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## Chinese Manufacturers' Response to 'Trade Remedies': From Dumping to Intelligent Trading

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## Chinese Manufacturers' Response to 'Trade Remedies': From Dumping to Intelligent Trading

### **Abstract**

Chinese industries are awakening to the reality that they may lose their share in the already shrinking European market due to confrontations over anti-dumping duties and allegations of circumventing the duties. Apart from the instances of anti-dumping wars, Chinese manufactures are worried over their market share being taken over by much smaller emerging economies. The increasing production costs, growing competition and dumping wars are making prospects of Chinese manufacturers from coastal provinces bleak as those regions are already going through a spell of lower productivity. This article attempts to reflect the growing insecurity among the manufacturing bases around China and new strategies that the factories are implementing to survive. Chinese enterprises are diversifying their export structures, investment priorities and market focus while trying to become less vulnerable to shocks and instability. Such innovative ideas were essential in order to run the businesses with minimal infrastructural changes. The anti-dumping wars and contentious external trade policies have changed the outlook of local enterprises.

**Keywords:** anti-dumping, solar panels, ceramic, exports, innovation

### **Introduction**

The Chinese manufacturing industry played a dynamic role in expanding limits of its geo-economics. The trade relations and the economics behind it proved crucial to ascertain China's global rise. As China is embracing the more open international trading system mandated by the WTO, the counter effect of such phenomenon is also disturbing China. The Chinese economy faces enormous pressures as a number of protectionist measures in the form of invoking antidumping provisions have been sought by its trading partners. China's major trading partners including Germany, U.S., Japan, India and EU as a region are imposing anti-dumping duties against Chinese products, which are threatening Chinese industries. For the Chinese enterprises, EU has been the largest trading partner and these trading relations have been a central and an important driver to the developments of contemporary China-Europe relations. Closer Sino-European ties have seen a steady convergence of interests between the two blocks. Chinese manufacturers, whose share in the European market rose substantially, influenced commodity markets, consumer markets as well as capital goods markets in Europe. However, as economic engagements grew intense, the concomitant tensions in their economic and trade relationship rose to prominence. A number of trade allegations have shadowed increasing investment by Chinese firms in EU and Chinese occupancy in the European market. EU had been accusing Chinese firms of employing preferential policies that give an edge to the Chinese manufacturers to compete in the European market, creating unfair competition (European Commission 2012). Chinese industries' success in the European market has been related to the logic of 'pricing', which looks unrealistically low for the local EU competitors. As a result, at a number of times, EU has taken a protectionist stand towards China's trade with European countries (Rovegno 2011: 2-3).

In 2004, EU replaced US as the largest trading partner of China. Ever since, Europe's bilateral trade deficit with China has risen sharply. In 2012, trade deficit was 145.8 billion euros with China and this laid the foundation for continuous trade disputes (European Commission 2013).

Increasing number of restrictions in the form of anti-dumping duties (ADs), countervailing duties (CDs) and instituting a body to monitor foreign investments has countered this surge. These trade restrictions led the changes in Chinese industrial structure. This paper attempts to analyse the nature of response from Chinese industry, which has been subjected to ADs. To understand the issues and responses better, the paper has taken two industries as cases to map the ongoing transformations. Case one will focus on Chinese photovoltaic (PV) industry and Case two will highlight the way Chinese ceramic industry is coping with the higher duties in EU.

## **Trade Remedies and Chinese Manufacturing Industry**

The manufacturing sector in China is coping with challenges posed by the ADs and CDs around the world. EU, US and even smaller countries block Chinese products under the pretext that these products harm indigenous economies due to their pricing competitiveness. The products put under restricted trading range from ceramics, porcelain, saddles, solar panels, certain candles, tapers, bicycles, Chamois leather to certain types of chemicals. As debates over manipulating ADs continue, every investigation into anti-dumping has made Chinese manufacturers introspect. EU is not only the largest trading partner of China but it also is a leader in launching multiple investigations against Chinese products. From 1998 to 2008, EU initiated 73 anti-dumping investigations on Chinese products, higher than any other country (Davis 2009: 11). By April 2013, the bulk of EU's anti-dumping cases, about 80 per cent, belonged to imports from China (Bilby 2013). The important investigations targeted products involving chemicals and industrial component parts. This underlines how EU's growing dependence over Chinese commodities corresponded with the growing number of anti-dumping cases against China.

The trading restrictions in the form of ADs led to trade wars between EU and China. The restrictions led by EU have forced the Chinese enterprises to revise their trade strategy. It is a fact that Chinese provincial governments and enterprises promoted certain industries to flourish quickly and get higher returns. Lack of innovation, haste to compete in the market with minimal market study and replicating business strategies put Chinese firms at risk. Whether it was ceramic industry, solar panels PV or leather, Chinese enterprises could sustain at lower margins along with the help of tax subsidies given by the government. However, the investigation and subsequent listing of Chinese products for levying anti-dumping duties has changed the approach of Chinese enterprises. To elaborate the responses from the Chinese industry in detail, two case studies have been taken into consideration in this paper.

### **Case I -Photovoltaic (PV) Industry**

The EU is China's largest export market for PV products. Chinese Photovoltaic (PV) industry faced a tough time when the European Commission, in 2011, started enquiring into Chinese products and investigating possibilities of levying higher import duties on Chinese PV products to protect domestic manufacturers. Both parties accused each other for neglecting the general fair practices in international trade. To quote some references during those times, EU suspected that Chinese PV products are undervalued (European Commission 2013). The industry sources in Italy and France are particularly against the import of Chinese PV products in Europe, which caused a heavy blow to their domestic PV industry (Sungold Solar 2013; *People's Daily* 2012). Initially, EU was divided over the level of taxes to be imposed on Chinese companies and trade restrictions. In 2011, China had exported nearly US\$35.8 billion of photovoltaic products

worldwide, of which 70 per cent were exported to the European market only. In the subsequent year (2012), as EU had initiated the trade investigations, the trade percentage dropped to 50 per cent (*Beijing Times* 2013: 3). EU investigations put the Chinese PV business under ‘double reverse policy (anti-dumping and countervailing)’ investigation. This was the biggest anti-dumping case in the history of China-EU trade relations. Starting from September 2012, the EU ‘anti-dumping and countervailing’ investigations threatened industry ties as well as diplomatic relations. The Chinese feared that if the punitive tariffs were levied, it would lead to a large number of Chinese PV companies in to bankruptcy, causing more than 350 billion RMB loss in output, 200 billion RMB of non-performing loan risk and large-scale layoffs triggering imbalance and disorder (*Daily Economic News* 2013).

Although, for three consecutive years (2008, 2009 and 2010) China remained the world’s superpower in solar cells, in reality the PV industry in China was suffering from overcapacity and bitter competition, which led to compromising quality and flooding the EU market with unreasonable prices. In the process, the basics of sustenance were overlooked. In March 2013, the Chinese PV industry leader Suntech failed to survive through financial burdens.<sup>1</sup> Shrinking market, increasing debt and overriding cost caused bankruptcy and its eventual fall creating panic among PV manufacturers across China. In recent years, Chinese domestic ‘PV base’ has spread to a number of regions and as per the 12th Five-Year Plan for the Solar Photovoltaic Industry (2011-15), all administrative units (provinces, autonomous regions and municipalities) are advised to give priority to support the development of photovoltaic industry during the plan period (Gov.cn 2012). There are 300 cities in the development of photovoltaic solar energy industry (China Business Network 2011). From June 6, 2013, EU imposed provisional ADs on the PV products from China. For the initial two months, the tax rate was 11.8 per cent and then rose to 47.6 per cent. The provisional duty was intended to provide some span to solve the trade disputes and let Chinese factories buy some time to consult and draw plans. As per the negotiations concluded, Chinese PV manufacturers agreed to the €0.56/watt price guarantees and maximum 7 GW solar panel export cap for each year. EU agreed to cancel the ‘dual’ since August 6, 2013 (*Beijing Review* 2013). Although, consensus was reached between both parties, Chinese PV industry has deployed strategies to end the crisis in its own way.

### ***a. Seeking markets outside EU***

For a long time, the European market was the largest export market for Chinese PV manufacturers. However, since 2010, a number of countries in Europe, including France and Italy, started cutting down their subsidies for photovoltaic electric products. This led to a slowdown in demand in the European PV market, subsequently forcing Chinese PV companies to find new markets to sustain by diversifying their export market. Chinese companies continued to expand in emerging markets, including Southeast Asia, South America, Africa and parts of Asia as well. In the first half of 2013, China’s PV industry witnessed export growth vis-à-vis African and Latin American demand. As per the statistics given by China Energy Storage Network, in 2013, Asia was the largest customer of Chinese PV products, with a share of 44.78 per cent i.e. year-to-year increase of 124 per cent. During the same year, the share of exports to Europe

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<sup>1</sup>Suntech Power Co., Ltd. was established in January 2001 by the Australian-Chinese Dr. Zhengrong Shi. In December 2005, Suntech was listed in New York Stock Exchange and became the world’s largest manufacturer of solar panels and products with the production capacity of nearly 2400MW (2 GW). The company had branches in more than ten countries and employed approximately 11,000 people. On March 18, 2009, Suntech submitted an application for bankruptcy, debt restructuring and financial transactions at the Wuxi City Intermediate People’s Court. Among the major lenders including ICBC, Agricultural Bank of China, Bank of China accepted the proposal to reorganize.

went down by 62 per cent (CESN 2014). India and South Africa also look significant destinations for Chinese PV panels. Exports to India grew by 3.3 per cent (year-to-year) whereas exports to South Africa rose sharply in the first half of 2013, amounting the total export value of US\$2.5 billion, an increase by 4.49 per cent (Leiming 2013). Such performance was a result of pressures from the shrinking European market, which forced the Chinese manufacturers to turn to other markets for exports and diversify global export structure. Prior to PV crisis between China and Europe, the domestic PV exports focused excessively on the U.S. and European markets, ignoring the Asian and African markets.

Apart from these markets, the Chinese PV industry is vigorously exploring new markets in the neighbouring ASEAN countries. According to the report released by market research firm IMS Research, by 2016 the cumulative PV installations in Southeast Asia will reach nearly 5GW (CAEXPO News 2014). ASEAN economies are ideal markets for the Chinese PV industry. The Southeast Asian countries are exploring ways to improve local conditions by electrifications using non-conventional resources and pursuing low carbon economy. This need to develop solar photovoltaic industry provides Chinese PV enterprises a golden opportunity to develop their ASEAN PV export structure. On the backdrop of China-ASEAN Free Trade Area, China and ASEAN countries' trade has entered a 'zero tariff' era, so even if Chinese PV companies in the domestic production decide to export to ASEAN countries, it will benefit them substantially. Since ASEAN and China are adjacent, this adds another dimension for Chinese PV companies to provide quality customer service.

#### ***b. Focusing on domestic market***

As soon as the investigation in countervailing and dumping duties began, the Chinese manufacturers started looking for alternatives (TTCF 2012). The export structure dominated by exports to Europe proved unsustainable and immediate diversification in it was unattainable within a short span. Diversification of export structure needs investment and extensive market research, so when the European market started shrinking due to the ADs and clauses mutually agreed, Chinese could not manage the situation in the initial months. Already hit by the increased pressure from banks for non-performance, the PV manufacturers started applying their strategy to focus on the domestic market and make up some margins to sustain and cope with the financial pressures. According to U.S. investment bank Maxim Group's report, China's 10 largest solar energy companies' balance sheets were highlighting a debt totalling US\$17.5 billion, indicating that the entire industry was nearing bankruptcy (ZEITC 2012). New entrants in the Chinese PV manufacturing industry are better equipped than the existing players to deal such circumstances (CPN 2013). Compared to higher investments in photovoltaic products and capital required for the infrastructure, the revenue of the photovoltaic business needs a long term to recover the investment. As a result, the domestic market did not provide any immediate relief to PV manufacturers. Data shows that in 2011, the total global PV module production capacity was approximately 50 GW (Gigawatt), of which China had production capacity of approximately 30GW, while the domestic demand was only 2-3GW, accounting for less than 10 per cent of domestic production capacity (Economics Daily 2012: 7). With the export cap<sup>2</sup> in place (7 GW) and domestic consumption just around 3GW, Chinese manufacturers have a challenge to expand in the domestic market. Although the domestic PV market demand continues to expand, it still cannot compensate for the losses caused by restrictions in Europe and America, at least not so early.

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<sup>2</sup> The volume of import from a specific importer is defined and restricted in a quota.

It became necessary for the Chinese PV industry to alter its marketing strategy by steering the development of the domestic market, seeking PV power plants and power plant technological innovation business model to face the challenges. The PV industrial sources (manufacturers, trade associations and minor traders) started paying attention to the fact of developing the micro-grid PV power stations. The PV micro-grid, which can achieve self-control, protection and management of small-scale generation and distribution systems, is seen as the new business model, which needs least infrastructural adjustments. Given the geographical and resource advantages, establishment of micro-grid demonstration base and promoting its use as well as subsequent need of increasing the share of PV in the domestic market looks promising, especially when China is looking for viable options to reduce the excess dependence over thermal energy.

Yingli Group, one of the renowned players in the energy industry, developed a model, which exhibits how innovative strategies can help capturing the domestic PV market. Yingli devised a model called, '334' strategy, this strategy outlined the market distribution plan for the Yingli PV products in the domestic market (EO 2012). This strategy included developing 30 per cent ground facilities, 30 roof based solar structures and 40 distributed in the domestic market. It is understood that in 2011, Yingli's domestic market share was 10 per cent, and in 2012, this figure rose to 16 per cent. On July 5, 2013, Yingli Group signed an agreement with Zhumadian City (Henan province) for planning and construction of photovoltaic installed capacity of approximately 200MW power plant at Zhumadian, Suiping and Biyang (CEA 2013). Yingli has also signed strategic cooperation agreements with the Qujing Municipality in Yunnan province and the administration of Honghe Hani and Yi Autonomous prefecture (CEA 2013). Under the agreements, from the year 2016 a number of projects of building PV power plants on Yunnan's barren hills, wasteland will commence and the plants will be used to generate 3GW of energy. At the same time, this plan projects to carry out other small projects related to photovoltaic agricultural cooperation. In addition to Yunnan and Hainan, Yingli will be actively engaged in Guangxi, Guangdong and Henan province in constructing the photovoltaic power generation projects. With the focus set on the domestic market, Yingli's business model operates on PV module sales, photovoltaic power plants to provide design, development and operation with integrated solutions. Moreover, Yingli's PV power plant development program is also trying to develop integrated energy cooperation with China Southern Power Grid Co. Ltd. (CSPG). Yingli Group and CSPG have signed a strategic integrated energy cooperation agreement in July 2013. Yingli is an example to illustrate how the PV industry in China is planning to secure its place in the domestic market and how the govt. is helping them by letting them partner with the public companies and institutions.

### ***c. Improving technological standards***

China's dependence over 'external materials' in PV industry, eventually led to its failure. The core technology in this industry is that of polysilicon production; trichlorosilane is a principal compound monopolized by the European companies that costs 50 per cent of the total production expenses. The Twelfth Five-Year Plan for the Solar Photovoltaic Industry provides detailed guidelines and puts forth the task list for the PV industry. It also sets high technological standards for the industry by insisting to engage in the indigenous production of high-purity polysilicon, silicon ingots, and crystalline silicon cells and so on (Gov.cn 2012). According to the Vice President of China Renewable Energy Society, Mengxian Gan, the technical bottleneck in the Chinese renewable energy development proved as the main factor for the debacle of Chinese PV industry (CPNN 2014). Father of Chinese PV industry and the then Chairman of Suntech Power Holdings Co., Ltd., Shi Zhengrong, years before the collapse of

Suntech, criticized the lethargic attitude of Chinese PV manufacturers towards ‘manufacturing research’, this left the Chinese industry deprived of cutting edge technology and control the price processing (PSNN 2012). The provinces, which supported the establishment of PV manufacturing farms, were pursuing short-term interests and ignored the long-term benefits. With the PV ADs, Chinese understood that an excess reliance over foreign markets for the core technology would leave Chinese companies vulnerable once the tariff changed or trade wars commenced. The 12th FYPSPi specifically insists on innovating and developing production technology of solar cells, encouraging mass production, and enhancing the PV industry’s core competitiveness (Gov.cn 2012). In the pursuit of fast growth and sharp increase in foreign trade, provincial governments in China overlooked the fact that exploring the ‘bottleneck’ could lead to self-sustainment. The support of the provincial leadership went to those projects that could assure returns in a short time span. These projects were given immense importance as they were assumed to bring in technology transfer, direct exports, and businesses as well as jobs for local population. PV Industry was one such case where the local governments showed little interest in developing core technologies and supported the industry by giving financial and legal aid. However, this approach of dependence over a component used to create an export monopoly left a deep impact.

## Case II - Ceramics and Porcelain

Ceramics is an important traditional Chinese staple export product. Foshan is a renowned international ceramic centre in Guangdong province of China. Foshan ceramic has five thousand years of history and is famous for hosting the largest ceramic cluster in the world. Foshan, Jingdezhen, Zhuxianzhen and Wuhan are known as China’s four major towns of the ceramic industry. The Foshan industry along with major ceramic facilities concentrated in Chaozhou accounts for 70 per cent of exports to the EU, a place for 30 major ceramic enterprises who involved in OEM (Original Equipment Manufacturer)<sup>3</sup> production for European buyers. Post anti-dumping duties settlements, most of these industries are facing a threat of closure. In October 2012, the European Commission proposed to impose anti-dumping duties against Chinese exports to Europe in order to strengthen trade defences. The imports of ceramic tableware and metal fittings are put under the scanner. European Commission announced to levy 17 to 58 per cent tariff on Chinese tableware and kitchenware products. As per the new EU regulation, porcelain export tariffs will range between 36.1 per cent and 13.1 per cent for more than ten Chinese Companies. This duty will be exercised equally on all porcelain products irrespective of its category. However, for those companies, which are not listed, the duties will vary between 17.6 per cent and 58.8 per cent, depending upon the category of porcelain tableware product. Laotian Ceramics Co., Ltd, a major ceramics maker in South China’s Guangxi Zhuang Autonomous Region, has lost a number of European clients and almost half of its overseas sales (Xinhua 2013). As a result, the ceramic industry in China is working to tap into emerging economies, including South Africa and South America (CIRN 2013; CBMN 2014). Innovative techniques to create a brand value are adopted, including developing low-carbon products, improving craftsmanship and making high-level products (CIRN 2013).

The ADs on ceramic and porcelain products are the microeconomic safeguards, which have been covered by certifications or product standardization rules. European countries have adopted

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<sup>3</sup> An OEM - Original Equipment Manufacturer is a company that manufactures equipment or components and supply the same to other buyers (clients- that may include another manufacturer or a reseller who may resell or incorporate/reconfigure it into another product using their own (reseller’s) brand name.



stringent technical standards to bar imports from China and save the domestic industry in the wake of international economic slowdown, national debts and financial crisis (ECIA 2012; CISH 2012). In fact, in the European market, high-end ceramic products are sourced from Italy and Spain but products, which are sourced in bulk quantities and at cheaper prices, come from China. The ADs have deprived Chinese exporters of the price advantage as Chinese manufacturers and exporters will be exposed to fierce competition from the European manufacturers. Consequently, Chinese ceramic enterprises are relying on technological innovation to meet the international industrial standards and beat European manufacturers' USP and consumer bias towards quality and standard. Liu Yuelun, Mayor of Foshan - China's ceramic city, said that for Chinese companies, building reputable brands in the face of anti-dumping duties would prove the most effective way to counter AD and CDs (Gd.people.cn 2014). These brands may help the Chinese industry in highlighting its history of ceramic production, cultural uniqueness and the quality, which will pave a way in the European market. Chinese ceramic enterprises are also actively participating in developing professional ceramic certification and gaining access to international high-grade ceramic market permits. The Chinese ceramic industry is adjusting its trade priorities: for example, in order to improve the competitiveness of local manufacturers, the areas of product structure are adjusted, brand promotion activities are undertaken and products with competitive pricing are gradually transferred to the non-EU regions as means of surviving strategies.

#### ***a. Search for New markets***

Like the PV manufacturers, Chinese ceramic industry has to look out for new markets as the ADs in Europe have pushed them to an edge to prepare for an exit plan or an alternative survival plan. Unlike the PV industry, there is no room left for the ceramic industry in the domestic market. Chinese real estate stagnation and an already high use of ceramics in the daily life have further narrowed the domestic market. The domestic market is shrinking, most domestic enterprises looking for foreign export channels and as a result, Chinese are accelerating expansion in South America, Africa and other emerging-markets. Ministry of International Trade Guangdong Dongpeng Ceramics Regional Director Huoqian Ting said that since the 2014 FIFA World Cup and the 2016 Summer Olympics will be held in South America, the infrastructure development prospects are impressive and may open new markets for Chinese manufacturers (CNTV 2011). Consequently, the shrinking EU market share in China's exports is being replaced by emerging South American market. Ouyang Huangjun, foreign trade manager of Hunan Hualian Industry Co Ltd, one of the country's biggest ceramics manufacturers, confirmed that the duties have significantly changed company's outlook and brought a strategic shift in its export structure. He explains that the company is now working to tap into emerging economies, including South Africa and South America. It is also developing low-carbon products with higher added value (*China Daily* 2013). Similarly, the president of Laotian Ceramics Co Ltd, a major ceramics maker in South China's Guangxi Zhuang Autonomous Region, Tian Zhenhua explains that his company is developing new models, hoping that updating its products will enhance its competitiveness in the international market (*China Daily* 2013).

#### ***b. Quality and brand promotion***

Against the backdrop of anti-dumping duties from EU, the Chinese ceramic industry is now undergoing overcapacity, oversupply, fierce competition, continuous fall in industrial profits, while leading enterprises lack the capability of independent innovation. In addition, Chinese

ceramic products mostly come from middle and low value-added brands in the international market where the price is not high. In addition, Chinese ceramics exports work mostly through the export division. Ceramic dealers sell containers across the world, and further the distributor sells the merchandise to local consumers. This business model did not prove sustainable for Chinese ceramics because this does not allow the industry to establish its own brand image and help improve independent space for Chinese ceramics. Hence, Chinese ceramic industry's urgent need is to establish a high-end brand image, boosting the ceramic industry by upgrading. Chen Liehan, Vice president of China National Arts and Crafts Import and Export Corporation and Prof. Wang Yaoling, an Associate Professor with the Department of Ceramic Art Design of Tsinghua University, believe that the Chinese manufactures had no choice than pulling out of the EU market or upgrading the quality and capturing the market based on high standards and branding. He argues that the Chinese ceramic companies must enhance the standards of domestic ceramics production in light of the duties, for instance, improving craftsmanship and making high-level products (China Daily 2013).

The low-cost, low-price competition means companies may be subject to EU anti-dumping cases against large, but up-scale brand enterprise operating in EU. As a result, brand awareness and persistent quality measures were seen essential to widen the market scope in EU irrespective of bearing the tension of heavier duties. Developing the brand value would play a critical role and give Chinese industry a balanced approach to develop various markets around the world, not relying on EU only. For example, all important destinations including the ten ASEAN countries and other Asian countries and regions, will be directly affected by the quality assurances and standards. A must to mention, a group of institutions and local governing bodies initiated effort known as 'Ceramic Lab' to steer support for this innovation drive in the ceramic industry. In Sept. 2012, Shandong Province Industrial Ceramics Industry established Innovation Strategic Alliance in Zibo (CHTH 2012: c6). The core intention behind the move was enhancing the level of China's industrial ceramics and international competitiveness, assisting to develop engineering technology, integration and standardization of construction and providing a talent training service platform. The alliances brought up varied industries together to serve the purpose. This included Shandong University, China Ocean University, six universities and Ceramic Research Institute Co., Ltd. Shandong, Sinoma Advanced Materials Co., Ltd. and number of Chinese ceramic enterprises. This alliance was primarily intended to understand and promote the establishment of a new business & market-oriented technological innovation system. Originally, the State Key Lab of New Ceramic and Fine Processing was approved by the National Planning Commission and financially sponsored by the loan from the World Bank in 1991 (SMET 2012). This State Key Lab<sup>4</sup> has been devoted to the development of the science and technology of advanced ceramics and exploration for the frontier in the area of materials science. Over the past years, with the ADs threatening the existence of Chinese ceramic industry, the lab has carried out research works on fundamentals, engineering applications of new ceramics and fine processing. The lab made a lot of pioneering and distinctive achievements in many aspects of ceramic science, including toughening mechanism, composite technique, ferroelectric fatigue, phase transition, defect chemistry, sintering kinetics, nano-ceramics, materials synthesis and colloid forming techniques (SMET 2012). The quality measurements are seen crucial for the survival of the industry in China.

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<sup>4</sup> The Ceramic State Key Lab employs 53 researchers and engineers from varied backgrounds including Chinese Academy of Sciences and Chinese Academy of Engineering. The laboratory is located on Tsinghua University campus, Beijing.

## Conclusion

The ADs have been critical in deciding the fate of Chinese industry and these duties have come in different forms. Although, normally the criteria of ‘dumping’ has been used to prevent Chinese products from entering the domestic market, sometimes several macroeconomic measures - measures such as product standards and quality - have also been used to slow down the influx of cheaper products from China. From the aspect of technological progress, China’s enterprises are facing increasingly complex and demanding global technical barriers. In recent years, the three major trading partners of China i.e. EU, U.S. and Japan are emphasizing on improving technical standards. As a result, it becomes mandatory for Chinese enterprises to adopt industrial upgrading, to improve and optimize the domestic supply chain and to develop services related to manufacturing. This is apparently proved in both, PV and Ceramic industry. By technological standards, emphasis is put on innovation-led upgrading. Moreover, the industries are taking efforts to avoid price wars and duplicity. The improvements in the product standards will help Chinese industry to create space in the overseas market. This not only means that the export structure will not remain limited to a certain region, but also reflects in efforts of gaining access to multiple foreign markets. The Chinese state is assured that if the standards are raised, innovation is brought in, and export markets are diversified, the industry will be able to absorb the shocks of ADs and Chinese brands will flourish further.

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