

The Reasons for and the Impact of Antidumping Protection: The Case of People's Republic of China

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1. Introduction

Over the past few decades, the liberalization in international trade has progressed at rapid speed. Many traditional forms of barriers to trade, most importantly tariffs and quotas, have been reduced worldwide. Accompanying this great reduction in trade barriers has also been a great expansion in trade. Trade to GDP ratio has increased 86.1 percent from 1950 to 1990, and a large proportion is likely to be accounted by the reduction in trade barriers. (Bergoeing and Kehoe 2003). While tariffs and quotas have been and continue to be reduced, another type of trade barrier, antidumping, is being used more and more frequently as a measure of protection. (Prusa and Skeath, 2002). Further complicating the role of antidumping is the fact that the economies who are being affected by antidumping protection has changed over time; traditionally antidumping was used by and against developed economies, but over the past decade developing economies have emerged as frequent targets (and users) of antidumping (Prusa, 2001; Fu, 1997).

In this paper, we focus on the case of China, to explore the characteristics, the reasons for and implications of antidumping. China initiated trade liberalization about 25 years ago, and since has observed an accelerated increase in exports. Coincidental with its increased exports, China has also become the largest targeting economy of antidumping (AD) trade disputes. There are many aspects of AD that explain why China is more susceptible to

antidumping, including its non-market economy (NME) status. Yet, as suggested by Blonigen (2003), even after controlling for all these unfavorable factors, China is subject to an inexplicably large number of antidumping attacks.

The literature on antidumping against China includes several articles that review the use of AD by EU (Vermulst and Graafsma, 1992; Liu and Vandebussche, 2002; Mai, 2002; Eeckhout, 1997; Wang, 1999), and two that examine the US AD cases (McGee, 1999; Kao, 1990). A recent working paper by Messerlin (2002) also discusses the characteristics of AD activity against China.

Our paper builds on the previous studies, and make new contributions in analyzing the reasons for China being so broadly and intensively targeted. In particular, the domestic characteristics of exports structure and industrial structures are examined. Our analysis also reveals that foreign direct investment (FDI) may be a significant factor explaining AD cases against China. There is also evidence that low concentration ratios in Chinese industries have contributed to the competitive price and low profit margins.

The next section discusses the characteristics of AD cases targeting Chinese imports. We then analyze the reasons for AD activity against China and discuss some implications for the Chinese economy. We make a few concluding comments in the final section.

2. Characteristics of AD Cases Against China

We would like to establish a set of stylized facts about AD targeting China, focusing on the size, trend, intensity, and broadness.

A. The size and the trend

As it is well known, China is the largest target economy for AD cases. The total number of AD cases targeting China reached 457 by the end of 2001, making China's total only slightly lower than all of the EU economies combined. If current trends continue, China will surpass the EU in the near future. China is easily the largest target when compared with any individual economy.

In Table 1, we present the time series since 1980 of the top six economies affected by AD investigations. The US was the top target economy during the early 1980s; it was then replaced by Japan who remained the most targeted economy during the rest of the 1980s. Since 1992, China has been the top targeted economy every year. Not only is it the largest affected economy, but also the number of cases against China easily surpasses the level of the US and Japan when they were the leading targets. Overall even though China only became a significant target in the past ten years, its total number of AD cases has surpassed the US and Japan, and China has emerged as the largest targeted economy.

Not only is the number of AD cases targeting China high, but also the trend is positive and increasing at a rapid rate. The number of cases against China was relatively small in

the early to mid 1980s; since 1988, however, there has been a marked increase in the number of cases against China by both the EU and the US (Vermulst and Graafsma, 1992).

In order to quantify this trend in AD filings we have applied a simple fixed effect OLS model:

$$n_{it} = a_i + b \times t + b_i \times t$$

where

n_{it} = number of cases filed against economy i at time t (e.g., each year)

a_i = economy fixed effect

b_i = economy-specific trend

t = time trend

In table 2 we report our estimates. Note that our regression includes an time dummy for each economy; however, for space reasons we only report the parameters for the nine economies with statistically significant estimates. As shown it turns out, the time trend for most economies is insignificant; in addition, most economies with significant estimates have negative trends. There are only four economies showing positive trends: China, Indonesia, Korea and Thailand. The time trend for China is the steepest of all target economies. As can be seen in Figure 1, the other three economies with a positive coefficient have much milder slope in comparison with China. Moreover, as we will discuss later (Table 6) it is developing economies such as India and Mexico that are main contributors to the steep upward trend. Therefore, in the foreseeable future, China is

likely to stay as the most named economy in AD filings and is going to see continuing increase in the share of total AD filings.

B. The intensity

Because of China's growing international trade and growing size of the economy, it is perhaps not surprising to see it being named frequently in AD filings. After all, more trade may simply lead to more filings against it. The next question to ask, then, is whether China is also being named more intensively than other economies given its trade value. The answer is positive.

The intensity of AD against China is high. As we have already shown China is the leading AD target. In terms of international trade, China ranks as the sixth largest in the world both in terms of exports and imports. This disparity suggests the intensity of AD use against China is high. To quantify this point we compute three indicators for intensity of being targeted for AD (see Table 3). The first is the "AD-export" ratio, which is defined as an economy's share of AD cases in the world divided by its share in world exports. If an economy's AD-export ratio is above 1, it means that the economy is being targeted more than its share in exports.

Consider China's intensity number. China accounts for about 4.3 percent of total world exports in 2001, and an astounding 17 percent of all AD cases (1995-2002). Therefore, according to this measure China receives four times as much as AD investigations as one

might predict given its share in world exports (AD-export ratio = 4). Korea, Indonesia, India and South Africa are also among the other high AD-export ratio economies.

A second indicator is an economy's affirmative ratio, which is defined as the number of measures (i.e., duties levied) divided by the number of initiations targeting a particular economy. During the period of 1995-2002, 69 percent of all AD initiations against China received an affirmative final determination. While this number is high, there are several other economies that have even higher ratios, such as Japan, Russia, Brazil, Ukraine, and Singapore.

Our third intensity measure combines the first two in order to indicate the overall possibility of an economy's exports being subject to AD duties. This third measure is reported in the final column where we calculate the product of the first two measures. With this third measure, China ranks 3rd, trailing Ukraine and India. However, one needs to remember that the total number of cases against India and Ukraine combined is only 40 percent of the total against China. In this sense, China exports bear the most significant brunt of AD protection.

One important caveat: one must recognize that all of the above three measures offer only crude estimates of AD intensity. There are a number of weaknesses in these measures, not the least is that none of them accurately measure the amount of trade being affected in any given case.

C. The AD measures

The duties resulting from the final determination can be very high in AD cases against China. In many cases, the measures are prohibitive. For instance, Liu and Vandebussche (2002) and Fu (1997) examine EU AD against China. The two studies look at different time periods but both find that the AD duties imposed by the EU are high. Liu and Vandebussche (2002) report the average antidumping duty (ADD) is around 41 percent, ranging from 10 to 102 percent. Fu (1997) examines the trade impact of the duties and finds dramatic decreases in trade. For instance, after the EU imposed AD measures on Chinese exports of Tungstic Oxide and Tungstic Acid, and Barium Chloride in 1988, the exports of these products from China to the EU dropped by 96 percent in four years. Similarly, exports of small color televisions, polyester yarns and videotapes in cassettes dropped over 90 percent.

We have compiled antidumping duty (ADD) data for the US against Chinese exports; our result indicates even higher ADD than observed by the EU against Chinese exports. Among the 60 AD cases for which we have information on ADD, 11 had ADD above 100 percent, and 6 of them the ADD is above 150 percent; 17 cases had ADD duties between 50 and 100 percent. Altogether, nearly half of US cases against China had ADD above 50 percent. The average ADD is 54 percent

The AD duties from the developing economies (what are often referred to as the new users) tend to be even higher than those applied by the EU and US. For example, Brazil

currently has ADD imposed on 12 types of Chinese products, with margins ranging from 35.8 percent to 203.4 percent, with an average around 77 percent.

D. The sectors being named

We also investigate the type of Chinese products that are targeted by AD investigations. Our results indicate that the range of industries that have been the targets for AD is amazingly wide. In terms of two-digit ISIC classification of industries, all 2-digit manufacturing industries have been targeted (Table 4). In terms of three-digit ISIC classification, 26 out of total 29 (3-digit) ISIC manufacturing industries. Such widespread coverage not only demonstrates China's diverse economy and widespread comparative advantage, but it also demonstrates how comprehensive and versatile tool antidumping can be, allowing an economy to protect virtually any filing industry, regardless whether the industry has comparative advantage.

Despite the breadth of Chinese industries being targeted, the frequencies for some industries are particularly high. Four sectors account for 80 percent of all AD filings: "Manufacture of Chemicals and Chemical, Petroleum, Coal, Rubber and Plastic Products", "Manufacture of Fabricated Metal Products, Machinery and Equipment", "Textile, Wearing Apparel and Leather Industries", and "Basic Metal Industries". The first two sectors account for 55 percent of all AD filings. The filing trends suggest that the simple basic manufacturing industries which China has its greatest cost advantages are also the ones being hit the hardest by AD.

The most frequently targeted industries at the four-digit classification level are “Manufacture of basic industrial chemicals except fertilizers” and “Iron and steel basic industries”, which together account for 25 percent of all filings. Activity against the other 4-digit sectors are fairly evenly spread out, with 19 sectors having been subject to 9 to 23 cases, and 37 sectors named from once to six times (Table 5).

E. The filing economies

The next issue we examine is the question of who is targeting Chinese exports. We find that China has been targeted by a wide array of economies. Treating all EU members as one economy, there have been 25 economies that have launched AD investigation against Chinese exports.

Among the top initiators are: US, EU, India, Australia, Argentina, and Mexico; together they account for 72 percent of all AD cases filing against China. AD activity, therefore, is concentrated among a handful of major users. In order to examine whether there are significant differences in the filing intensity we computed each economy’s filing intensity and relative filing intensity as:

$$\begin{aligned} \textit{Intensity}_i &= \textit{Number of filings against China}_i / \textit{Imports from China}_i \\ \textit{Relative Intensity}_i &= \textit{Intensity}_i / \textit{Intensity}_{US} \end{aligned}$$

As shown in Table 6, South Korea, the US and EU are among the least intensive economies using AD to target Chinese exports. Developed economies with high

intensities are Australia and New Zealand, which are 8.4 and 11.5 times more likely to file an AD case relative to the US. The truly large users are developing economies such as Argentina (relative intensity=46.8), Peru (42.4), India (18.1) and Mexico (15). Not surprisingly, these economies all compete in labor-intensive industries that are most likely losing (or have lost) comparative advantage in those industries to China.

In summary, with respect to AD investigations targeting China we have shown that:

1. China constitutes the largest single economy being targeted by AD investigations;
2. The trend in using AD against China is positive and is growing faster than any other economy;
3. The intensity which Chinese exports are targeted is high; the likelihood that ADD are imposed is high;
4. When they are imposed, AD duties are very high, often prohibitive;
5. The sectors covered is broad, nearly comprehensive;
6. A large number of developing and developed economies target Chinese exports; filing intensities varies widely across filings economies.

While in some respects China is not unique as many developing economies have broadly similar stories of AD abuse, especially in terms of the high intensity and high likelihood of duties being levied. Taking all factors together, however, China clearly emerges as the economy most severely affected by AD.

3. The Reasons for High China's AD Intensity and High AD Duties

In this section, we investigate the reasons for the large number and high intensity of AD investigations targeting China, as well as the high AD duties in AD cases against China.

First we document the likely contributing factors that are shared with other economies, such as the strategic use of AD, NME status, the role of cumulation, and inexperienced and ineffective legal defenses. We then focus on a couple of factors that are very unique in China, the roles played foreign direct investment (FDI) through foreign invested enterprises (FEI) and the low concentration ratio in many Chinese industries.

A. AD as a learned strategy for domestic firms blocking foreign competition

To what extent is AD a learned strategic behavior? How can we account the proliferation of AD across industries and across economies? Prusa and Skeath (2002) and Fu (1997) argue that it is likely that firms learn that AD can be used strategically to block foreign competition. In the case of China, because of its rapid increase in trade, the publicity about China is abundant. Publicity about China lowers the cost of acquiring information needed in the AD petition. We have examined the possibility of copying from the same industries across economies in launching AD investigations as an indication of an informational spillover. A simple measure is to check how many antidumping cases for the similar products occur within one year of one other in different economies (e.g., similar case against Chinese exports by both EU and US within one year). If a case is

launched shortly after a similar case by another economy, we will say the second “echoes” the initial filing.

We find that there have been 83 cases against China that could be said to echo. That is, these cases were initiated within one year of another economy initiating an AD case involving the same or very similar products. Cases involving textiles and footwear frequently echoed. For example, in the case of textiles, EU, Mexico, Turkey and Peru each launched AD investigations on a wide array of textile products within a short time frame.

We believe our measure is conservative in two senses. First, we restrict our measure to only one year, however, a span of 18 month or longer could be reasonably called an echoing period. Moreover, the learning could occur across wide array of products (echoing within an economy rather than between economies). For example, Mexico had AD investigations covering HS codes 52, 53, 54 and 55, and Peru had investigations covering “various fabrics”. Simply put, it seems likely that the learning occur across industries, which is a type of learning that our measure does not capture.

Can AD initiation be a learned tactic for declining industries? This seems to be a very logical tactic for some industries. It is fairly commonly observed that AD investigations involved the same (or similar) line of products are filed repeatedly over time. Steel is perhaps the best example where both the US and EU have filed AD investigations involving many types of Chinese steel over the past decade. Australia launched

investigation on canned pear and peaches, and soon thereafter started investigation on canned tomatoes. In EU, the AD investigation against Chinese made cotton fabrics was initiated three times in 1994, 1996 and 1997.

Therefore, it seems that AD protection can be contagious across economies and becomes a learned behavior over time. If an AD action against foreign competitor can achieve an affirmative result with a high probability, or if it deters the imports through litigation costs, then AD is more likely to become a learned behavior. Unfortunately, this seems to be the case. According to various studies (Prusa and Skeath 2002, Fu 1997), AD investigations have successfully deterred imports and raised profitability of initiating firms, therefore, the economic rational for troubled firms to initiate AD is very strong.

B. Non-market economy (NME) status

There are a few widely recognized reasons that Chinese exports receive disproportional amount of AD investigations. China's non-market economy status is arguably the most commonly cited explanation.

The GATT/WTO antidumping rules allow an investigating economy to not use the exporter's domestic prices when calculating the home market sales, input costs, etc. Being classified as a non-market makes it extremely difficult (virtually impossible) for exporting economy to defend itself. China has always been classified as a non-market

economy. In the accession protocol to WTO, China agreed that this non-market treatment would not be phased out for another 15 years (will expire in 2016).

The argument is that China is not considered a market economy; thus Chinese domestic prices do not reflect the true cost of these inputs as determined in the markets. Therefore, during the investigation of antidumping case targeting China, the investigators do not have to use the Chinese domestic input prices in determining the cost of the production of the investigated product.

This practice renders greatly increases China's risk in dumping allegations because the low cost of labor services is its major comparative advantage for international trade. In practice, China's non-market economy status hands greater discretionary power to the investigators, who have the option to choose an economy with high prices when evaluating the cost of inputs in China. For example, in a recent investigation in brake rotors by the US, the handling and freight cost was calculated using India cost. India is known for higher cost of transportation than most of its neighbors.¹ Therefore, using India price would increase the likelihood of affirmative result.

Even though non-market status contributed to unfavorable determination in AD investigations against China, it is probably not sufficient to explain the large number of cases targeting China (Blonigen, 2003). Even after controlling for China's non-market

¹ [Federal Register: January 8, 2003 (Volume 68, Number 5)][Page 1031-1038] [DOCID:fr08ja03-24] [A-570-846] Brake Rotors from the People's Republic of China: Preliminary, Results and Preliminary Partial Rescission of the Fifth Antidumping, Duty Administrative Review and Preliminary Results of the Seventh New Shipper Review.

status, Blonigen still finds a significantly positive unexplained “China factor”. Therefore, there are other factors that are not yet well captured or measured by economists that contribute significantly to China’s being the largest targeted economy.

C. Cumulation

Cumulation is another factor that increases the number of cases against China. As is well known, China has experienced a rapid expansion of the international trade. Its share of world trade has increased seven-fold and China’s volume of international trade increased 40-fold during 1977-2001.² With the rapid growth of international trade, it is inevitable that the China’s import market share in a particular economy will rise rapidly from non-existent or very small to above the low threshold for cumulation. Therefore, even though Chinese imports in many products still capture only a small proportion of the market, with the cumulative assessment of the market share, China is included in the investigation even though China is not (at the time of the filing of the case) a significant exporter to foreign markets. Hansen and Prusa (1996) document that the mandatory cumulation in 1984 in the US has led to significant increase in the possibility of finding injuries. Since most AD initiations against China have occurred since the late 1980s, therefore, cumulation has likely contributed to the large number of cases filed against China as well as the intensity against China.

D. Weakness in corporate governance prevents effective defense in AD investigations

² The data source is World Development Indicator 2003.

It has been noted that, especially in the first decade of facing AD investigations, Chinese enterprises have not coordinated well or presented their case in an effective manner. This reflects the overall weakness of Chinese enterprises in terms of the backward corporate governance practice, and also the overall weakness of the nationwide legal infrastructure.

Chinese enterprises often do not respond in a timely manner, and cannot afford high cost for hiring lawyers of experiences, and in some cases just not responded at all. China has a tradition of having a weak legal system, and Chinese traditional values do not encourage litigation. The SOE status is much to account for this behavior, where the managers have little incentive to fight for the SOE's behalf where they personally have little stake.

Moreover, even when some are willing to cooperate, they lack the authority as well as the necessary skill and information to respond effectively.

On top of this, the macro coordination effort still needs improvement. One piece of evidence is that among all 53 cases of the WTO dispute involving antidumping issues, none has been filed by China.³ In fact, China is the only one economy among the top-ten target economies that has not filed a single WTO dispute on AD issues.

China was not eligible to file complaints to the WTO Dispute Settlement Body (DSB) before it became a member in 2002. Yet, of the approximately 200 AD cases targeting

³ See http://www.wto.org/english/tratop_e/dispu_e/dispu_subjects_index_e.htm#bkmk4 for list of AD disputes.

China annually, it is unlikely that all cases are handled in conformity with WTO laws. It is still unclear if China will begin to lodge some complaints to DSB in the near future.

It remains to see whether filing complaints has any impact on the cases initiated or not. If it does, as common sense would predict, then the fact that China does not use the DSB might lead the initiating economy over-reach in its efforts to levy ADD on cases against China. This issue is not a factor controlled in Blonigen's (2003) study that found a significant positive "China effect" in AD activity. Future research should examine whether WTO DSB has any deterrent effect on AD activity.

E. Foreign direct investment and the "antidumping (AD) triangle"

Once China relaxed the regulations governing FDI in 1992 inward FDI has increased dramatically. Currently the foreign invested enterprises (FIE), the firms with FDI, account for roughly 50 percent of both Chinese imports and exports.

Blonigen (2000) documented that FDI is one means for a foreign firm to avoid a tariff or AD duty or what he refers to as tariff-jumping. We explore the related hypothesis that FDI might play an important role in explaining the large number of AD filings against Chinese exports. A significant amount of Chinese FDI has been from the four East-Asian Tigers and has resulted in Chinese-sourced exports have replaced exports from parent company home markets. It is natural to hypothesize that AD filings against China are

also replacing AD filings against these economies. This is a particular type of tariff jumping by multinationals not previously discussed in the literature.

Due to data limitation, at this time we cannot fully explore the “AD triangle” hypothesis. What we can do, however, is document the correlation of FDI flow into China with the number AD filings against China. Our result shows that the number of AD filings against Chinese exports is increasing significantly in FDI. The estimating equation is:

$$n_t = a + b_1 \ln(FDI_t) + b_2 \ln(Exports_t) + b_3 (Exchange\ rate_t) + e_t,$$

where

n_t = number of cases filed against China at time t (e.g., each year)

FDI_t = inward flow FDI at time t

$Exports_t$ = Chinese exports at time t

$Exchange\ Rate_t$ = exchange rate (Yuan per dollar) at time t

Because the dependent variable is a count variable, we use Poisson regression model. As can be seen in Table 8, FDI is the only significant explanatory variable, and it is significant at the 99 percent level. Exports are statistically insignificant and the exchange rate has wrong sign.⁴ As shown in Figure 3, the high correlation between FDI and AD filings is obvious. This simple regression lends strong support for the notion that Chinese

⁴ When we test each explanatory variables individually, they are all-significant and have correct signs, but the FDI has the highest pseudo r-square value.

FDI inflow plays an important role in the number of AD cases filed. This is also consistent with the proposed special type of tariff jumping, the “AD triangle”.

F. Low concentration ratio in Chinese industries

One particular feature of Chinese industries is their very low concentration ratios. Existing studies focus on the geographic concentration, which is high (Amiti and Wen 2002). However the market concentration is very low. Even though no much literature has been found on this, low concentration is a well-recognized fact, and in the *Tenth Five-year Plan on Industrial Structure Adjustment*, the fact that production concentration is low was recognized as one of the major problems of current industrial structure in China. According to the analysis in the Third Industrial Census (National Statistic Bureau 2003), one of the major problem is “small and scattered scale of industrial organization”.

A brief comparison can demonstrate the huge difference in concentration level in industries between China and the US. In the US, 50 largest industrial firms count for 23% of total production in manufacturing (in year 1997), and top 201 firms count for 60% of total⁵. Whereas in china, 375 largest firms produce 16% of total industrial output in 2001, and it takes an enormous number of 22,987 firms to produce 60% of total industrial output⁶. The difference is huge. Even though the US data is for manufacturing only and China data is for all industries including manufacturing, utility and mining sectors, it does not affect the result much. In the US, mining counts only 4% and utility counts for 9% of

⁵ Data source: 1997 Economic Census, US Census Bureau.

⁶ Data source: Table 13-1, China Statistical Yearbook, 2003.

industrial output, thus it can only affect slightly the overall US concentration level presented above⁷. Therefore, the statistics strongly indicates that Chinese industries are far less concentrated than that of the US.

Given very low production and market concentration, profitability of Chinese firms is reduced. The low profit margins, when facing AD investigation, which typically specify high profit margin when evaluating cost of production, can lead to higher imposed duties. This is still only a hypothesis and need further investigation whether its impact is significant enough leading to quantitative impacts on AD determinations. The low profit margin in Chinese firms can also lead to undercutting the exports prices, which will lead to more AD initiations.

The mirror problem of the low concentration and low profit margin in Chinese industries is the relatively high concentration ratio and higher profitability in many major AD initiating economies. In the highly concentrated industries, the firms exhibit more strategic behavior, and are more likely to utilize the tool of AD regulation to block the foreign competition. This has been confirmed by the study on EU AD (Liu and Vandebussche, 2002) who document that the majority of AD files are filed by highly concentrated industries; in many cases monopolists and oligopolies in the EU market; a very small proportion (less than 15 percent) involve not so concentrated industries. This statistic also applies to the US, another major user of AD, where the industrial

⁷ In fact, the utility sector in the US is also very concentrated, with 4 largest firms counting 15% of total revenue of the sector. The mining sector is less concentrated, but with its 4% share of total output, it will produce only negligible impact on overall concentration level. Data source: 1997 Economic Census, US Census Bureau.

concentration among industries using AD is high (Hansen and Prusa, 1996). In many respects, this finding illustrates one of the great ironies of AD regulation --- instead of creating “fair” competition, it punishes the competitive international industries, and encourage uncompetitive domestic behavior.

4. Implications

It is a difficult task to evaluate the impacts of AD on China. One reason is the lack of data, but another is that the dynamic impacts are yet to be fully understood. For instance, the US uses individual treatment, which often gives one (or a few Chinese exporters) smaller ADD and all other Chinese exporters, current or future, a very high ADD. In this case it not only alters the trade pattern, it also will affect the industrial structure in China. However, these effects are hard to use a formal treatment to estimate, therefore in this section we only discuss qualitatively some likely impacts of the large, growing, intensive, severe, and broad AD filings against Chinese exports.

The amount of Chinese exports affected by AD, among trade remedies, is the second largest, only trailing technical barriers. According to Yue (2003), the cumulated amount of exports that have been affected has reached 16 billion US dollars. Fu (1997) estimates that about 5 percent of Chinese exports to EU are affected by EU AD filings. This number is very large considering the strong deterring effect of AD investigation on imports. In comparison with tariffs, ADD are very high and target the particular products.

As we have discussed in the intensity of AD from various economies, EU is modest in terms of intensity of filing, therefore, it is very likely in other economies, the trade affected will be much higher than 5 percent of total. Therefore, the amount of trade affected is very significant. The cost is also to employment, which will be adversely affected through the decrease in exports, which will further complicate China's continuing economic transition.

Moreover, learning from the lessons of antidumping, some Chinese manufactures have begun to form alliance, restricting the price of exports to the US. For example, the apple cider producers in China now meet annually to determine the minimum price to the US. It is natural to see more and more firms become aware and begin to charge higher export prices toward major users of AD. This might contribute toward increasing the concentration ratio in Chinese industries, or even create monopolies or oligopolies in exports markets.

Moreover, according to our finding on the role of FDI in explaining the AD filings, the multinationals or foreign investors are likely hurt by AD filings against Chinese exports.

Will China become a new important user of AD? We think yes. The number of cases filed by China is increasing rapidly. We have illustrated in Figure 4 the number of cases initiated by China, which has a clear positive trend. There is no evidence China has used AD as a retaliation toward economies filing AD against Chinese exports, however, it should be recognized that China has its own industries to protect, and it might find that

AD can be a very convenient instrument for protection. The ongoing pressure of unemployment, and the fact that much needed expansion of Chinese exports sector employment is constrained by the foreign AD filings, it is natural for China to use the same tool to retain employment. If this occurs, AD will lead to mutual welfare worsening effects.

5. Conclusion

We have examined the case of AD filings for Chinese exports, the largest in the world, in this paper, and document the characteristics of these AD filings. We have shown that AD activity against China has involved and continues to involve a large number of filings; that AD use against China is increasing; that intensity of AD use against China is high; that Chinese cases often involve very high duty levels; that AD cases against China have broad industrial coverage, and have been initiated by many economies. We then analyze the possible causes and/or contributing factors for the use of AD against China. Besides common factors being recognized by other studies, such as non-market economy status and cumulation, we have found two important and unique contributing factors in China, the FDI inflow and the low concentration ratio in Chinese industries.

The FDI hypothesis is related with studies on tariff jumping, yet it is different that it involves not investing in the AD initiating economy, which might not have comparative advantage. Some of the FDI inflow to China might be from foreign firms that were subjected to anti-dumping, either in its home economy or a third economy that it had

foreign investment, to relocate to China, which has not been subjected to AD filings yet and which has comparative advantages in these industries. We are not able to directly test this hypothesis, however, our result is consistent with it. It requires multi-economy study to further explore the validity of this hypothesis.

Our review of AD filings against China has confirmed that the AD practice can be very convenient and effective tool to deter trade and that it has a number of dynamic impacts that are hard to quantify. China is likely to follow other new users of AD if the filings against Chinese products continue to rise and obstruct the creation of employment in export sector to absorb unemployment from the dismantled industries as a result of WTO transition and other reforms. Should this happen, significant welfare cost will occur to both China and its trade partners.

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Table 1. Top Six Antidumping Targets, 1980-2001

	CHINA (PRC)	USA	SOUTH KOREA	JAPAN	USSR (FORMER)	CHINESE TAIPEI	OTHER	TOTAL
1980	1	20	.	5	.	.	43	69
1981	1	11	5	9	1	4	62	93
1982	8	20	17	19	.	5	148	217
1983	8	16	12	21	.	10	106	173
1984	6	13	9	19	2	7	95	151
1985	8	14	12	20	1	12	135	202
1986	6	14	11	18	.	11	100	160
1987	1	18	8	19	1	6	66	119
1988	5	10	12	18	.	8	69	122
1989	4	8	6	10	1	6	61	96
1990	12	18	11	13	3	11	97	165
1991	16	16	12	18	16	10	140	228
1992	31	26	25	14	19	15	190	320
1993	45	31	17	11	21	11	161	297
1994	44	14	8	7	37	5	119	234
1995	20	12	14	5	9	4	92	156
1996	43	21	11	6	11	9	123	224
1997	33	15	15	12	17	16	135	243
1998	28	15	24	13	21	10	136	247
1999	41	14	34	22	29	22	187	349
2000	43	13	22	9	18	16	157	278
2001	53	13	19	12	13	19	211	340
TOTAL	457	352	304	300	220	217	2633	4483

Table 2. Filing Trends Over Time

Levels	
Baseline Time Trend	0.280 [0.143]
(Japan)*Time Trend	-0.498 [0.185]**
(Indonesia)*Time Trend	0.923 [0.294]**
(South Korea)*Time Trend	0.41 [0.190]*
(Thailand)*Time Trend	0.451 [0.217]*
(PRC)*Time Trend	2.091 [0.185]**
(Czechoslovakia)*Time Trend	-0.847 [0.324]**
(Poland)*Time Trend	-0.402 [0.190]*
(Romania)*Time Trend	-0.382 [0.190]*
(New Zealand)*Time Trend	-0.496 [0.206]*
Observations	806
R-squared	0.81
Standard errors in brackets	
*significant at 5%; ** significant at 1%	

Note: Only economies with statistically significant time trends reported

Table 3. Top Twenty Antidumping Targets and Intensity Measures, 1995-2002

Rank	Affected Economies	AD cases (95-02)	AD Share (%)	ADshare/ Exportshare	Affirmative Ratio (%)	Product of the two intensity measures
1	China, P.R.	308	14.3	4	69	2.76
2	South Korea	160	7.4	4.8	52	2.50
3	United States	115	5.3	0.4	58	0.23
4	China, Taipei	109	5	4	63	2.52
5	Indonesia	91	4.2	4.7	43	2.02
6	Japan	88	4.1	0.6	73	0.44
7	India	82	3.8	5.9	54	3.19
8	Thailand	81	3.8	3.4	59	2.01
9	Russia	77	3.6	2.1	71	1.49
10	Germany	70	3.2	0.3	46	0.14
11	Brazil	68	3.1	3.5	75	2.63
12	South Africa	46	2.1	4.3	52	2.24
13	Ukraine	46	2.1	7.1	83	5.89
14	Malaysia	40	1.9	1.3	59	0.77
15	United Kingdom	40	1.9	0.4	58	0.23
16	Italy	39	1.8	0.5	48	0.24
17	Spain	37	1.7	1	59	0.59
18	France	32	1.5	0.3	54	0.16
19	Singapore	32	1.5	1.3	72	0.94
20	Turkey	30	1.4	2.8	41	1.15

Note: Chinese and Indian exports share are 95-02 average, while others using 2002 share. The reason is that other economies do not exhibit significant changes in share of world trade.

Table 4. Chinese Exports Affected by AD by Two-digit ISIC Classification

Industries	Number of AD cases
35 - Manufacture of Chemicals and Chemical, Petroleum, Coal, Rubber and Plastic Products	158
38 - Manufacture of Fabricated Metal Products, Machinery and Equipment	105
32 - Textile, Wearing Apparel and Leather Industries	62
37 – Basic Metal Industries	55
36 - Manufacture of Non-Metallic Mineral Products, except Products of Petroleum and Coal	31
39 - Other Manufacturing Industries	21
31 - Manufacture of Food, Beverages and Tobacco	17
34 - Manufacture of Paper and Paper Products, Printing and Publishing	8
33 - Manufacture of Wood and Wood Products, Including Furniture	6
11 - Agriculture and Hunting	4
29 - Other Mining	4
23 - Metal Ore Mining	3

Table 5. Chinese Exports Affected by AD by Four-digit ISIC Classification

Rank	Sector Description	ISIC4	No. AD cases
1	Manufacture of basic industrial chemicals except fertilizers	3511	80
2	Iron and steel basic industries	3710	46
3	Manufacture of other chemical products	3522	23
4	Manufacture of footwear, except vulcanized or moulded rubber or plastic footwear	3240	19
5	Manufacturing industries not elsewhere classified	3909	19
6	Manufacture of fabricated metal products except machinery and equipment not elsewhere classified	3819	18
7	Manufacture of chemical products not elsewhere classified	3529	17
8	Manufacture of textiles not elsewhere classified	3219	15
9	Manufacture of cutlery, hand tools and general hardware	3811	15
10	Canning and preserving of fruits and vegetables	3113	14
11	Manufacture of glass and glass products	3620	14
12	Manufacture of motorcycles and bicycles	3844	14
13	Manufacture of wearing apparel, except footwear	3220	10
14	Manufacture of synthetic resins, plastic materials and man-made fibres except glass	3513	10
15	Manufacture of non-metallic mineral products not elsewhere classified	3699	9
16	Non-ferrous metal basic industries	3720	9
17	Manufacture of fertilizers and pesticides	3512	8
18	Manufacture of plastic products not elsewhere classified	3560	8
19	Manufacture of radio, television and communication equipment and apparatus	3832	8
20	Manufacture of electrical appliances and housewares	3833	7
21	Manufacture of electrical apparatus and supplies not elsewhere classified	3839	7
	All others		104

Table 6. The Initiating Economies Targeting Chinese Exports

Initiator	Number of Filings	Exports from China (million US. dollars)	Intensity Relative to US
US	87	54359	1.0
EU	66	40953	1.0
India	55	1896	18.1
Australia	48	3570	8.4
Argentina	43	574	46.8
Mexico	43	1790	15.0
Canada	21	3346	3.9
Brazil	20	1351	9.2
South Africa	16	1049	9.5
Korea	14	12521	0.7
Peru	12	177	42.4
Turkey	12	674	11.1
Venezuela	10	443	14.1
New Zealand	8	435	11.5
All Others	19		

Source of exports data: *Direction of Trade Statistics Yearbook 2002*.

Table 7. Economies that Initiated WTO Disputes on Antidumping Measures

Initiating Economy	No. of disputes
European Community	9
Mexico	9
Brazil	7
India	5
Canada	5
United States	4
South Korea	4
Japan	3
All Others	14
of which China	0

Source: WTO official website,
http://www.wto.org/english/tratop_e/dispu_e/dispu_subjects_index_e.htm#bkmk4

Table 8. Poisson regression: Effects of FDI on AD filings

Number of obs = 17
 LR chi2(3) = 175.27
 Prob > chi2 = 0.0000
 Pseudo R2 = 0.5758
 Log likelihood = -64.568

	Estimate	Std.Err.	t-stat	p-value	[99% Conf. Interval]	
FDI	0.7701904	.1495	5.15	0.000	.3848	1.155
Exports	0.1133838	.2241	0.51	0.613	-.4639	.6907
Ex. Rate	-.1553	.0863375	-1.80	0.072	-.3776	.0671
Constant	-1.050289	2.075	-0.51	0.613	-6.396	4.295

Figure 1. Filing Trend Over Time

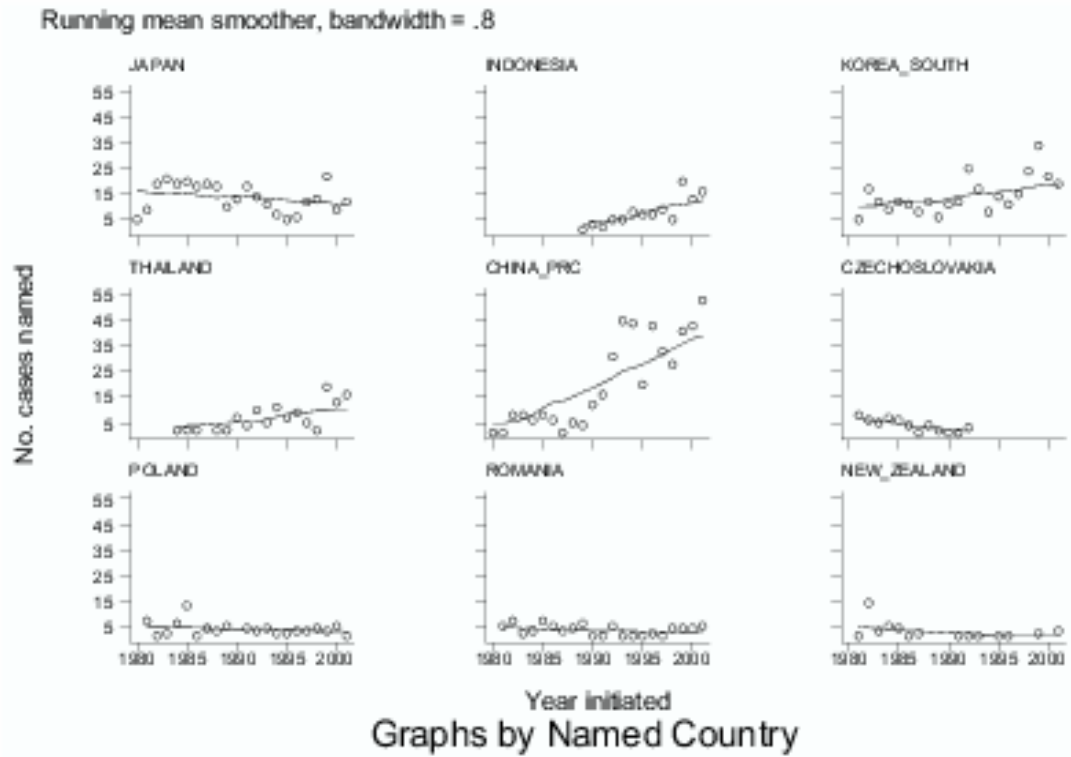


Figure 2. The Antidumping Duties Imposed by the US on Chinese Exports

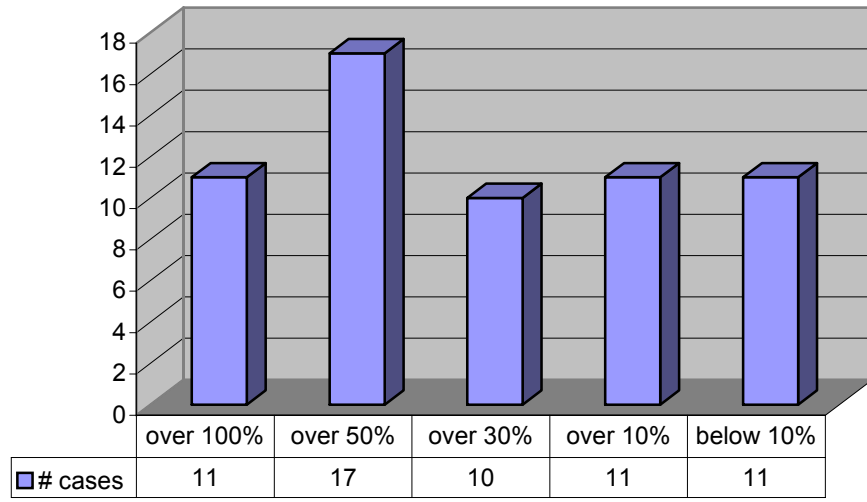


Figure 3. The AD filed against and the FDI in China

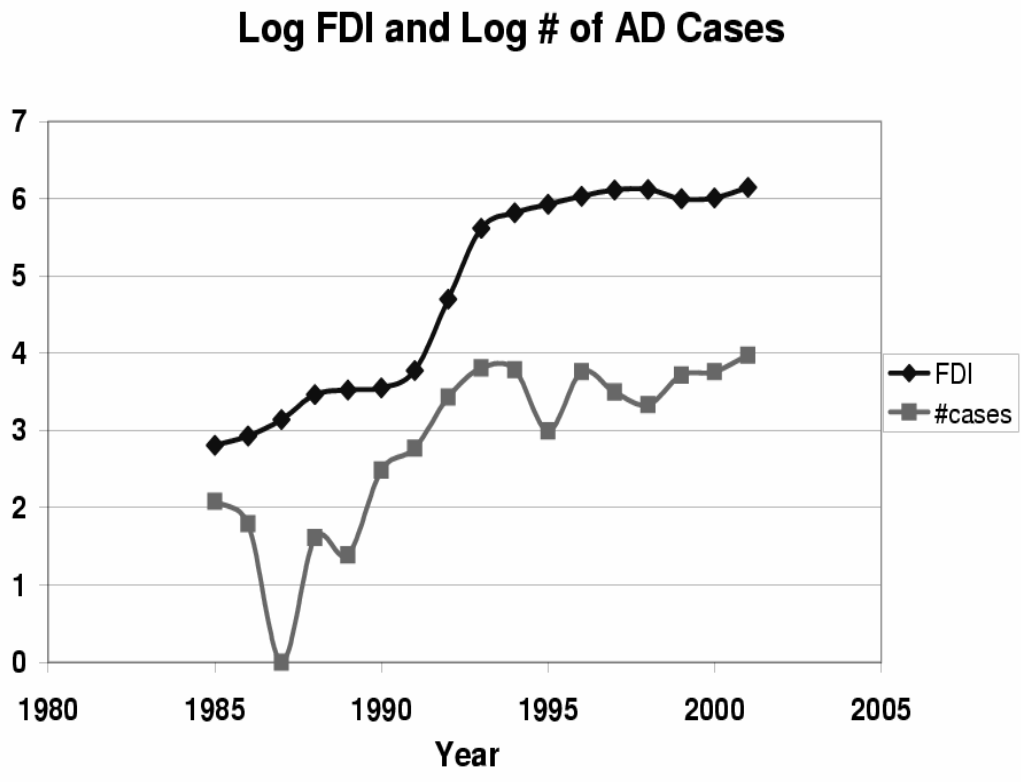


Figure 4. Number of AD Cases filed by China

