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# US antidumping actions against China: the impact of China's entry into the World Trade Organization

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## ABSTRACT

This paper engages in a preliminary examination of US antidumping actions against China and addresses the conditions under which US industries are likely to initiate antidumping petitions against Chinese firms and obtain affirmative antidumping rulings from regulatory authorities. We conjecture that China's accession into the World Trade Organization (WTO) has not enhanced the prospect of Chinese firms successfully defending themselves against antidumping suits initiated by the US for three reasons. First, the rather dramatic expansion in US–China trade and, in particular, in US imports from China, has led US antidumping authorities to more aggressively pursue antidumping cases against China. Second, WTO membership has resulted in increasing US investment in China, thus undercutting the competitive advantage of some small domestic firms relative to those that have invested in the Chinese market, and leading the former to lobby more rigorously for protection from Chinese imports. Third, as China has agreed to the non-market economy (NME) designation in antidumping investigations for up to 15 years upon accession, its NME status has led US antidumping authorities to apply more stringent criteria in antidumping investigations. We support our argument with statistical analyses of the pattern of US antidumping initiation *and* adjudication against China.

## KEYWORDS

China; United States; antidumping; World Trade Organization (WTO); trade protectionism.

China formally became a member of the World Trade Organization (WTO) in November 2001. While China's decision to seek entry into the WTO was

driven in part by a desire to use the market liberalization mandated by the WTO to facilitate market access abroad or to deepen its domestic economic reform (Yin, 1997), it has also been argued that the Chinese leadership has sought to influence the emerging agenda of the international trading system and to constrain the unilateral exercise of power by the United States so as to more effectively deal with growing trade tensions between the two countries via its WTO membership (Alexandroff *et al.*, 2003; Cass *et al.*, 2003). As international institutions such as the WTO presumably facilitate international cooperation by constraining unilateral defection, one would expect China's entry into the WTO to have allowed Chinese firms to better defend their interests in trade disputes, including antidumping (AD) investigations initiated by a WTO member country such as the United States.

Intuitively, there are reasons for expecting China's WTO accession to have helped level the playing field between that country and its main trading partners, leading to more trade disputes, including those regarding antidumping, to be resolved in China's favor. First, scholars of international institutions emphasize that international rules can constrain state behavior by inflicting reputational harm on states that fail to live up to their international legal obligations (e.g. Simmons, 2000), allowing for more effective monitoring of other states' actions and easier identification of defections (e.g. Keohane, 1984), or raising the costs for states to disregard their international obligations through the adoption of rigorous dispute settlement procedures (Keohane *et al.*, 2000; Busch *et al.*, 2007). From this perspective, China's WTO membership should help Chinese firms better shield themselves from AD suits initiated by the US.

A second potential reason for expecting WTO membership to have helped Chinese firms obtain a more favorable outcome in US antidumping investigations, as Bown (2010) suggests, is that during the pre-accession period, the US and other WTO members have resorted to the use of antidumping, among a host of other policies, to extract more market access concessions from China. After all, China has agreed to substantially remove most of its tariff and non-tariff barriers, liberalize its domestic market, and increase the transparency of its domestic trade laws in its WTO agreements. In light of the sweeping market access concessions China made in its WTO agreements, it is reasonable to expect the US to have reversed its antidumping policy toward China following the country's accession into the WTO as the use of antidumping would have lost its effectiveness as an instrument for extracting market access concessions from China.

This paper engages in a preliminary examination of the impact of China's WTO accession on US antidumping actions against China, arguing that instead of realizing the goal of helping Chinese producers to successfully fend off AD actions initiated by the US, WTO membership may have

generated unintended consequences for both the Chinese government and industries. A possible mechanism through which WTO membership may have led US authorities to pursue more rigorously AD cases against China is through the role of increased trade following China's entry into the WTO. We provide preliminary descriptive statistics showing that China's membership in the WTO is associated with a rather dramatic expansion in US–China trade and, in particular, in US imports from China. We postulate that such an increase in trade volume has heightened the tendency for US producers to pursue more aggressively AD cases against China since 2001.

Another mechanism through which WTO membership may have increased protectionist pressure in the United States is via the growth in US investment in China following China's WTO accession. The market-opening commitments made by the Chinese government in the WTO agreements facilitated the expansion of US investment in China, which caused some small US firms to lose their competitive advantage relative to those that have invested in the Chinese market. Consequently firms that are unable to withstand competition from those that have successfully developed business relationships in China have more frequently resorted to antidumping provisions, leading to both more AD petitions and more affirmative antidumping adjudications against Chinese firms.

We further propose that the above market dynamics generated by WTO membership was reinforced by a particular political compromise that China has accepted upon WTO accession, specifically the continued designation of China as a non-market economy (NME) in antidumping investigations for 15 years upon succession. By permitting recourse to alternative methodologies in determining 'normal value' where non-market forces in the economy appear to be distorting prices, the NME designation provided US authorities with considerable discretion in choosing surrogate countries for calculating the costs of Chinese firms, increasing the probability that US AD investigations will yield sufficient evidence in favor of a positive ruling against China. While China was treated as an NME in US AD investigations even prior to its entry into the WTO, the incorporation of the NME status in China's accession agreements, which effectively provided a thin legal veil for the United States to more frequently invoke the NME designation, could have led to the more frequent imposition of AD duties against Chinese producers.

We support our argument with statistical analyses of the pattern of US AD initiation *and* adjudication against China between 1991 and 2005. We emphasize the preliminary nature of our findings since our data only covers four years after China's accession into the WTO. The next section provides an overview of US antidumping investigations against China in both the pre- and post-accession periods. The descriptive statistics presented in this section cast doubt on optimistic views of the effect of China's WTO membership on US AD practices. We then proceed to lay out our

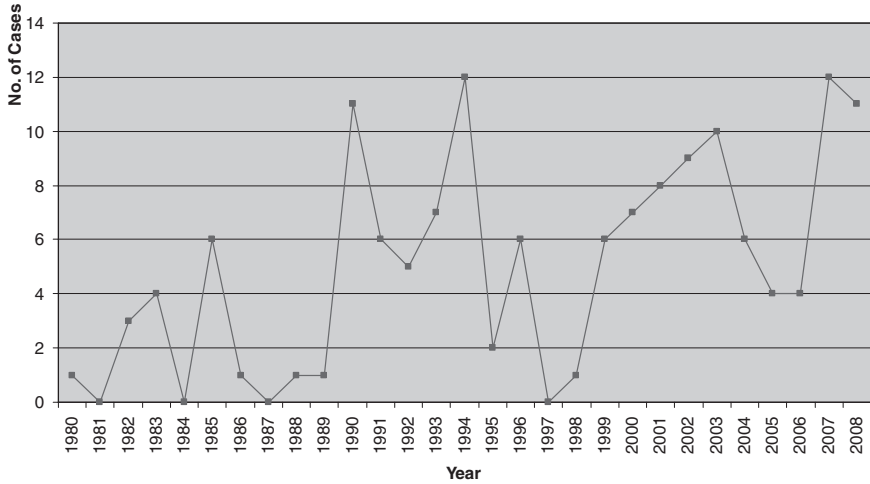
key hypotheses about why China's WTO membership may not have had a constraining effect on the United States' AD practices. The section that follows statistically tests this argument using data on US AD cases against China. We discuss the policy implications of our findings in the conclusion.

### THE PATTERN OF US ANTIDUMPING ACTIONS AGAINST CHINA

Antidumping cases in the United States are usually initiated by domestic producers who charge that foreign companies are selling at 'less than fair value' (and, in most cases, at prices below those in their home markets). Antidumping investigations in the US are typically handled by two agencies – the International Trade Administration (ITA) in the Department of Commerce (DOC) and the US International Trade Commission (USITC) – through an administrative process. Once a domestic producer files a petition with the ITA, the USITC can either reject the petition and issue a negative preliminary ruling on grounds such as lack of sufficient evidence or issue a positive preliminary ruling. In the latter example the case would proceed to the DOC, which would then conduct investigations into it and issue its own preliminary ruling as to whether the alleged foreign firm(s) has engaged in dumping. In case of positive rulings by the DOC, the USITC would in turn be charged with deciding whether the dumping has caused 'material injury' to the domestic producer(s). Once the USITC renders a positive final ruling, the DOC then imposes an AD order on the basis of the assessed dumping margin.<sup>1</sup>

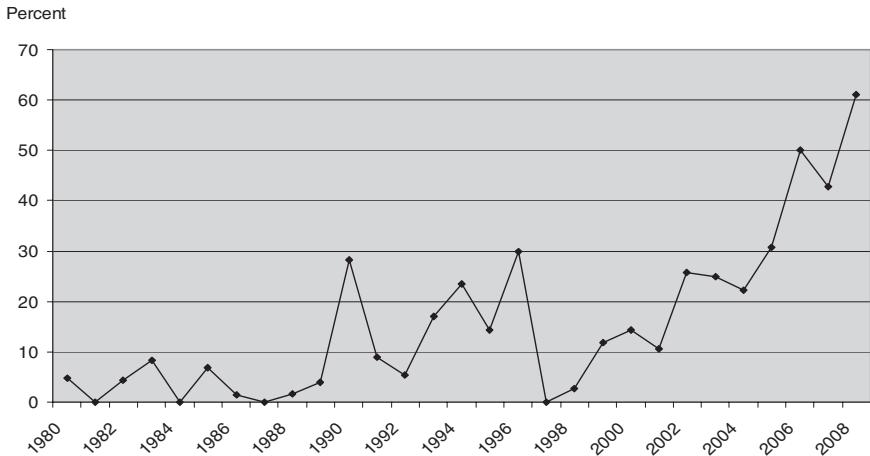
Article 6 of the General Agreement on Tariffs and Trade (GATT) allows governments to take action against dumping in order to defend their domestic industries. The WTO's Anti-Dumping Agreement further expands on Article 6 to specify the conditions under which countries can deviate from the GATT's general principles of tariff binding and non-discrimination between trading partners. Under the Anti-Dumping Agreement, member countries should engage in consultations over an AD complaint with each other and, in case consultations fail to produce an agreement, refer the matter to the WTO's Dispute Settlement Body. In other words, instead of making judgments on AD actions, the WTO regulates and disciplines member countries by delineating the overall parameters of permissible government actions against dumping.<sup>2</sup>

A growing proportion of US AD actions in recent years were directed at China. Figure 1a presents the number of US AD cases directed against China in each of the years between 1980 and 2008, while Figure 1b shows the share of cases against China in total US AD investigations during this period. Figure 1a indicates that while the total number of US AD investigations against China briefly declined between 2003 and 2005, a pattern that can be explained by the relative decline in overall US AD



**Figure 1a** Number of US antidumping actions against China, 1980–2008.

initiations against all of its trading partners,<sup>3</sup> annual US AD initiations against China again reached record high numbers of 12 and 11 in 2007 and 2008, respectively. Moreover, as Figure 1b suggests, the share of AD filings against China in total US AD initiations has risen steadily since China’s entry into the WTO, reaching a record high of 61 per cent in 2008.



**Figure 1b** US antidumping investigations against China as a percentage of US antidumping investigations against all countries, 1980–2008. *Source:* Global Antidumping Database.

Has China's accession into the WTO led the United States to relax its discriminatory treatment via the antidumping policy instrument? According to the US Government Accountability Office (2006: 1), between 1980 and 2004, the average country-wide duty rates applied against China was about 98 percent, 'over 60 percentage points higher than the average 37 percent all-others duty rate applied to market economy exporters of the same products.' On 25 occasions where the DOC has levied duties against the same product from both China and one or more market economy, China's duties were on average over 20 per cent higher than those imposed on market economies.

Moreover, a study of the US' use of antidumping actions against China between 2002 and 2004 by Chad Bown (2007) reaches similar conclusions. According to the study, China accounts for 13 per cent of all antidumping investigations initiated by the United States between 1995 and 2001, making it the most frequent target of US AD investigations even though the country was only the fifth largest exporter to the US, and accounted for only 8 per cent of the US market. Not only has his number risen from 13 per cent in 1995–2001 to 26 per cent in 2002–04, the share of investigated cases that have resulted in the imposition of import restrictions has increased from 68 per cent in 1995–2001 to 76 per cent in 2002–04. As well, the conditional mean AD duty has risen from 131.77 per cent in 1995–2001 to 148.38 per cent in 2002–04. Overall, the message conveyed by the descriptive data fails to support the argument that China's WTO membership has helped to rein in the United States' use of antidumping against imports from China. The analysis by Bown (2007) of other developed countries' use of antidumping against China yields a similar conclusion. In the following sections, we investigate with greater rigor the impact of China's entry into the WTO on the United States' use of the protectionist AD instrument.

## HYPOTHESES

In this section we tentatively suggest three plausible mechanisms through which WTO membership may have increased the probability of US AD filings as well as the incidence of affirmative US AD actions against China: the increase in US–China trade following China's entry into the WTO; growing protectionist pressure from smaller domestic firms that have lost their competitive advantage relative to those that have invested in the Chinese market; and the continued designation of China as an NME following its WTO accession.

### **Increasing import competition from China**

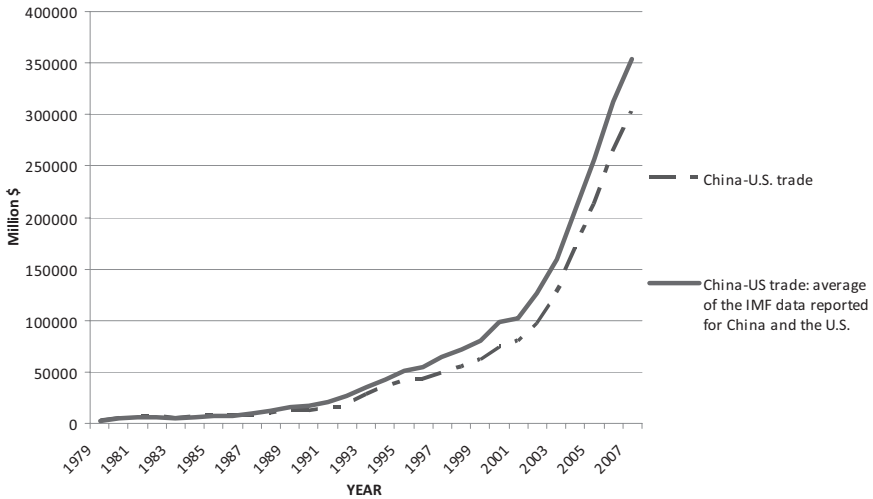
One way through which WTO membership may affect industries' propensity to seek protection is through increased trade and, in particular,



increased imports. There has been an ongoing debate about the role of an international organization such as the GATT/WTO in influencing trade flows. Empirical analyses by Rose (2004) failed to yield evidence that countries joining or belonging to the GATT/WTO have different trade patterns than others. However, analyses by Subramanian and Wei (2007) and Goldstein *et al.* (2007) reached the opposite conclusion. By refining the gravity approach used by Rose to include country fixed effects, Subramanian and Wei provide robust evidence that the GATT/WTO has promoted world trade. Moreover, they contend that the institution promoted world trade in an asymmetric manner.<sup>4</sup> By emphasizing the uneven patterns of trade liberalization, Subramanian and Wei provide a more nuanced analysis of the effect of the WTO. Goldstein *et al.* take yet another approach. By broadening the analysis from formal membership in the GATT/WTO to all parties with standing in the institution such as colonies and newly independent states, they found that the GATT/WTO stimulated international trade, even after taking into account other factors such as proximity, national income, and language affinity that presumably help to predict trade patterns.

Hence, the jury is still out about whether the WTO affects trade flows. If the analyses by Subramanian and Wei and Goldstein *et al.* are valid, then one would expect China's membership in the GATT/WTO to positively affect its trade flows, including trade flows with the United States. It is possible, therefore, that WTO membership increases the incidence of US antidumping petitions and positive rulings against China through the role of increased imports. The literature on trade protection (e.g. Lavergne, 1983; Trefler, 1993) suggests that industries confronted with greater import competition are more likely to lobby for and receive trade protection. If WTO membership does result in increased US-China trade, then it is conceivable that the competitive pressure generated by the rise in Chinese imports would lead US domestic industries to lobby more rigorously for trade protection, including protection via antidumping. Such competitive pressure should also increase the probability that domestic industries can present evidence of injury from Chinese imports, as required by AD authorities for affirmative actions.

A comprehensive analysis of the impact of the WTO on China's trade flows is beyond the scope of this paper. Nevertheless, the descriptive data presented below provides some preliminary evidence that WTO membership does indeed stimulate China's trade with the US, resulting in a rather sharp surge in US imports from China. Figure 2 presents the trend in US-China trade between 1979 and 2007 using data from the *Direction of Trade Statistics Yearbook* published by the International Monetary Fund (IMF) (various years). The dotted line shows total Chinese exports to and imports from the United States during the period under consideration, while the solid line plots the average of China's total trade with the US



**Figure 2** US–China trade, 1979–2007. *Source: IMF Direction of Trade Statistics (various years).*

and the United States' total trade with China as reported by the IMF. As we can see, while the volume of US–China trade has grown steadily during the 1980s and 1990s, the increase in the trade volume has been especially sharp since China's entry into the WTO. Figure 3 further decomposes US trade with China into imports and exports. This chart indicates that the expansion in the total volume of US–China trade is driven in large part by a rather significant increase in US imports from China. As Figure 3 indicates, US imports from China have experienced a three-fold expansion from 2001 to 2007, increasing from \$103 billion in 2001 to \$340 billion in 2007. The US trade deficit against China has ballooned during the same period, climbing from \$84 billion in 2001 to \$274 billion in 2007 (see Figure 4). The dramatic growth of the US trade deficit against China therefore created a political environment that made policymakers more susceptible to industry demands for protection.

In short, the descriptive statistics on US–China trade patterns presented above suggest that the total volume of bilateral trade has expanded following China's entry into the WTO, a pattern that conforms to arguments touting the trade liberalizing effects of international institutions such as the WTO. A more nuanced analysis of the trade pattern further suggests that the growth in trade volume is driven in large part by the growth in US imports from China. As theories of endogenous trade protection (e.g. Baldwin, 1985; Salvatore, 1987) postulate that import competition generates pressure for domestic industries to lobby for trade protection, it is

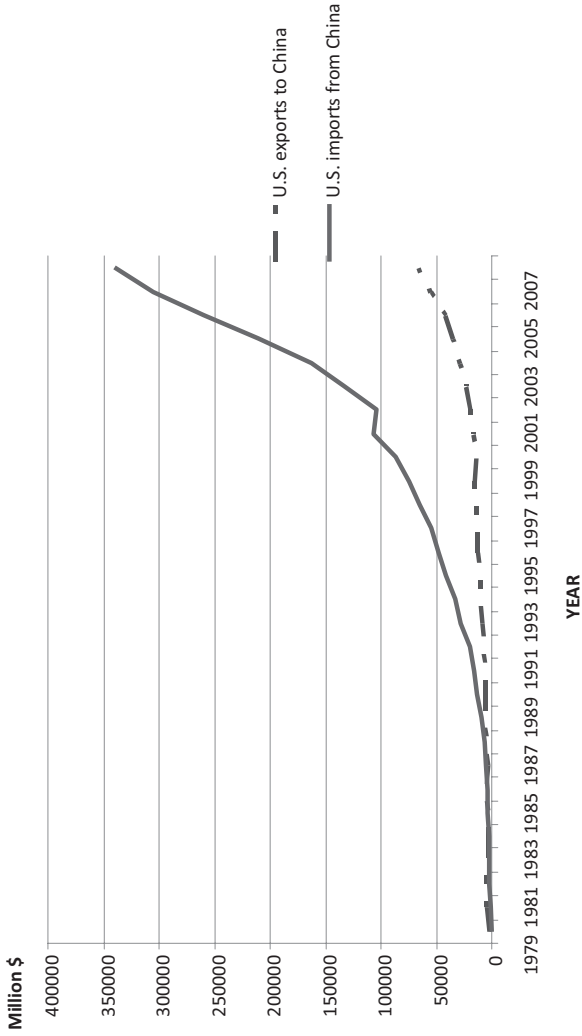
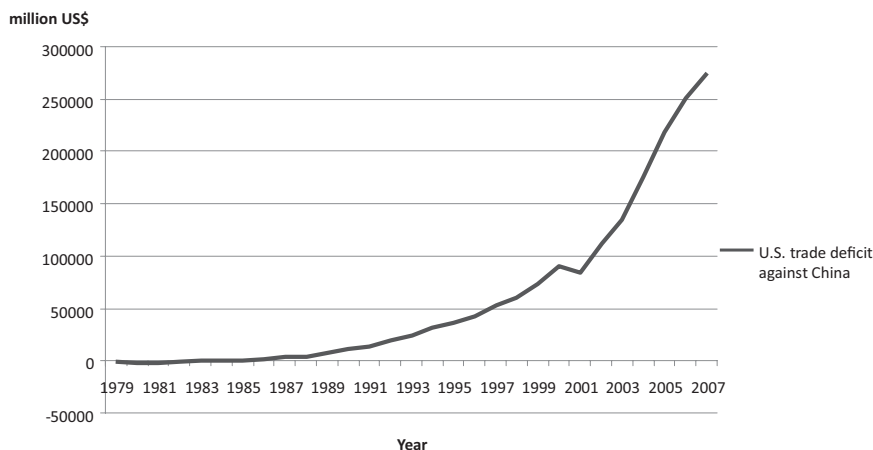


Figure 3 US trade with China: imports and exports, 1979–2007. Source: IMF, *Direction of Trade Statistics* (various years).

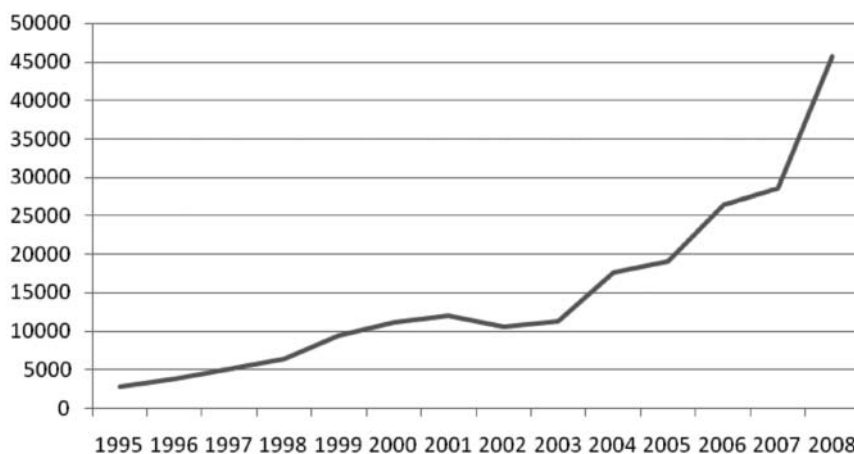


**Figure 4** US–China trade deficits, 1979–2007. *Source:* IMF, *Direction of Trade Statistics* (various years).

reasonable to expect that US industries would react to such a sharp hike in Chinese imports by lobbying for trade relief, including trade relief under the antidumping provision. This in turn should have increased the pressure on US AD authorities to respond to industry petition in a positive manner.

### **The competitive pressure exerted by increases in US outward investment in China**

Still another mechanism through which WTO membership may increase protectionism in the US is by increasing outward investment which places new competitive pressure on smaller domestic firms. In compliance with the US–China agreement regarding China’s WTO accession, the Chinese government has undertaken significant market liberalization commitments, promising to open up diverse sectors of the Chinese market to foreign investment. The subsequent improvement in the investment environment has led to substantial increases in foreign investment in China, which has in turn contributed to the growth in Chinese exports to the US. According to a report by the Oxford Economics and Signal Group (2006), the growth in Chinese exports to the US can be attributed in part to the increase in foreign investment in China associated with its WTO entry. Total foreign direct investment (FDI) inflow into China has increased from \$46.9 billion in 2001 to \$72 billion in 2005. About 70 per cent of the FDI took place in the manufacturing sector as foreign investors sought to take advantage of China’s cheap labor and large domestic market (UNCTAD,

**U.S. Direct Investment in China (\$ million)**

**Figure 5** US foreign direct investment in China, 1995–2008 (\$ million). *Source:* US Bureau of Economic Analysis, 'U.S. Direct Investment Abroad: Balance of Payments and Direct Investment Position Data' (various years) <http://www.bea.gov/international/di1usdbal.htm> (accessed 2 October 2009).

2007) (see Figure 5 for US investment in China between 1995 and 2007). The increase in investment, coupled with the related imports from US affiliates in China, has triggered a new round of competition among domestic producers in terms of trade diversification. This undercuts the competitive advantage of US firms without foreign investment in China relative to those that have specifically invested in the Chinese market. It also led retailers who used to source from producers to go directly to China, thus undercutting the latter's competitive advantage. As US producers with either no foreign investment or investment outside of the Chinese market have come under growing competitive pressure from those that have successfully invested or built business networks in China, the former are likely to pursue administered trade policy in order to alter the dynamics of domestic competition and tip the balance of global competition in their own favor.

US AD actions against furniture imported from China, which cover approximately \$1 billion worth of wooden bedroom furniture from that country, provide a good example of the above dynamics. In October 2003, 31 American furniture makers and five unions filed a petition with the US Department of Commerce against Chinese furniture imports. The petitioners asked for AD tariffs of up to 440 per cent on Chinese wooden bedroom furniture. According to the petitioners, Chinese wooden bedroom furniture exports were sold at 'less than fair value', leading to 'material injury'

in the domestic US furniture industry. The petition argued that Chinese imports accounted for 23 per cent of the value of US domestic consumption in 2002, while sales from the petitioning firms declined by 23 per cent between 2000 and 2002. This is in addition to the 34,700 jobs that had been lost since 2000, or 28 per cent of the furniture industry workforce (USITC, 2004b).

After an extended evaluation to determine whether there was sufficient support for the petition within the domestic industry, an investigation was initiated in December 2003. On 9 November 2004 the DOC announced its final affirmative determination in the antidumping duty investigation of wooden bedroom furniture from the China. The DOC found that Chinese producers made sales of subject merchandise to their US customers at less than fair value, with margins ranging from 0.79 per cent to 198.08 per cent for the individually investigated respondents, 8.64 per cent for the 115 companies qualifying for a 'separate rate', and a People's Republic of China (PRC)-wide rate of 198.08 per cent for all other companies (Rushford, 2005; USITC, 2004a).

To what degree are industry injuries and job losses the main motivations for the AD petition? As the following analysis shows, US domestic market competition best helps us understand the initiation of this antidumping case. First, the increase in US furniture imports from China has resulted in growing tension between those producers who have either invested in China or built business connection with Chinese furniture producers on the one hand, and those with no business ties with China on the other hand. Importantly, as some domestic producers began to engage in trade diversification and imported from suppliers in other developing countries, they increasingly targeted low-cost furniture imports from China for AD investigation in order to be able to compete effectively with those who have either invested in Chinese facilities or have successfully developed their Chinese supply chains. As shown by the ITC preliminary report, US imports of wooden bedroom furniture from Indonesia, Brazil, Malaysia and Thailand increased dramatically before the petition was filed in 2003 (USITC, 2004b: 11). Thus instead of restricting dumping by Chinese producers, the petitioners have sought to use the AD case against China to alter the dynamics of domestic market competition. In other words, 'the case of wooden bedroom furniture from China has nothing to do with unfair trade and is a perfect example of how one group of domestic producers seek to exploit the gapping loopholes of the antidumping law to get a leg up on its domestic competition' (Ikenson, 2004: 1). However, as the above analysis suggests, the increasing pattern of trade diversification implies that restricting imports of Chinese furniture through high AD duties will not bring back US jobs. It is more likely that US importers will secure import sources from other low-cost developing countries. As a matter of fact, since the first quarter of 2004, Southeast Asian countries have increased their exports of furniture to the US by at least 35 per cent (Piland, 2005).

Second, tension also existed between some US furniture producers and retailers. In the 1990s some US producers began to supplement their domestic production with furniture made in China, thus contributing directly to the increase in imports of wooden bedroom furniture from China. These US producers provided ideas and designs to Chinese producers and brought the final products back to the US market. Usually they would mark the price up 30 to 40 per cent to a retailer and still sell the product for less than what it would have cost to produce domestically (Seamean, 2003: 149). According to the ITC's own preliminary report, 20 of the 40 responding domestic producers imported Chinese merchandise during the period and the 12 largest domestic producers of wooden bedroom furniture all imported reasonably substantial and increasing volumes of merchandise from China during the period of investigation (USITC, 2004b: 11).

The trade and investment liberalization following China's WTO membership, however, has reduced the obstacles for retailers to directly import from China, thus circumscribing producers' role as middlemen in the furniture trade. According to the Association of Furniture Retailers of America (FRA), which strongly opposed the investigation, the real targets of the petitioners' actions were not Chinese imports themselves, but their competitors and American retailers who were no longer paying profits to the middlemen and were instead dealing directly with Chinese manufacturers. As William Silverman, FRA Counsel, put it, 'Some of the petitioners have imported wooden bedroom furniture from China for years and profited by reselling these Chinese imports to major retailers. Once retailers went to China directly, thereby eliminating petitioners' middlemen profits, the group of domestic producers responded by filing this dumping case with the ITC' (Furniture Retailers of America, 2004). Representatives of Furniture Brand International, Inc., the largest US producer and an opponent of the petition, provide a nice summary of the above paradox: 'this case boils down to a request by domestic producers who are significant importers of the subject merchandise to impose duties on imports that they have voluntarily made on the ground that their very own actions have caused them injury' (Furniture Brands International, 2003: 2). Overall, this case illustrates how the increases in investment in the Chinese market following China's accession into the WTO have exerted pressure on the smaller domestic firms, leading them to lobby more rigorously for trade protection, including AD protection, against imports from China.

### **The designation of China as a non-market economy for AD investigations under the WTO**

Finally, we hypothesize that the WTO-inconsistent terms for AD determination that China has agreed to upon accession may have reinforced

the market forces described above. Specifically, under the US–China bilateral agreement regarding the terms of China’s WTO accession, the US retains the ability to continue to use the unfavorable non-market economy designation to settle AD cases against China for 15 years after Chinese accession. The underlying rationale for this designation is that as China is undergoing a transition from a planned to a market economy, domestic prices in China do not adequately reflect market demand and supply. Consequently, instead of comparing the price of a good imported from China with the price of the same good marketed in either the Chinese or a third country market, the DOC will either use the constructed cost of producing the same good in a third country where the prices of factor inputs are determined by the market or the ‘normal value’ of the cost of production in a surrogate country as a benchmark for determining whether a product from China is being dumped in the US market.<sup>5</sup>

The use of the above two methodologies for AD determination – the factors of production approach (also called the constructed value approach) or the surrogate country approach – could be disadvantageous to Chinese producers for a number of reasons. First, by continuing to treat China as an NME in AD investigations, US AD authorities are allowed substantial discretion in choosing surrogate countries to be used to estimate the costs of Chinese firms. Moreover, as Lardy (2002: 87) pointed out, countries that are selected as surrogate countries or whose prices are used in the constructed value approach often have much higher labor costs than those in China. This increases the possibility that the US Department of Commerce will rule positively in an AD case when in fact the price exceeds the cost of production in China. This practice in effect undermines China’s comparative advantage in labor-intensive goods over its competitors.

Second, the inclusion of profits in the calculation of the ‘normal value’ of the product may disadvantage Chinese producers. Theoretically it is possible that a firm may be willing to sell its goods for a price only sufficient to cover the cost of production during a time of economic downturn. If the prices of goods this firm sells in both the home and foreign markets are the same, even though such sales incur a loss for this firm, the practice should not be considered as dumping. However, when calculating the normal value of a product in non-market economies, the US Department of Commerce always includes profits. The inclusion of profits in the construction of normal value therefore increases the likelihood that Chinese producers will be subject to high antidumping margins (Lardy, 2002: 87–8).

Third, the NME designation may have prevented Chinese firms from effectively representing themselves in the investigation process, which can lead AD investigators to use the ‘Best Available Information’ (BAI) as the benchmark for decision-making. Both NME and BAI affect the determination of the normal value measure against which to compare the



export price in the US market (Bown, 2010).<sup>6</sup> Such practices mean that US authorities are more likely to apply more stringent criteria in determining both whether injury has occurred to the domestic industry and in applying the dumping margin.

Finally, the accession protocol falls short of providing a definition of what amounts to a market economy. This consequently gives WTO members considerable discretion in determining the conditions under which to apply the NME provision against Chinese firms. In the United States, for example, the Department of Commerce enjoys substantial discretion in designating a trading partner as a non-market economy, without being bound by judicial review (Lardy, 2002: 88).

The AD investigation involving wooden furniture mentioned above helps to illustrate the above argument. In this case, just as in most antidumping investigations involving China, the DOC used prices and costs from India to estimate the cost of production in China. This methodology makes it difficult to determine the real costs of production in non-market economies. In particular, the method of calculation creates 'hypothetical costs' and 'hypothetical profits' of Chinese products, which often push up the prices used for the comparison (Rushford, 2005). In the bedroom furniture case, the mandatory respondents reported up to 100 factors of production which required the DOC to evaluate and obtain values for 'over 500 company-specific factors of production' (May, 2004). Chinese purchase prices for those inputs were substituted by Indian import prices for those inputs that were produced in China, unless such information was found unreliable or unusable. However, one component for which usable Indian data were unavailable was wood, an obviously important input for wooden furniture. Thus, Russian import prices served as the basis for valuing this input (Ikenson, 2005: 4). For the rest of the inputs where Indian price data were available, other factors such as producer size, economies of scale, size of purchase, and import sources served to complicate the cost and profit estimates for each individual Chinese producer. In addition, even if we agree that India and China are at a comparable stage of economic development, this method did not reflect the comparative advantage of China as the leading furniture exporter in the areas of labor cost, infrastructure, production chain, and designing capacity.

Overall, the AD case involving wooden bedroom furniture suggests that the NME designation may have enhanced the appeal of the arguments of domestic producers. While under the US–China bilateral agreement on China's WTO accession, Chinese firms can be exempted from the NME designation on a case-by-case basis by petitioning for a review of the appropriateness of the NME methodology, in practice virtually no Chinese firm has received such treatment. The NME approach consequently increases the possibility that US AD authorities will issue a positive ruling in AD investigations against China.

The preceding discussion leads us to the following hypothesis: the increase in US–China trade and the domestic market restructuring following the growth in US investment in China after 2001, reinforced by the designation of China as an NME for antidumping investigations under the WTO, may have triggered domestic protectionism, increasing both the probability of US AD initiation *and* the probability of affirmative AD rulings against China.

## STATISTICAL ANALYSIS

This section supports our argument with statistically analyses of the pattern of US antidumping cases against China. While our statistical results lend considerable support to our argument, it should be emphasized that our tests cover a relatively short period of time following China's accession into the WTO and should consequently be viewed as providing a tentative first cut into the issue.

### Research design

We base our empirical analysis on all antidumping investigations the USITC has initiated against China. The dataset covers the years both prior to and following China's entry into the WTO and therefore allows us to isolate the impact of the WTO membership on US antidumping practices against China.

Our empirical study examines both the incidence of US AD actions against China *and* the case outcome. To analyze the probability that an industry will initiate an AD petition against China in a particular year, we had to match the AD initiation data recorded at the 8- or 10-digit Harmonised System (HS) level with trade data at the 3-digit International Standard Industrial Classification (ISIC) level available from the Trade, Production and Protection database developed by Nicita and Olarreaga (2007). Since trade data from the Nicita and Olarreaga database only goes up to 2004, our statistical tests of the pattern of AD initiation are limited to 28 3-digit ISIC industries between 1991 and 2005 (using lagged 2004 data). While it would be ideal to extend our analysis to more recent years (2006–08), the lack of longer time-series trade data made it difficult to do so.<sup>7</sup>

Our analysis of the case outcome is based on two data sources. For cases initiated between 1980 and 1995, we draw on the US antidumping dataset developed by Bruce Blonigen.<sup>8</sup> This dataset lists all US antidumping cases by ITC case number, the date of initiation, case outcome, and the 4-digit Standard Industrial Classification (SIC) industry code. We extract from this list cases against China. For US antidumping actions initiated between 1995 and 2005, we rely on US case-specific antidumping initiations available from the Global Antidumping Database maintained by Chad Bown.<sup>9</sup> This

database provides some of the same, albeit more updated information, as that available from the Blonigen dataset. However, since this database lists the US industry filing AD actions by the Harmonized System codes at either the 10- or 8-digit level, we had to convert them to the 4-digit SIC codes to ensure the consistency of our data. In addition, as data for some of our key independent variables such as trade data are only available for the years between 1989 and 2004, we had to limit our sample to the years between 1990 and 2005.

### Dependent variable

Since we are interested in both the incidence of AD initiation and the case outcome, we include two dependent variables into our analysis. *AD petition* is a dummy variable which is coded as 1 if an industry has initiated an AD case in a particular year and 0 otherwise. In our sample composed of 3-digit ISIC industries, 11 per cent of the cases have resulted in at least one antidumping investigation initiated against China in a given year. As a measure of the case outcome, *AD decision* is again a dummy variable. It is coded as 1 if US AD authorities have ruled affirmatively against China in a particular AD case, and 0 otherwise.

### Independent variables

To tap the effect of the WTO membership on ITC decision-making, we include the following key independent variable into our analysis: *WTO membership*. As China became a member of the WTO in 2001, *WTO membership* is a dummy variable that is coded as 1 if a case is initiated after 2001, and 0 otherwise.

We include the following control variables in analyzing the probability that an industry will initiate an AD petition against China:

*Trade balance* – the US trade balance with China provides a broad barometer of the protectionist sentiment in the United States against that country. It is expected that the larger the US–China trade deficit, the more likely the USITC will rule in favor of the domestic industry. Consequently a negative relationship is expected between this variable and the AD outcome. US trade deficit data is based on trade data available from the *US Foreign Trade Highlights* (various years).

*US GDP growth* – the gross domestic product (GDP) growth rate of the United States provides another indicator of the macroeconomic conditions in the US. Positive economic growth rates in the US are expected to dampen domestic businesses' incentives to seek protection against its trading partners, including China, and vice versa.

*US import penetration from China* – US import penetration from China is measured as total US imports from China as a percentage of total US GDP in the year of the petition. A higher level of import penetration from

China can create an overall environment that makes US trade authorities more susceptible to protectionist pressure. In such a situation, even though the value of the imported products in question may be relatively small, the overall political environment may exert sufficient pressure on US AD authorities to take affirmative measures in a given case (e.g. Irwin, 2005).

*US export dependence on China* – US dependence on exports to China is measured by US exports to China as a percentage of US GDP. We include this variable into the analysis to tap the target country's capacity to retaliate against the US. It is expected that the more dependent the US is on exports to China, the more likely the Chinese can influence the market price and hence lower the world price of US exports via trade sanctions. A negative association is expected between this variable and affirmative AD decisions.

*Log industry imports* – our empirical analysis further takes into consideration import penetration at the industry level. Prior studies (e.g. Marks and McArthur, 1990) suggest that industries confronted with larger amounts of imports are more likely to demand trade protection. Thus, it is expected that the higher the degree of imports at the industry level, the more likely an industry is to lobby for trade protection and to successfully influence ITC ruling.

*Log industry imports from China* – following the above line of reasoning, we further include the logarithm of industry imports from China to see if the pattern of AD filing and decision-making responds specifically to import competition from China.

*Steel industry dummy* – the steel industry has filed a disproportionately large numbers of AD cases and has traditionally been considered an antidumping-intensive industry. To see if these industries are more likely to lobby for trade protection and to obtain adjudication outcomes in their favor, we include a dummy variable for the steel industry. All of the above control variables are lagged by one year.

### Analysis of the pattern of AD initiation

We estimated logit models for time-series data for the pattern of AD initiation. Model I includes only industry-level variables; Model II includes economy-wide variables; while Model III includes all of the above variables (see Table 1). The most significant result is that the WTO membership variable is positively signed in all three model specifications and is statistically significant at the  $p < .05$  level in Model I. While the variable did not achieve statistical significance in Models II or III, the positive association between this variable and *AD petition* nevertheless is inconsistent with the view that membership in the WTO has allowed Chinese firms to better weather the impact of US AD actions.

In addition, consistent with our theoretical expectations, the US trade balance with China is negatively associated with the probability of AD

**Table 1** Logit models of US antidumping initiation against China, 1992–2005.

Variables	Model I	Model II	Model III
Trade balance		–0.0002** (0.0001)	–0.0003** (0.0001)
US GDP growth		–0.217 (0.216)	–0.221 (0.217)
US export dependence		2.52e+07 (2.35e+07)	3.02e+07 (2.36e+07)
US import penetration		–2.42e+07** (1.21e+07)	–2.83e+07** (1.24e+07)
Log industry imports	0.538* (0.310)		0.571* (0.323)
Log industry imports from China	–0.082 (0.187)		0.095 (0.222)
Steel industry dummy	2.691 (3.977)	3.145** (1.680)	2.926 (3.743)
WTO Membership	1.043** (0.433)	0.246 (1.286)	0.163 (1.282)
Constant	–10.845*** (3.953)	0.022 (1.472)	–9.829** (4.465)
No. of observations	391	392	391
Log likelihood	–115.769	–113.923	–110.769
Wald chi(2)	13.19	17.02	19.78

Notes: \*\*\* indicates significance at the  $p < .001$  level; \*\* indicates significance at the  $p < 0.05$  level; \* indicates significance at the  $p < .01$  level. Robust standard errors in parentheses.

initiation, suggesting that a larger US trade deficit against China is likely to increase the probability of AD filing against that country. The log value of total industry imports is positively signed and is statistically significant at the  $p < 0.1$  level in Models I and III. This result is consistent with the view that import penetration at the industry level heightens an industry's propensity to seek trade protection. Also in line with our expectations, the steel dummy variable is positively signed in all three model specifications and is statistically significant at the  $p < 0.05$  level in Model II. However, we did not find any consistent relationship between an industry's imports from China and its tendency to file an antidumping petition. Also somewhat counterintuitive is the negative and statistically significant association between US import penetration from China and the probability of AD filing in Models II and III. We do not yet have an explanation for this counterintuitive result. The remaining control variables are generally insignificant.

### Analysis of the pattern of AD adjudication

We estimate probit models with robust standard errors and experimented with several model specifications in our analysis of the pattern of AD

**Table 2** Probit models of US antidumping decision-making against China, 1990–2005.

Variables	Model IV	Model V	Model VI
Trade balance		6.65e-06 (0.00003)	2.81e-6 (0.00011)
US GDP growth		0.037 (0.093)	-0.032 (0.153)
US export dependence		-26.335* (10.252)	-28.724* (16.374)
US import penetration		3.332 (2.743)	3.688 (6.666)
Log industry imports	0.0629 (0.171)		0.099 (0.194)
Log industry imports from China	-0.103 (0.118)		-0.139 (0.124)
Steel industry dummy	-0.714 (0.660)	-0.765 (0.631)	-0.952 (0.741)
WTO Membership	1.073** (0.507)	2.303*** (0.861)	2.015* (1.060)
Constant	1.269 (3.045)	2.393* (0.978)	2.887 (3.320)
No. of observations	78	98	78
Log pseudolikelihood	-36.257	-45.495	-34.117
Pseudo R2	0.084	0.128	0.138

Notes: \*\*\* indicates significance at the  $p < .001$  level; \*\* indicates significance at the  $p < 0.05$  level; \* indicates significance at the  $p < .01$  level. Robust standard errors in parentheses.

adjudication. Regression results are shown in Table 2. Model IV includes only the industry-level variables and the WTO membership variable. Model V includes all of the macroeconomic variables, variables tapping the overall US trade position vis-à-vis China, and the WTO membership variable. Model VI is the full model with all of the independent variables mentioned in the above section included.

Most notable is the result that membership in the WTO is positively associated with the probability of an affirmative AD ruling and the relationship is statistically significant at the  $p < 0.05$ ,  $p < 0.001$ , and  $p < 0.10$  level in Models IV, V, and VI, respectively. This lends strong support to our hypothesis that due to the increase in the volume of US–China trade following the country’s entry into the WTO and the substitutability of trade barriers, China’s WTO membership has the paradoxical effect of increasing the probability that the US International Trade Commission will issue positive AD rulings against China.

In addition, consistent with our theoretical expectations, US export dependence on China is negatively associated with the probability of imposing AD restrictions against China. This variable is significant at the

$p < 0.10$  level in both Model V and Model VI. This finding is consistent with the hypothesis that greater US dependence on the Chinese market for exports reduces industries' incentives to seek trade protection due to fear of retaliation.

The remaining independent variables are largely insignificant. In none of the model specifications did the US trade balance, US GDP growth rate, US import penetration, log product imports from China, industry shipments, or the steel dummy variable achieve statistical significance. In this set of models, we did not find any statistically significant effect for the steel industry. While US import penetration from China and logged industry imports are positively signed, these variables are not statistically significant in either model. The log value of industry imports from China is insignificant as well. This puzzling result may be explained by the fact that our sample is composed of only those industries that have had an AD investigation initiated against a firm and these industries tend to be ones that have a large share of imports from China.

We further calculate the conditional effect of WTO accession on an affirmative AD decision on the basis of Model VI. Holding all other independent variables at their means, varying WTO membership from 0 to 1 would lead the probability of an affirmative AD decision to increase from 0.73 to 0.99. Thus WTO membership does significantly increase the probability of positive AD rulings against China.

### Robustness checks and caveat

We further conducted a couple of robustness checks of our analysis of the pattern of AD adjudication. Specifically, we experimented with using industry imports from China as a percentage of overall industry imports as an alternative measure of the level of import competition from China at the industry level. Test results, shown as Model VII and Model VIII in Table 3, are very similar to those reported in Table 2. As in the tests using log product imports as a measure of import competition, WTO membership has a positive and statistically significant relationship with the probability of AD petitions.

In addition, we added a variable measuring the level of industry concentration to Model IX. The logic of collective action suggests that industries with a higher degree of concentration are more likely to be able to effectively engage in collective action and to successfully lobby for protection. To take into account this possibility, and following the lead of earlier studies of the political economy of US antidumping duty determination (e.g. Hansen, 1990), we include concentration ratios published by the US Census Bureau (various years) as a measure of the industry's ease of organization. It is expected that more highly concentrated industries will be more likely to receive trade protection due to their ability to organize for collective

**Table 3** Probit models of US antidumping decision-making against China, 1990–2005.

Variables	Model VII	Model VIII	Model IX
Trade balance		6.10e-06 (0.0001)	0.00002 (0.0001)
US GDP growth		-0.022 (0.153)	-0.023 (0.148)
US export dependence		-28.791* (16.513)	-29.259 (16.922)
US import penetration		3.978 (6.654)	5.949 (7.132)
Log industry imports	-0.025 (0.143)	-0.018 (0.157)	-0.030 (0.208)
Log industry imports from China			-0.099 (0.124)
Industry import share from China	-0.009 (0.015)	-0.012 (0.014)	
Steel	-0.749 (0.656)	-0.895 (0.661)	-0.635 (0.731)
WTO Membership	1.047** (0.502)	2.058** (1.083)	2.056* (1.065)
Industry Concentration ratio			-0.004 (0.015)
Constant	0.756* (0.323)	2.907 (3.256)	4.530 (3.640)
No. of observations	78	78	69
Log pseudolikelihood	-36.353	-31.695	-31.534
Pseudo R2	0.082	0.123	0.127

*Notes:* \*\*\* indicates significance at the  $p < .001$  level; \*\* indicates significance at the  $p < 0.05$  level; \* indicates significance at the  $p < .01$  level. Robust standard errors in parentheses.

action. The result, presented in Model IX in Table 3, does not alter our central finding in any way. While the industry concentration ratio turns out to be statistically significant, our key independent variable, China's membership in the WTO, has retained its positive and statistically significant relationship with the dependent variable in this test.

Finally, we ran logit, instead of probit models, of the AD adjudication models described above. As the results from this procedure are consistent with those reported above, we do present these test results in this paper.<sup>10</sup>

## CONCLUSION

The above analysis of the political economy of US antidumping decisions against China is in line with our conjectures about the impact of China's WTO membership on ITC decision-making. As membership in the WTO may lead to increases in the volume of trade, as our descriptive statistics indicate, and as the liberalization of investment following China's WTO



entry could undermine the competitive advantage of import-competing firms relative to those that have invested in the Chinese market, WTO membership seems to have led domestic industries to lobby more forcefully for trade protection. Furthermore, our study suggests that a political compromise the Chinese leadership has accepted upon WTO accession, the continued treatment of China as a non-market economy in AD investigations, may have subjected Chinese industries to more ambiguous standards of determining industry injury and the dumping margin in US antidumping investigations.

It should be noted that while our study identifies potential pathways through which China's membership in the WTO may affect its trade relations with the US, our findings are nonetheless preliminary in that our empirical analysis only covers up to the first four years after China's WTO accession due to data limitation. Nevertheless, our tentative findings may have implications for understanding the future development of US–China trade relations. Importantly, if the NME designation that China has accepted upon accession has resulted in the imposition of a larger number of AD duties against it, then the removal of these WTO-inconsistent terms should help shield China from the surge in protectionism in the United States. Indeed, in the past few years the Chinese government has actively sought to have its NME status reviewed at multiple forums, including pressing the WTO to review the NME clause in the Anti-dumping Agreement, exerting pressure on the US, the European Union (EU), and its other key trading partners to recognize China as a market economy through diplomatic negotiations, and developing a series of bilateral free trade agreements with its trading partners, often outside of the purview of the WTO, that grant it market economy status (Iyengar, 2004). In addition, the Chinese government has made recognition of China as a market economy one of the key talking points in the US–China Strategic and Economic Dialogue held in July 2009. If China could succeed in this endeavor, then it is reasonable to expect a relative decline in the incidence of affirmative US AD rulings against China and vice versa.

Additionally, this paper suggests that the surge in Chinese imports in the US since 2001, which was induced by China's WTO entry, may have contributed to growing protectionist pressures in the US. If China continues its substantial penetration of both the US and other key global markets, then it is reasonable to expect the current pattern of the aggressive pursuit of AD cases, not only by the US, but also by China's other key trading partners, to continue. Furthermore, the recent global economic recession, which has revived calls for protectionism throughout the world, may not only dim the prospect for China to successfully revisit its NME status in the near future, but may also further increase the likelihood of trade restrictions against China. For example, in 2008 Chinese products were the most frequent subject of new AD measures worldwide, with 30 per cent of all new

initiations in that year targeted at Chinese exports. Since July 2009 the EU has launched a series of AD probes against Chinese products. These are in addition to the tremendous pressure the US has exerted on China to revalue its currency and the increasing number of trade disputes the US has filed against China both through the dispute settlement procedure of the WTO and under other provisions of US domestic trade law. Such developments are largely consistent with the trend outlined in this paper. Consequently it is possible that the ability of the Chinese government to successfully overcome the constraints of the NME status, the degree to which Beijing can reduce its dependence on the US export market by stimulating domestic demand and, to some extent, global economic conditions could play important roles in shaping the future pattern of US AD actions against China.

### NOTES

- 1 For detailed analyses of the US antidumping decision making process, see, for example, Hansen (1990); Hansen and Prusa (1997).
- 2 For detailed descriptions of how the WTO regulates AD practices, see 'Introduction to Anti-dumping in the WTO', [http://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/agrm8\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm8_e.htm) (accessed 7 August 2008).
- 3 The average number of annual US AD initiations against all of its trading partners during the period of investigation is 45, compared to 27, 13, and eight in 2004, 2005, and 2006, respectively.
- 4 Specifically, the institution's trade liberalizing effect is asymmetric between developed and developing countries due to the principle of special and differential treatment for developing countries, although developing country members that joined after the Uruguay Round have benefited from increased imports as more obligations have been imposed on them to liberalize trade since then.
- 5 Countries such as Brazil, India, Indonesia, Pakistan, and Thailand have most frequently been chosen as surrogates in US antidumping investigations against China. Per capita national product in these countries can range from three to five times that in China.
- 6 For detailed discussions of the administrative procedure that affects the determination of the normal market value and the dumping margins of Chinese exports, see Moore (2006); Moore and Fox (2006).
- 7 To the best of our knowledge, the Nicita and Olarrega database provides the most up-to-date trade data recorded at 3-digit ISIC levels.
- 8 See the US Antidumping Case-Specific Data, 1980–95 developed by Bruce Blonigen, available at <http://www.uoregon.edu/~bruceb/adpage.html> (accessed 12 July 2010).
- 9 See the global antidumping database, available at [http://people.brandeis.edu/~cdown/global\\_ad/](http://people.brandeis.edu/~cdown/global_ad/) (accessed 25 January 2008).
- 10 As our AD initiation and adjudication data are recorded at different level of industry disaggregation, we are not able to run two-stage selection models in this paper.

### NOTES ON CONTRIBUTORS

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