greater noncompliance than \$100 million of such problematic behaviors (Lee 2011: 20–25). The second is the breadth of noncompliance behaviors. Thus, to illustrate, a sector with dozens of noncompliant behaviors would be viewed as one with a greater degree of noncompliance than one with six. The third is the extent of pressure required to change behavior. The degree of pressure could range from bilateral discussions/threats to WTO consultations, a WTO case, WTO remediation, or to WTO sanctions. The fourth is the duration of continued noncompliance after pressure is applied (Lee 2011: 8–9, 15–17). The idea being that the longer the length of time a country is willing to persist in its violation of an obligation the greater the degree of noncompliance. The final metric is external assessments of the degree of noncompliance.

TRIMs

Generally speaking, TRIMs prohibits China from imposing investment laws and administrative rulings that discriminate against "imports" (United States Trade Representative [USTR] 2001). This has diverse meanings in practice. One is that China cannot impose "local content requirements" requiring foreign MNCs to use a certain quantity or percentage of domestic inputs. Similarly, it cannot institute measures that mandate a certain amount of local production. A second is that it cannot obligate foreign MNCs to meet "balancing" requirements. An example would be a requirement that a foreign MNC's imports/foreign currency outflows (for example, remittances) be offset by a certain quantity or value of exports/foreign currency earnings. A third is that it cannot "condition importation or investment approvals ... on requirements, such as technology transfer and offsets," with technology transfer not only including tangible goods, but proprietary business knowledge (USTR 2010b: 67).

Studies make clear that China has met a variety of TRIMs commitments. For example, it has eliminated formal local content requirements. Yet, reports also reveal that China has continued to encourage foreign MNCs to share their technologies and operational knowledge. Moreover, Chinese officials still consider "balancing" and local content usage when deciding whether to approve investments and recommend loans (USTR 2010b: 67). Foreign governments opine that China continues to develop discriminatory industrial policies, too. For instance, the USTR points to a 2006 State Council policy pertaining to the revitalization of the industrial machinery manufacturing industries. This policy specifically called for initiatives to enhance the competitive position of domestic firms engaged in 16 types of equipment manufacturing like power generation, aircraft engines, and textiles. These initiatives included preferential import duties on

parts needed for R&D, encouragement for the procurement of domestically manufactured technical equipment, and a dedicated financing facility (USTR 2009: 66).

China's aggressiveness in promoting its steel industry has been one issue sparking deep concern among foreign MNCs and governments attentive to China's conformity with TRIMs. In contravention of TRIMs rules against technology transfer requirements, China's July 2005 Steel and Iron Industry Development Policy mandated that foreign investors in the steel sector not only had to partner with a Chinese firm, but also had to possess proprietary technology or intellectual property in the processing of steel. Furthermore, in apparent violation of TRIMs local content provisions, the 2005 policy backed government financial support for steel and iron projects utilizing newly produced domestic equipment and the use of domestically produced steel manufacturing equipment and domestic technologies (Haley 2009; USTR 2010b: 67). Many countries, such as the United States, have bilaterally confronted China about these issues. Canada, Mexico, the European Union (EU), Japan, and the United States collectively have used the WTO to raise concerns with and pressure China to drop its steel subsidies and discriminatory measures, albeit without success (USTR 2010b: 67).

China's adherence to TRIMs is not the WTO issue area that receives the most attention. Aside from its compliance with broad WTO principles like nondiscrimination and national treatment, China's record with respect to its TRIPS and Technical Barrier to Trade (TBT) obligations seems to merit that honor, most likely because they affect so many firms and industries (United States–China Business Council [USCBC] 2005, 2006, 2007). However, China's noncompliance with TRIMs—for example, "encouragement" for the use of local content—is pervasive and often highlighted as yet another sign of China's continuing failure to embrace WTO core principles and to meet specific WTO requirements (U.S.–China Economic and Security Review Commission [USCC] 2009: 64–65). In addition, foreign companies and foreign business/industrial associations routinely highlight China's behavior vis-à-vis its TRIMs requirements—implicit pressures for technology transfer—as one of the most daunting challenges they face in China (USCC 2009: 66; USCC 2010: 20).

According to one set of researchers (e.g., Miller and Miller 2007), as a result of restrictions on data access (for example, to reports of TRIMs problems to U.S. government agencies), it is extremely difficult to quantify the degree of divergence between Chinese policies and China's TRIMs obligation. What can be said with some degree of confidence, albeit vaguely, is that TRIMs compliance is an issue across numerous industries. Furthermore, the divergence seems to be "wider ranging"—meaning involving a greater number of noncompliant policies—in the case of so-called "pillar" or "strategic industries." Finally, Beijing often is unwilling to modify its policies in the face of external pressure unless that pressure intensifies beyond simple foreign government lobbying.

The alternative energy sector and TRIMs

Around 2005, China's rising energy consumption and quest for greater energy independence, coupled with the political, economic, and environmental complications surrounding its pursuit of more fossil fuels led Beijing to seek to reduce the country's energy consumption and to increase the supply of energy from greener sources. To fuel the alternative energy sector and its upgrading, Beijing instituted a number of measures including technology transfer requirements, directed research funding, producer and user subsidies, special tax policies, market access barriers, local content requirements, and certification and connection standards. Partly as a result of these policies, China became the world's largest market for wind power installation, the world's largest photovoltaic producer, and one of the world's largest wind turbine producers (USCBC 2006: 3-4; Cherni and Kentish 2007; Lema and Ruby 2007; Meng and Liu 2012; European Chamber of Commerce in China n.d.: 34-37).

It is only recently that the alternative energy sector has become a China-WTO compliance issue for the international community. This is not surprising given that China's accession negotiations took place at a time when other issues, such as weapons proliferation, the Balkans, and Taiwan, were deemed far more pressing than China-related energy issues. Moreover, as just noted, China's alternative energy sector did not blossom until many years after China had become a WTO member. Now, however, numerous countries see vast opportunities in "green tech." It is viewed as an engine of job creation, a way to move toward greater energy independence, a source of increased exports/product sales, and, of course, a way to attack the problem of global climate change (Bay Area Council Economic Institute 2010; USTR 2010a: 183-188, 199-201; Hook and Crooks 2011). Thus, the fit (or lack thereof) between China's alternative energy policies and its WTO commitments has assumed new salience (USCBC 2010: 51).

Rising external attention to Chinese alternative energy sector policies was witnessed in 2010 when the USTR requested WTO consultations in regards to China's "Special Fund for Wind Power Manufacturing" (2008), which provided subsidies to Chinese producers of wind turbines. The United States argued that Chinese subsidies contravened TRIMs because they were "contingent on Chinese wind power manufacturers using parts and components made in China." The request for consultations came after U.S. successes in 2009 and 2010 in getting Beijing to, respectively, eliminate some subsidy programs and drop its requirement that foreign companies have prior experience providing equipment to large-scale wind projects to be considered for new wind power projects (USTR 2009; USTR 2009: 20; USTR 2010a; USTR 2010b: 20, 41-42, 44-45). Less than seven months after the United States raised the aforementioned WTO consultation request, Beijing agreed to stop its wind power subsidies (BBC News 2011).

Yet tensions over China's satisfaction of its WTO and other obligations in regards to green tech goods refused to die. In November 2011, the United States International Trade Commission commenced an investigation of Chinese

dumping of solar cells. Four months later, the United States imposed countervailing duties (CVDs) on various Chinese solar panel cell manufacturers because of continuing Chinese government subsidies to such firms. Following this, in May 2012, the United States imposed antidumping tariffs on Chinese solar panels (Beattie 2011; Politi and Lerner 2012; Xie and Li 2012). Not long thereafter the Chinese government responded by requesting WTO consultations in a challenge to the CVDs and antidumping tariffs the United States imposed on Chinese alternative energy and a slew of other Chinese products (Mufson 2012).

For foreign governments and companies, the central problem is that China continues to embrace policies, such as forced technology transfers and product testing barriers that contravene its TRIMs commitments (Louche *et al.* 2007: 34-36, 65-66). Other concerns include a 2010 measure that allows only majority-owned Chinese firms to participate in China's offshore wind market (USCBC 2010). This policy is largely a national treatment matter, but raises local content and technology transfer issues, since foreign firms have to partner with Chinese firms to participate in the market. Moreover, while it has not instituted explicit local content requirement, neither has China's National Development and Reform Commission (NDRC) given wind turbine procurement contracts to foreign MNCs (USCC 2011: 202).

Looking at the above, the evidence is clear that Beijing has adopted numerous green tech initiatives that contravene its TRIMs commitments or raise questions about its fulfillment of its TRIMs obligations. The scale of China's divergence, though, is not so easy to quantify. This is partly because of the opaqueness of Chinese government programs and the unwillingness of other governments to release information. A bigger problem is that reports on Beijing's green tech expenditures often do not distinguish general from industry specific alternative energy subsidies, or separate out programs (for example, transmission lines), which are not purely green tech spending. As well, such reports often fail to specify which industry subsidies are compliant versus noncompliant (National Renewable Energy Laboratory 2004; China Daily 2011; and Hays n.d.). Even so, it appears China's terminated TRIMs noncompliant wind power turbine subsidies ran between \$480 million and \$1.12 billion (Clark and Hook 2011; Hook 2011; and Liu 2011). One Shanghai-based Chinese politico-economy expert with whom I spoke estimated that subsidies for the tech sector ran in the billions (July 19, 2011).

To summarize, the breadth of potentially TRIMs noncompliant measures Beijing has adopted to bolster green tech is vast. It includes financial support for R&D and the production of alternative energy goods, value-added tax (VAT) rebates, low-interest (tied) loans, discriminatory government procurement, and selective regulatory action all aimed at bolstering the amount of energy China derives from biofuels, biomass, hydropower, solar, and wind (National Renewable Energy Laboratory 2004; Study 11: pp. 2, 16, 20-21, 34-36, 65-66; interview with US government official July 20, 2011). The range and scale of China's support for green tech together indicate a moderate to high degree of divergence from TRIMs. This assessment is confirmed by the fact that while it took a

relatively low amount of pressure to bring about the quick termination of China's wind power subsidies, Washington eventually had to adopt more aggressive measures against Chinese solar power subsidies, which nonetheless have not ended.⁴

The automobile sector and TRIMs

The development of an auto sector that can compete with leading global firms has long been a top priority for Chinese decision makers. Policymakers have been motivated not only by nationalistic sentiments, but also by the lure of the auto sector's "extensive backward linkages" with industries like tires, bearings, glass, plastics, steel, and engine parts. In this vein, China embraced numerous policies designed to bolster the domestic automobile and automobile parts sectors. For instance, it limited licenses for imports, imposed very high car tariffs, and prevented foreign investors from holding majority stakes in joint ventures. It also restricted access to foreign currency and instituted strong localization requirements. Finally, it severely limited the kinds of auto-related businesses (for example, distribution, retailing, and finance) in which foreign auto firms could engage (American Chamber of Commerce in Shanghai 2002: 4, 18–21; Thun 2007, 8–10; Tang 2009).

From the get-go, China's auto sector policies were a WTO issue. China's WTO accords required it to significantly cut auto and auto parts tariffs and to allow foreign firms to open distribution networks. Moreover, China undertook special TRIMs obligations relating to the auto sector. A major one was to agree to revise its auto sector policy to make it compatible with WTO rules and norms. As well, it had to eliminate all local content, technology transfer, and balancing requirements (World Trade Organization [WTO] 2006: xiv; USTR 2009: 68; USTR 2010b: 69–70). However, there were reasons to doubt Beijing's willingness and ability to liberalize the auto sector given its history of protectionism and the domestic sector's weaknesses, including overcapacity, fragmentation, poor quality production, low R&D, localism, and muddled regulatory responsibilities (Dyer 2006: 18; Dyer 2007: 8; Thun 2007: 23–24; KPMG Huazhen 2009: 11, 17–18; Tang 2009). As one analyst put it, "there are strong indications that the Chinese government is seeking to interpret the new regulations to *maximum advantage*" (Thun 2007:10, emphasis added).

Illustrating this, in mid-2003, Beijing circulated a draft auto sector policy that discouraged the importation of auto parts, sought to restrict imports of complete knocked-down auto kits, and set targets encouraging the use of domestic technology. Although Brussels, Tokyo, and Washington voiced their opposition to the draft policy through bilateral meetings with Chinese leaders and in multilateral venues, such as the WTO Committees and Councils, China still went forward with its policy in 2004. This policy explicitly discouraged the importation of auto parts and championed the use of domestic technology. On top of this, it required new auto and auto engine plants to include substantial investment in R&D facilities (Tang 2009: 22–23; USCBC 2009: 65; USTR 2009: 68).

Foreign governments particularly were excised by Beijing's 2005 policy relating to the importation of parts for whole cars. In essence, these measures created a car part valuation system that resulted in the application of the higher tariffs used for a complete, imported automobile on imported automobile parts rather than the application of the (lower) tariff that was supposed to be assessed on imported parts. Beyond this, the 2005 policy incorporated a prohibited local content requirement by identifying certain car parts and assemblies that had to be manufactured locally in order to avoid high tariffs (USTR 2009: 68). Bilateral dialogues with China as well as U.S.-led pressure in the WTO failed to induce a meaningful revision in China's policy. This ultimately led the United States, Canada, EU, Japan, and others to file a WTO case in 2006. Two years later, the WTO ruled against China, with China ultimately eliminating its problematic rule (*People's Daily Online* 2006; *BBC News* 2008; *Economist* 2008; Williams 2008: 2; USCBC 2009: 65; USTR 2009: 68).

However, concerns about the congruence between China's auto sector policies and TRIMs did not end with the resolution of the auto parts case. In early 2009, China put forth a stimulus plan for the auto sector. This plan *inter alia* lowered the sales tax on vehicles with small engines (which favored domestic firms), created a \$1.5 billion fund to promote innovation, and offered subsidies for industry consolidation and the creation of export bases (Haley 2009; Li 2009; USTR 2009: 68). Some of the plan's components raised TRIMs issues and were later withdrawn, but China's other auto sector policies continued to raise concern (*Economist* 2011). For instance, news articles reveal that China has been forcing foreign auto MNCs to develop local car brands if they want to construct new factories or increase their capacity in China (Reed and Waldmeir 2011; Zhu 2011). Such measures appear to violate *inter alia* TRIMs prohibitions against local content and technology transfer requirements.

In the realm of new energy vehicles (NEVs), China is preparing long-term plans geared toward making China a leader in battery-powered cars and hybrids that raise TRIMs compliance issues because they require technology transfer (USCC 2010: 207; Tian 2011). Specifically, China has drafted regulations relating to "the development, production, and sale of NEVs ... that require foreign auto companies to share their intellectual property for NEV technologies with their" JV partners in order to receive a certification that affords the JV "production and distribution licenses for NEVs" (USCBC 2010: 6–7). Finally, foreign audiences fret about the congruence between TRIMs and China's \$3 billion of planned subsidies for NEV pilot projects (Bay Area Council Economic Institute 2010: 25).

Data about the financial scale of China's deviations from TRIMs in the realm of autos is sparse (Christoff 2009). Still, estimates suggest it runs at least \$1.4 to \$4.6 billion (Thun 2007: 14–15). If even one-third of China's planned NEV subsidies are TRIMs noncompliant, then the scale of China's deviations in the auto sector in total easily could hit \$3 billion and perhaps reach as high as \$6 billion. The preceding discussion shows the breadth of China's TRIMs divergent auto sector policies is large. Not only do they relate to auto and auto parts, but

NEVs and auto components. Beyond this, problematic local content and technology transfer requirements are numerous (Thun 2007: 2–3, 16–17, 45; KPMG Huazhen 2009: 4, 10–11; Interviews with U.S. government and Chinese politico-economy experts). In terms of pressure, the external community has had to use every degree of pressure, including WTO consultations and cases, to get China to end its TRIMs noncompliant auto measures. Bringing China into fulfillment of its TRIMs terms also has taken considerable time, and in some cases China remains noncompliant. The overall conclusion that follows then is that there is a high degree of noncompliance in the case of the auto sector.

The semiconductors and TRIMs

China's 11th Five Year program and 15-year National Program for Long and Medium Term Scientific and Technological Development placed great stress on improving China's semiconductor sector, which Chinese policymakers have recognized as a vital foundation for the broader information technology sector, a way to escape costly foreign technology licenses, and a way to become more independent of foreign suppliers and IP (Lewis 2007; Serger and Breidne 2007: 146–147; Ure 2007: 2, 11–12, 20). To further the domestic chip industry, China has spent billions on R&D, manufacturing and other plants, and preferential government procurement. It has also tried to build up relevant capital markets and to attract foreign firms with tax breaks, special zones, and special loans (United States Government Accountability Office 2006: 19–20; Serger and Breidne 2007: 139–144, 157; Ure 2007: 15, 20–21, 25). China is now one of the world's largest chip producers and consumers and has experienced considerable growth in chip manufacturing, testing and assembly, and design (Ure 2007: 15).

Interestingly, Chinese government measures regarding semiconductors were one of the first Chinese TRIMs compliance issues to draw high-profile attention. Specifically, in 2004, Beijing implemented a VAT rebate that returned a substantial portion of a 17 percent semiconductor VAT when chips were locally produced or imported chips were based on design work done in China (USTR 2006: 40). Since Beijing's initiative favored local content and thus violated TRIMs, Washington lobbied Beijing heavily to change it, but failed to evoke any policy change. The United States later worked with the EU, Japan, and Mexico to pressure China by using WTO consultations. Consultations led China to stop the problematic policy and ultimately repeal it (USTR 2006: 40).

Another Chinese semiconductor policy that raised concerns with respect to TRIMs was its WLAN (Wireless Local Area Networks) Authentication and Privacy Infrastructure or WAPI policy. China's WAPI policy essentially involved Beijing championing WAPI as the standard for encryption over WLAN or Wi-Fi networks. At the time this occurred, the WAPI policy was not just a standards/TBT agreement issue, but also a forced technology transfer issue and a mandated local production issue. This is because the policy mandated that foreign firms work with a select number of Chinese companies, many competitors, to ensure their products conformed to WAPI. Of note, Beijing would only

provide the algorithm to Chinese firms and would not let it leave the country. In the end, China indefinitely suspended the implementation of WAPI in the face of substantial U.S. pressure (Lee and Oh 2006; USTR 2006: 47–48; USCBC 2007: 6–7; USTR 2009: 50–51; USTR 2010b: 50–51).

In regards to scale, the degree of China's TRIMs divergence relating to the semiconductor sector seems small since the cost of China's nontariff barriers for the *entire* information and communications technology (ICT) sector totals \$1.5 billion (Ure 2007: 29). While Beijing is trying to bolster the sector by offering preferential loans and rich support for R&D, developing local technical standards, and loosely enforcing IPR, the number of TRIMs noncompliant measures noted above are limited in number. Still there are some concerns about Chinese demands for technology transfers and domestic production (Ure 2007: 11–12, 25–28, 61; USCBC 2009: 70–71; Interview with U.S. government representative). In terms of pressure, even recognizing the U.S. exerted pressure regarding WAPI, it still must be acknowledged that nothing more than WTO consultations were needed to end China's offending policies. Moreover, time frames for problem resolution were quite short in every instance. In sum, then, China's divergences from TRIMs seem the least intense of the sectors studied herein. Public statements and interviews conducted for this study do not modify this assessment.

Assessing explanations of China's TRIMs compliance

Some degree of Chinese WTO noncompliance should be expected. After all, China accepted "a set of sweeping reforms that required it to lower trade barriers in virtually every sector" (USTR 2006: 3). However, this hardly explains why China has done better with respect to some WTO agreements than others, why it has succeeded in addressing particular aspects of some accords but not others, or why it has changed its policies in some cases but not others. This section probes how five frameworks fare in illuminating variation in China's TRIMs compliance levels. These frameworks are: (1) ideology/industrial policy; (2) socialization/learning; (3) interest groups; (4) external pressure; and (5) leader cost-benefit calculations.

Economic ideology/industrial policy

Contemporary analysts have repeatedly observed that the Chinese polity is becoming less authoritarian with more debate about agendas, greater sources of policy information, increased bargaining, more extensive institutionalization, and more actors involved in the policy implementation process (Glaser and Medeiros 2007; Sutter 2008: 53–90; Jakobson and Knox 2010). Nonetheless, the consensus, even among those who report a widening of the foreign policymaking space in China, is that the country fundamentally remains a top down polity with leading officials having a powerful, essentially decisive, role in policy problem identification, program development, and policy implementation

(Mertha and Zeng 2005; Pearson 2005; Bender 2006; Luo and Zhang 2010; Jakobson and Knox 2010). Given this, it is clear that one must consider the economic thinking of China's central government as well as the policies it promulgates for specific industrial sectors when thinking about the forces shaping China's fulfillment (or lack thereof) of its TRIMs obligations.

In terms of economic ideology, analysts have pointed to China's "socialist culture" and the country's intense desire to move up the value-added chain as noteworthy explanatory variables. Regarding the former, one study argues that China's "socialist culture" is the wellspring of China's divergences from its WTO obligations since it encourages a preference for local technology and production, maximal exports, and limits on foreign MNC market access (Miller and Miller 2007: 26–27; Liew 2005; Kerr 2007). The USTR remarks that China's problematic WTO behaviors result from "excessive government intervention" which, in turn, reflects China's "unfinished transition from a centrally planned economy" (USTR 2006: 3). With respect to the latter, WTO Trade Policy Reviews (TPRs) and my interviewees make clear Beijing's intense desire to move the country up the value-added chain (World Trade Organization 2006: xiii–xiv; Serger and Breidne 2007; Jakobson 2007b; Barboza 2008; O'Brien 2010).⁵ China's 2011 Foreign Direct Investment Catalog, which replaced an earlier catalog put forth in 2007, only confirms China's quest to move up the value-added chain, as it puts stress on advanced industries such as aerospace/aviation, new materials, and clean energy (Ding 2011).

Influenced by ideology, the Japanese and South Korean experience, and political imperatives, Beijing has long championed industrial policies to develop sectors such as shipping and telecommunications (Harwitt 2007). To date, industrial policy continues to figure in Chinese economic strategies as a way to promote exports, develop manufacturing, grow the high-tech sector, create jobs, and enhance the country's status (USCBC 2009: 56–57). These policies are set forth in China's Five-Year plans and the aforementioned Foreign Direct Investment Catalog. Of note, China's 10th and 11th Five-Year plans label autos and auto parts, and semiconductor design and manufacture pillar or strategic industries. The 11th Five-Year plan and associated documents give newfound attention to green tech (AmCham–China 2010: 38; USTR 2010b: 68). To promote pillar industries, China has adopted "tax incentives, government procurement regulations, standards ... subsidies, and increased protection" (AmCham–China 2010: 218).

Previous sections detailed China's industrial policies relating to the alternative energy, car and car parts, and semiconductor sectors. To reiterate, China's support for the alternative energy sector includes technology transfer requirements, special tax policies, and local content demands (USCBC 2006: 3–4). For the auto sector, China's policy has encouraged foreign direct investment (FDI) in the aim of obtaining technology transfer, supported outward FDI by Chinese auto and auto parts companies that might yield technology, provided subsidies, supplied preferential credits, and afforded access to discounted inputs (Tang 2009). To support the chip sector, China has been bolstering R&D, giving

increased support to education, selectively enforcing IPR, advocating parochial technical standards, and providing billions for specialty chip design, chip equipment development, and innovative chip foundries (Jakobson 2007a; Kroeber 2007; Simon *et al.* 2007; Serger and Breidne 2007; Interview with high-ranking official of leading American semiconductor firm April 4, 2011).

It is likely that economic ideology and industrial policy explain some or perhaps even a fair amount of China's TRIMs noncompliant policies relating to the alternative energy, auto and auto parts, and semiconductor sectors. In the final analysis, however, such "variables" fail to illuminate variation in Chinese behavior. After all, as chronicled above, Beijing's policies for each sector vary in their amounts, breadth, and duration even though Beijing wants to move up the value-added chain in all the sectors analyzed herein and each sector is a pillar industry.⁶ One might counter that variation exists because industrial policies vary in their importance, however such an argument is hollow in the absence of a system for ranking such policies.

Socialization/Learning

Many students of China's participation in international institutions favor arguments drawing upon theories of socialization and learning (Kent 2007; Johnston 2008; Contessi 2010). One reason is a belief that China's participation in such institutions restructures the Chinese polity in a manner that supports compliance (Kim 1999). Clearly, the WTO has led to some restructuring in the case of China, which after its accession, created numerous councils on WTO affairs to undertake studies, provide training, and disseminate information (*United States–China Digest* 2002a; *Xinhua* 2002). Others have taken the perspective that the WTO has socialized China through the incorporation of its principles and terms into the standard operating procedures of Chinese ministries and also has caused evolution in the beliefs of Chinese elites (Hempson-Jones 2005; Kent 2007: 234–239).

Learning has intrinsic appeal as an explanation of China's WTO compliance given the extensiveness and duration of foreign efforts to promote Chinese learning about the norms and specifics of the WTO (Zhang 2003). Literally from the get-go, the United States has worked to "teach" China about WTO TRIPS and standards/TBT provisions through meetings, workshops, and roundtables. It also has been aggressive about training, preparing multipart video conferences, creating online courses, furnishing WTO-relevant publications, translating materials, and giving seed money to China for capacity building programs. The United States has even gone so far as to fund the creation of a private sector standards office in Beijing (*United States–China Digest* 2002a; USTR 2003: 4; USTR 2004: 44; USTR 2006: 46–47).

While socialization and learning processes indeed may have induced China to comply with a variety of WTO norms and principles, arguments emphasizing them suffer from several weaknesses. First, if socialization and learning arguments had strong explanatory power, we would expect to see China's

compliance improve over time. This is not what has happened, though, and, in fact, external observers see increasing divergence over time in some areas. Second, we would expect to see fewer or no Chinese departures where “teaching” was more aggressive and incessant, but we see no such pattern. Analysts familiar with China’s spotty compliance with its WTO TRIPS commitments would laugh at the notion that socialization and learning are sufficient to make China comply with its WTO commitments. Third, learning explanations assume, debatably, that China will be socialized or taught to comply rather than to shy away from its obligations.

Interest group politics

The pluralization of Chinese policymaking has resulted in scholars giving greater attention to interest groups and their possible effect on Chinese foreign economic policymaking (Lee and Oh 2006; Zeng 2007; Jakobson and Knox 2010). As of yet, however, there are no broad studies of the relationship between interest groups and China’s general adherence to its WTO agreements, much less its conformity with its WTO TRIMs commitments. Neither are there comparative analyses of China’s WTO compliance record that employ an interest group framework to conduct cross-sectoral analysis.

This said, there is an interest-group argument pertaining to the semiconductor sector that contends that China backed off its TRIMs noncompliant WAPI policy because various Chinese businesses and ministries were unenthusiastic about it (Kennedy 2006). Such an argument ignores the fact, however, that we must analyze the Chinese central government and its economic ideology/industrial policy to understand the emergence of the WAPI policy and its continued persistence. In addition, we must pay attention to external pressure to grasp why Beijing backed off its questionable policy (Bell and Feng 2007). What these two points indicate is that an interest group argument has limits as a stand-alone argument.

There are other reasons to doubt the usefulness of an interest group framework to illuminate the three cases herein. With respect to the alternative energy sector, there are some leading state-owned enterprises (SOEs), but the reality is that the sector is highly fragmented overall, that channels of influence are between firms and provincial governments rather than firms and Beijing, and that the NDRC has a dominant role in energy and environmental policymaking (Louche *et al.* 2007; European Chamber of Commerce in China n.d.: 35; Interview with U.S. government official).⁷ Turning to the auto sector, there is reason to believe auto-related interest groups have more influence given their size, high profile, long history, and ties with leaders, etc. (Interview with U.S. government official). Even so, there is extreme fragmentation in the auto and auto parts sectors and links between auto and auto parts firms often are with subnational governments rather than Beijing (Thun 2007: 9, 24–25; KPMG Huazhen 2009: 3, 5–6). Finally, regarding the semiconductor sector, none of my interlocutors viewed Chinese semiconductor firms as influential players and indeed one of the

interviewees observed that it is often foreign chip MNCs that influence central government policy through lower government levels.

External pressure

There is no explicit “external pressure” school in respect to China’s compliance with the WTO generally or in regards to TRIMs specifically. However, some scholars have highlighted the importance of external pressure in facilitating Chinese adherence to its obligations (Chan 2004). Washington regularly touts its efforts to improve Beijing’s compliance through a mix of tactics including bilateral dialogues, WTO committees, and, at the extreme, WTO cases. The most recent *2010 USTR Report* specifically notes that the United States engaged China on WTO compliance issues in 2010 through the United States–China Joint Commission on Commerce and Trade, the United States–China Strategic and Economic Dialogue, WTO TPRs, and WTO case filings (USTR 2010b: 17–21). On top of this, American business associations frequently highlight broad-ranging policy concerns as well as WTO issues relating to specific industries.

In the alternative energy sector, we saw that China revamped a variety of questionable policies following dialogues with the United States. Turning to the auto sector, we further witnessed China adjusting or eliminating diverse problematic measures in the face of external pressure, albeit more intense pressure in the form of a WTO case. Regarding the semiconductor industry, Beijing eliminated one TRIMs-offending policy after it reached the WTO consultation phase and significantly modified another under intense U.S. pressure (Bell and Feng 2007). However, there were many aspects of China’s alternative energy, auto and auto parts, and semiconductor industry policies that continued to depart from the principles and terms of TRIMs despite external pressure.

The external pressure approach to explaining China’s compliance with its TRIMs commitments has diverse shortcomings. One of the most glaring is that it cannot illuminate why China departs from its obligations in the first place. A second is that there does not seem to be a clear correlation between external leverage and China’s fulfillment of its TRIMs commitments. Certainly, external pressure relating to China’s TRIMs noncompliant semiconductor policies seems to illuminate why Beijing revised its policies in a way that made them more suitable to TRIMs requirements. Yet the application of significant pressure in regards to China’s automobile sector policies has not always yielded progress. Finally, an external pressure argument misses the fact that a suitable international and domestic context (see for example, the WAPI case) is needed for the effective exercise of external pressure.

Leader cost-benefit calculations

Chinese leaders want not only to increase their country’s wealth and power, but also to maintain their grip on power (Wang 2005). This means that they need to preserve their standing among key constituencies and the public. As far as the

WTO is concerned, this implies that Chinese policymakers need to maximize the gains and minimize the losses from the WTO. Potential economic gains include greater participation in global markets, increased competitiveness, reduced inefficiencies, greater wealth and technological prowess, and a role in one of the world's key institutions. Possible economic losses include rising unemployment, rising inequality, the shuttering of businesses, reduced opportunities for independent development, and increased economic interdependence. Conceivable political and security costs include an influx of foreign ideologies, foreign domination of the economy or key sectors, and reduced sovereignty (*Chinese News Digest* 2000; Cheng 2004).

In some respects, China's prospective post-WTO accession compliance costs had been pre-absorbed by the adjustments that the Chinese leadership pushed prior to 2001. These included huge cuts in tariffs, major reductions in nontariff barriers, price liberalization, the closure of mines and textile factories, and reductions in steel output (Lardy 2002: 22–39). Still, full adherence to China's WTO requirements raises the daunting prospects of immense job losses in sectors such as agriculture, banking, and autos and auto parts (Lardy 2002: 106). Moreover, it suggests an onslaught against Chinese firms in autos, banking, distribution, ICT, and insurance, with attendant adverse implications for employment, regional development, economic independence, technological capabilities, and national security (Lardy 2002: 106–113; USTR 2003: 15; Kanungo 2005). All-in-all, such considerations argue for slow or no compliance, absent strong countervailing gains.

The meaning of this for explaining China's embrace of its WTO TRIMs requirements generally and in the sectors under study is that compliance is more likely to take place when the benefits outweigh the costs and these benefits would not otherwise be forthcoming. Similarly, Chinese leaders will be more willing to depart from their WTO TRIMs obligations when the benefits outweigh the costs.⁸ The kind of costs that might arise if China fails to fulfill its TRIMs commitments include foreign governments pressuring Beijing, foreign governments launching WTO disputes against China or retaliating against Chinese firms, and foreign MNCs shunning investment in China.

In green tech, Chinese leaders saw a way to attack the country's severe environmental pollution, mitigate its rising dependence on foreign energy, promote growth, move up the value-added chain, and create new export opportunities (Louche *et al.* 2007: 7, 13, 23–25, 32–33; European Chamber of Commerce in China n.d.: 34; Yue 2011; Interview with U.S. government official July 20, 2011; Interview with Chinese academic economist July 19, 2011). Compliance with TRIMs would encourage FDI that could bring in precious capital, technology, and operational expertise. But welcoming FDI risks potential dependence on foreign technologies, relegation to assembler status, and new-found competition for local firms (Louche *et al.* 2007: 2, 12–13, 19–20; Interview with Chinese academic economist July 19, 2011; Interview with Chinese politico-economist July 20, 2011). Noncompliance might deter foreign MNCs from investing in China, but this downside was limited given the attractiveness

of the China market and the boost that noncompliance could give to Chinese firms (Louche *et al.* 2007: 2, 13, 16–17; Interview with U.S. government official July 20, 2011; Hook 2011; Liu 2011). External pressure was to be expected if China did not meet its TRIMs terms, but this did not become a real risk until 2010 or so. In short, the limited gains of compliance, solid gains from noncompliance, and limited costs from noncompliance illuminate the degree of China's departures from TRIMs in alternative energy.

The auto sector presents a somewhat similar calculus, though the sector's backward linkages greatly magnified the potential benefits of noncompliance and costs of compliance. Clearly, compliance would bring in FDI, which supplied China with technology, much needed know-how, and jobs. However, the sense was that the "open door" strategy had failed with foreign auto firms dominant and Chinese firms stuck at the low end of the value-added chain (Thun 2007: 7–9, 23–29; KPMG Huazhen 2009: 12; Interview with Chinese academic economist July 20, 2011; Interview with U.S. government official July 20, 2011; Liang and Shao 2011). Put differently, the gains from compliance were limited while the potential gains from noncompliance were high, especially as Chinese auto firm competencies were improving (KPMG Huazhen 2009: 13; Liang and Shao 2011). Noncompliance risked foreign auto MNC pressure, but the latter would hardly shun China's auto market (Thun 2007: 42; *China Economic Review* 2011). It was only when foreign government pressures hit new heights (for example, the WTO auto parts case) that China proved willing to back down.

Relatively speaking, the semiconductor case has seen the greatest degree of TRIMs compliance. This is somewhat counterintuitive given the importance of chips to other high-tech sectors (which China recognizes) and the national security implications of semiconductors (Interview with U.S. government official July 20, 2011). Additionally, foreign chip MNCs continue to invest heavily in China—building foundries, supporting R&D, and expanding test and assembly operations (Interview with high-ranking official of leading American semiconductor firm April 4, 2011). However, China no longer needs to act aggressively because of the progress in its semiconductor capabilities as evidenced by the ongoing growth of its chip fabrication, design, and assembly and testing activities (Ure 2007: 13–15, 24; USCC 2010: 73, 75, 77). Moreover, the chip sector, while important, does not have the same perceived panoply of benefits that the alternative energy and auto sectors do. In any event, it must be admitted that external pressure partially mitigated China's deviations from TRIMs in regards to semiconductors.

In sum, a leader cost-benefit framework has appeal given its ability to illuminate China's overall performance regarding TRIMs and variation in China's compliance with TRIMs in regards to the alternative energy, auto, and semiconductor sectors studied herein. The limits of a leader cost-benefit calculation approach are threefold. First, it is difficult to use predictively unless one has a good sense *a priori* of how leaders assess the costs and benefits of compliance and the costs and benefits of noncompliance. Second, in instances where decision making is pluralistic, it can be quite difficult to determine *whose* costs and

benefit calculations are the most consequential. Third, the weighing of costs and benefits must often be done in a relatively "soft" way because of the complexities of obtaining hard, numeric values for the various costs and benefits that must be studied.

Conclusion

While it would be an exaggeration to claim China has fulfilled all its WTO commitments, likewise it would be a falsehood to label China a renegade in regard to the WTO (*China Daily* 2010). In the WTO *qua* international organization, it is largely a status quo player and plays according to the rules of the game (Pearson 2006). It has made "major changes," far more than many other developed and developing countries. And "its trade regime has been increasingly liberalized and structural reforms are ongoing to introduce greater competition ... direct intervention by the Government in the economy [also] has declined." Still, it actively uses "indirect measures ... to meet industrial policy goals" (WTO 2006: 60). These include local content requirements, parochial technical standards, weak IPR enforcement, strong administrative backing for Chinese firms, and restrictions on market access.

This analysis has focused on China's general fulfillment of its WTO TRIMs terms and its adherence to TRIMs in regards to the alternative energy, automobile and automobile parts, and semiconductor sectors. It showed that there are problems with China's compliance patterns, though these vary in scale, breadth, and ease of rectification. More importantly, it considered the usefulness of five analytical frameworks—economic policy/industrial policy, socialization/learning, external pressure, interest groups, and leader cost-benefit calculation—for understanding China's compliance behavior in the three areas studied herein. The leader cost-benefit framework fares best in illuminating the cross-sectoral variation discussed herein (Mertha and Zeng 2005).

Going forward, it would be fruitful to apply the framework advanced herein to other TRIMs sectors as well as other WTO agreements like TRIPS, TBT, and SCM. As well, it would be useful to investigate how China's performance in the sectors studied herein stands up against the performance of other countries, such as Brazil, South Korea, or Malaysia, which have ambitions in the alternative energy, auto, and semiconductor sectors. Such research would limit the risk of overgeneralization about China or China and TRIMs by providing comparative benchmarks for judging China's WTO performance. Future studies also could contemplate how beneficial China's adherence to TRIMs is for China, for other countries, or the entire WTO trading system.

In terms of its theoretical contribution, this analysis calls into question the ability of international institutions to transform the behavior of countries like China through socialization or learning. This is not to say there have been no changes or no significant changes, but that the internalization of norms, practices, and rules has a ways to go (Zhang 2003: 700, 709). This study also challenges those advocating external stimuli as a determinative influence on Chinese

foreign economic policy while concurrently challenging those who see it as a product of domestic groups. In terms of policy, my analysis suggests that policy-makers trying to bring Chinese policy into greater conformity with its WTO requirements need to think about how they can help China maximize the benefits of compliance, minimize the costs of compliance, maximize the costs of non-compliance, and minimize the benefits of noncompliance.

China's accession to the WTO was a moment that many eagerly anticipated and others dreaded. Ten years after China joined the WTO, both the optimists and pessimists have found some validation for their positions. This study has revealed that there are problems with China's compliance with its TRIMs obligations in areas such as alternative energy, automobiles, and semiconductors, but that there also has been progress in China's adherence to some of its TRIMs requirements. The tenth anniversary of China's membership may not be an unvarnished success, but this study shows how the international community can influence things to make future anniversaries brighter.

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Notes

- 1 TRIMs merits investigation because it is one of the WTO agreements generating the most attention from governments and foreign multinational corporations (MNCs), is closely linked to other WTO agreements (such as the Subsidies and Countervailing Measures (SCM) Agreement), and trade norms (such as nondiscrimination), and has significant politico-economic ramifications given the number of foreign MNCs operating in and competing with Chinese firms. I focus on the alternative energy, automobile, and semiconductor sectors because of their importance, the availability of data, and the fact that these issue areas can be studied across space and time.
- 2 The second section below advances some metrics for assessing China's general TRIMs compliance and variation across TRIMs sectors. As noted in the introduction to this book, understanding the extent to which China is meeting its WTO obligations and the reasons for its compliance/noncompliance are two of this volume's motivating research questions.
- 3 Yet another problem is the obvious one that separate parties may have differing assessments in which case it needs to be determined how to aggregate divergent views.
- 4 Neither the public record nor my interviewees offered statements that would suggest a need for refinements of this assessment.
- 5 As these and other reports make clear, China's desire to progress up the value-added chain is long-standing, as evidenced by diverse facilitative initiatives and the removal of incentives for low-value-added production and reflects a mix of economic (higher profit margins, reduced trade dependence, increased wages and employment), environmental (reduced raw material requirements and less pollution), national security, prestige, and social considerations.

- 6 As my U.S. government interlocutor observed, even though five-year plans and FDI catalogues are useful starting points, it needs to be seen what actually is being done and it needs to be recognized that implementation often does not mirror the surface unity suggested by a national five-year plan or official FDI catalogue.
- 7 One Chinese academic economist based in Shanghai observed that just because a firm is an SOE does not mean it is important or influential (July 19, 2011).
- 8 Elsewhere, I show that China's degree of concern about being shunned by foreign firms is partly a function of its need for those firms (Blanchard 2007).

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