

A Chinese Aluminum Company's Learning Curve in the US Market

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Preface

For decades, bilateral investment has flowed predominantly from the United States to China. But Chinese investments in the United States have expanded considerably in recent years, and this proliferation of direct investments has, in turn, sparked new debates about the future of US-China economic relations.

Unlike bond holdings, which can be bought or sold through a quick paper transaction, direct investments involve people, plants, and other assets. They are a vote of confidence in another country's economic system since they take time both to establish and unwind.

The Paulson Papers on Investment aim to look at the underlying economics—and politics—of these cross-border investments between the United States and China.

Many observers debate the economic, political, and national security implications of such investments. But the debates are, too often, generic or take place at 100,000 feet. Investment opportunities are much discussed by Americans and Chinese in the abstract but these discussions are not always anchored in the underlying economics or a realistic investment case.

The goal of the Paulson Papers on Investment is to dive deep into various sectors, such as agribusiness or

manufacturing—to identify tangible opportunities, examine constraints and obstacles, and ultimately fashion sensible investment models.

Most of the papers in this Investment series look ahead. For example, our agribusiness papers examine trends in the global food system and specific US and Chinese comparative advantages. They propose prospective investment models.

But even as we look ahead, we also aim to look backward, drawing lessons from past successes and failures. And that is the purpose of the case studies, as distinct from the other papers in this series. Some Chinese investments in the United States have succeeded. They created or saved jobs, or have proved beneficial in other ways. Other Chinese investments have failed: revenue sank, companies shed jobs, and, in some cases, businesses closed. In this sense, past investments offer a rich set of lessons to learn.

Damien Ma, Fellow of The Paulson Institute, directs the case study project.

For this case study of Nanshan Aluminum's Indiana investment, we are extremely grateful to Amber Yang, a recent University of Chicago Masters graduate, for her research assistance, intrepid fieldwork in Indiana, and enthusiasm for the project.



Case studies are reconstructed on the basis of the public record, personal interviews with participants, and journalistic accounts.

They aim to reflect a best reconstruction of the case. But they may have gaps and other inadequacies where the record is incomplete, facts are murky, or players chose not to share their views.

Cover Photo Courtesy Reuters

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Timeline

- 1980s** As China's reforms begin, the No. 3 Brigade of Qiansong Village, Longkou, Shandong province is organized into a "township and village enterprise" (TVE).
- 1987** Founder Song Zuowen convinces more brigades to join the TVE, building it into a more substantial enterprise.
- 1989** The No. 3 Brigade formally establishes Nanshan Group.
- 1993** Nanshan Group creates a core subsidiary in the aluminum business, Shandong Nanshan Aluminum Company ("Nanshan Aluminum").
- 2001** As part of its expansion, Nanshan Group incorporates three-dozen new villages and begins to expand significantly on the back of China's investment boom.
- 2007** Nanshan Aluminum establishes a small sales office in the United States to liaise with the China-based parent company and scope out the US market.
- 2009-2010** Nanshan Aluminum supplies China's high-speed rail projects with train profiles and seriously considers investing in a plant in the United States.
- 2011** Nanshan makes its final decision to purchase a site in Lafayette, Indiana to build an aluminum extrusion plant. Plant approvals are finalized and construction commences in May.
- 2012** Parts of the plant become operational.
- 2013** Main section of the plant is fully completed and its first press line begins operating in May.

Players

United States:

<i>NAAAT</i>	Nanshan America Advanced Alumnum Technology, an Indiana-based US subsidiary of Nanshan Group.
<i>IEDC</i>	Indiana Economic Development Corporation, Indiana's lead economic development agency, created by Governor Mitch Daniels in February 2005 as a public-private partnership to replace the former state Department of Commerce.
<i>City of Lafayette, Indiana</i>	County seat of Tippecanoe County and home of Purdue University.
<i>Greater Lafayette Commerce</i>	Established in 2006 through the consolidation of several autonomous community-based economic development organizations serving the city.
<i>Tippecanoe County, Indiana</i>	Located northwest of the state capital, Indianapolis.
<i>Shiel Sexton</i>	Indianapolis-based contractor handling Nanshan's plant construction in Lafayette.

China:

<i>No. 3 Brigade, Qiansong Village</i>	Township and Village Enterprise and forerunner to Nanshan Group. Led by Song Zuowen and located in Longkou, Shandong province, the brigade eventually incorporates thirty-six other villages.
<i>Nanshan Group</i>	Private diversified conglomerate in Shandong province.
<i>Nanshan Aluminum</i>	Core aluminum business of Nanshan Group.

<i>CNR</i>	China North Locomotive and Rolling Stock Industry Corporation, a central state-owned enterprise (SOE) under the State-Owned Assets Supervision Administration Commission (SASAC).
<i>CSR</i>	China South Locomotive and Rolling Stock Industry Corporation. A central SOE under SASAC created in 2002, it is the world's largest manufacturer of electric locomotives.

Introduction

In late 2012, a 600,000-square-foot, \$160 million aluminum extrusion facility commenced operations in Lafayette, Indiana. Owned by a Chinese company, Nanshan Group, the project took approximately two and a half years from inception to launch of production and marked the first greenfield investment by a major Chinese metals producer in the US market.

Nanshan considered the investment to be a strategic venture, not simply a commercial one aimed at generating quick profits. And it settled on a heartland state—Indiana—that was eager

to attract and accommodate foreign investment, part of a wave of traditional US manufacturing states that had aggressively courted investments from Asia. For these reasons, the Nanshan case offers a useful lens through which to examine the broader phenomenon of Chinese greenfield investment in the United States.

Greenfield investments are, to be sure, more straightforward than the complex mergers and acquisitions (M&A) that have characterized so much recent Chinese investment

activity in the United States. Indeed, they have been less susceptible to the controversies that have surrounded many US-bound Chinese deals. That is because greenfield investments involve people, plants, assets, and ultimately American jobs in tangible ways that local communities can touch and feel.

But that is not the whole story.



As Nanshan quickly discovered, even a company that puts down roots, creates jobs, and breaks ground on a new manufacturing facility faces a learning curve—sometimes a very steep one—as it seeks to compete and adapt to the US

market once its deal is done.

Nanshan was one such Chinese company. It had to *learn* before it could hope to prosper.

For one thing, Nanshan has been forced to learn how to compete in one of the world's most technologically advanced markets. A second lesson has been that generous purse strings do not automatically yield success. Finally, and perhaps most important, Nanshan has learned a great deal about US management and human

resources practices, not just about US technologies.

These three intertwined lessons have yielded feedback loops that, ultimately, influenced the parent firm's management, operations, and training practices back in China.

The Nanshan case illustrates:

- How a decision to enter high-end overseas market segments to generate higher returns can drive a Chinese company to proactively improve its products and competitiveness in the home market.
- How retaining US workers and professionals helps a Chinese business assimilate training and human capital practices to apply in China. While the quest for technology motivates nearly all Chinese acquisitions and investments in the United States, one lesson of the Nanshan case is that a focus on human capital can, in an adaptive Chinese firm, become an important component of the lessons learned from a US deal.
- How the processes, corporate environment, and management practices in a US plant contribute to improvements in a Chinese parent company's plant operations.
- How local government cooperation and incentives—for example, at the US municipal and state levels—shape Chinese choices as firms weigh whether and where to make investments in tangible job-creating assets.
- How investing in a physical plant in the United States is merely a first step. Chinese investors, *even* when they make greenfield investments, must eventually grapple with post-project management, the need to sustain services, and the importance of making continuous investments in innovation if they are to compete and prosper in the United States.
- How personnel choices matter. Picking a Chinese national to lead a company's US operations works best if that individual is innately comfortable with the operating and cultural environment in the United States. In Nanshan's case, the Chinese lead had direct experience with the Indiana community where the company made its investment.

What follows is a detailed account of Nanshan's origins and ambitions to enter an advanced market. The case study analyzes Nanshan's choices and rationales in looking to Indiana. It concludes with a look at the challenges Nanshan still faces as it seeks to prosper in the American market.

Nanshan Rising

Established in the early 1980s, Nanshan Group is today a large private industrial conglomerate with a diversified portfolio. Its interests and assets span energy, textiles, education, building materials, real estate, finance, wine, and tourism. But its core business has always been aluminum.

With a thirty-five year history, built heavily on the work of a founding entrepreneur, Song Zuowen, the company's development is testament to the opportunities unleashed by China's reform and opening after 1978. In ways unthinkable when Mao Zedong ruled China, Deng Xiaoping's reforms created opportunities for energetic Chinese entrepreneurs.

Humble Beginnings

Nanshan Group's origin lay in what was essentially a "township and village enterprise" (TVE). The TVE was a hybrid form of market-oriented public enterprise, formed by numerous local governments in China during the go-go 1980s.¹ Led by Song Zuowen, the "No. 3 Brigade" of Qiansong Village in Longkou, Shandong province, was inspired to form a business.

Initially, Song and the villagers in the brigade simply produced a hodgepodge of goods, ranging from tofu to asbestos tiles to cement bags. But soon, larger projects, such as glass-fiber processing and cotton and wool spinning, became the enterprise's major focus as demand for these products boomed in China.

The brigade eventually grew into the biggest producer in China's cotton fabricate market, with over 70 percent of domestic market share.

At this point, the "enterprise," such as it was, remained centered on the original village brigade. Consisting of just fifty-six households at its founding, the enterprise had, by 1987, acquired fixed assets worth 55 million yuan (about \$9 million based on current exchange rates).² Two years later, in 1989, the No.3 Brigade formally created "Nanshan Group" in an effort to further take advantage of changing demand patterns in a growing Chinese economy.

As China's economy sprinted forward in the 1990s, so too did its industries and manufacturing sector. Aiming to capitalize on these trends, Song decided to expand the company's presence into

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additional sectors and product lines, with an emphasis on aluminum. This led to the creation in 1993 of Shandong Nanshan Aluminum Company Ltd. (“Nanshan Aluminum”). Song bet that with exploding infrastructure expansion in China, fixed-asset investments in property would catalyze enormous demand for aluminum (see Box).

Aluminum Basics

Aluminum is a ductile metal that requires a long industrial process to forge. The raw material bauxite is mined and refined into alumina, which is then processed in a cell with a molten electrolyte. Direct currents of electricity are then applied to split the alumina into molten aluminum metal and carbon dioxide. This process makes aluminum production a high energy consumption and high emissions industry, although strict regulations and cost-saving concerns have driven the global industry toward the recycling of both emissions and aluminum. Production of aluminum from aluminum scrap demands just 5 percent of the energy needed to produce primary aluminum. Once the aluminum is extracted, it usually undergoes a deep processing phase that can produce virtually limitless shapes and sizes for various industrial and consumer applications. Large, seamless products, such as train profiles, require press machines of significant pressure levels because they must meet high tolerance. Once the profile is extruded, it can then be further fabricated. In other words, it can be cut, machined, drilled, punched, notched, bent, and assembled into a semi-finished product.

But the company’s expansion required more human resources and more land. And Nanshan, then still a village-based enterprise, had neither.

So Song and his colleagues attempted to solve both problems by gradually incorporating thirty-six nearby villages into Qiansong Village (renamed Nanshan Village in 2001 in a nod to the influence of their enterprise, Nanshan Group). In return for their incorporation into Qiansong, the thirty-six villages’ debts were paid, thousands of villagers were hired, and schools were built for the villagers’ children.

From this modest start, Nanshan Group blossomed into a top-500 enterprise in China, ranked 163rd in 2011 by the China Enterprise Federation.³ The Group controls nearly sixty firms across various sectors, and by 2012, its net profits had reached 4 billion yuan (\$655 million), with net assets worth 39 billion yuan (\$6.4 billion).⁴

Nanshan Aluminum

Nanshan Aluminum is a cornerstone of its parent, Nanshan Group. It has become the second-largest aluminum producer in China after the powerful state-owned producer Aluminum Corporation of China, better known as Chinalco.

The success of Nanshan’s aluminum business reflected the broader boom in heavy industry that flowed from China’s hyper industrialization starting

in the late 1990s. During the period since, China has developed world-class infrastructure, expanded property development, and encouraged a domestic auto industry—all of which, in turn, have supported upstream commodity producers in industries such as steel, aluminum, and cement.

By 2013, China produced more than 40 percent and consumed nearly half of global primary aluminum.⁵ Chinese production reached more than four times North American volumes.

But even though China's capital-intensive growth proved a boon to Nanshan Aluminum's business, the aluminum industry is prone to price volatility. That is because it is highly reliant on the demand for end products, such as cars and other consumer durable goods.

In an effort to mitigate uncertainty to the best extent possible, Nanshan Aluminum decided to manage costs through the creation of an integrated supply chain. This gambit appears to have paid off. Some outside estimates put the cost of the company's electrolytic aluminum products at 13,380 yuan (\$2,193) per ton,⁶ a competitive break-even point compared to the industry average of 15,955 yuan (\$2,615).⁷

In an effort to mitigate uncertainty, Nanshan Aluminum decided to manage costs through an integrated supply chain.

Two types of key inputs make up the majority of costs for an aluminum producer. The first is bauxite, the raw material necessary to produce alumina. The second is electricity. Aluminum production is notoriously consuming of energy. And that means that by controlling the cost of energy, a company can go a long way toward making the end product more cost competitive.

According to some industry estimates on the cost structure of aluminum production, alumina, which is made from bauxite, accounts for about 43 percent of the total production cost of electrolytic aluminum. Electricity accounts for roughly one-third of the total cost.⁸

Nanshan's Solution to Cost Challenges

Nanshan Aluminum was forced to deal with both of these cost challenges.

For the first critical input—bauxite—the company's initial solution was to seek long-term contracts with suppliers in Indonesia to stabilize prices. But even under this more stable supply chain scenario, "locking down" supplies via a contract did not mean that the firm could simply exert control over an integrated supply chain.

Nanshan Aluminum understood this. So in 2007, the firm took a further step to mitigate price volatility by acquiring a 20

percent stake in Australian Gulf Alumina Pty Ltd.⁹ Then, according to interviews, it invested an additional \$20 million to establish Nanshan Australia in Sydney, a fully owned subsidiary, in an effort to secure and ship back to China additional bauxite supplies beyond those already owned by Australian Gulf.

Also in 2007, the company took additional steps toward supply chain integration. One step was to acquire Longkou Donghai Electrolytic Aluminum Ltd., another alumina producer located in Longkou, the same Shandong provincial city as Nanshan. Here, Nanshan's principal goal was to acquire Longkou Donghai's production capacity while also reaping the benefits of geographic proximity.

After securing more bauxite supplies and acquiring new alumina production in China and overseas, Nanshan Aluminum aimed to focus more of its energies on the processing segment of the value chain. Its aim was to produce aluminum products of greater sophistication.

Nanshan Aluminum also took steps to mitigate volatility with respect to the second critical input of aluminum production—electricity. The company built its own independent power plant to generate electricity, avoiding the extra fees charged by Chinese utilities. With this step, Nanshan Aluminum, according to its own claimed figures, could bring its average electricity cost down to around 0.4 yuan (\$0.066)/

kWh¹⁰ and thus be more competitive than the industry average of 0.45 yuan (\$0.073)/kWh as of 2010.¹¹

Weathering the Global Economic Crisis

Yet this explosive decade for Chinese heavy industry came to an abrupt halt around 2008. The global economic crisis hit the Chinese aluminum industry particularly hard. As growth stalled, demand for commodities fell accordingly, leading to a tumble in global aluminum prices of more than 50 percent on average in 2008.¹² The Chinese aluminum industry reeled from overcapacity, accumulated as a result of building ahead of demand during the boom times. This overbuild put further downward pressure on prices.

Nanshan Aluminum reacted comparatively swiftly by making two adjustments:

First, it capitalized on the high-speed rail (HSR) bonanza that began to accelerate in China as one result of the Chinese government's \$586 billion stimulus package in the period from 2008 to 2010. As the Chinese government sought to stave off disastrous economic fallout, Nanshan Aluminum imported equipment, primarily from advanced economies such as Germany, the United States, and Japan, to ensure that its products met the technical requirements of China's bullet train projects. In early 2009, Nanshan Aluminum became a certified supplier of certain types of high-speed train

profiles—the bodies of trains are primarily composed of aluminum—to China North Locomotive and Rolling Stock Industry Corporation (CNR) and China South Locomotive and Rolling Stock Industry Corporation (CSR).

At the peak of this effort, Nanshan argues that it was able to satisfy some 40 percent of CSR's demand for aluminum profiles, according to interviews. And Nanshan had a particular advantage in its effort to strike up a relationship with China CSR since the latter's subsidiary that builds its HSR trains is located in Qingdao, a major coastal city in Nanshan's home province of Shandong.

Figure 1. Comparison of Profits between Nanshan and Chinalco

Year	2007	2008	2009	2010	2011	2012
Nanshan Aluminum (million yuan)	1,149	629	731	781	1,022	691
Chinalco (million yuan)	12,123	158	-4,679	969	690	-8,643

Sources: Nanshan Aluminum; Chinalco

Involvement in the national HSR project helped Nanshan improve its technical proficiency. The company learned to produce higher value-added products with application to bullet train bodies. Nanshan argues that its collaboration with the two rail companies also allowed it to maintain a technical edge relative to competitors. Nanshan Aluminum tested the production of the 350 km/h train profiles within fifty days. Company sources claim in interviews that this was the shortest time among all competitors.

Second, Nanshan Aluminum also leveraged the economic crisis into an opportunity to upgrade its products, an important preliminary step as it prepared to enter higher-end and technology-intensive market segments beyond the HSR industry. For example, the company began at this point to focus on products such as large aluminum profiles and aircraft body parts. Making these products required deep processing technology. The products yielded more attractive profit margins that could offset the rising cost of raw materials.

These efforts seem to have protected Nanshan Aluminum from the worst of the global crisis and its ripple effects. Yet some of its competitors were less fortunate.

For purposes of comparison, take, for example, Chinalco, China's biggest aluminum producer and a prominent state-owned enterprise under the central government. Chinalco's response to the global crisis was slower—it did not enter the HSR market until 2011 and concentrated much of its focus on base metal markets other than aluminum in an effort to diversify its business and mitigate risks.

But one problem with Chinalco's strategy was that the overall base metals market recovered only slowly from the global slowdown. Indeed,

the numbers appear to bear out this comparison. Nanshan Aluminum's profits increased between 2008 and 2010, while Chinalco's saw huge volatility, which plummeted between 2008 and 2009 (see Figure 1).¹³

In subsequent years, Nanshan Aluminum also entered the aircraft business in a quest to manufacture the bodies of business jets. Soon thereafter, it sought to establish a foothold in aeronautics research and development, establishing the Nanshan Aeronautics Materials Research Institute. This likely aligned with the company's longer-term strategy to enhance its existing aluminum production, as well as its ambition to move into a space that no Chinese company currently occupies—supplying Boeing, Airbus, and global

aircraft manufacturers with aluminum for the bodies of their commercial jets. To achieve the standards demanded of aircraft-grade aluminum would require a qualitative leap in Chinese aluminum products. Few companies anywhere in the world can produce such special-grade aluminum products.

Most important in the immediate term, however, were the tactics Nanshan adopted in the face of a wrenching economic crisis. With hindsight, these seem to have gone some way toward helping the company weather the storm. The emphasis on technological upgrades, together with the firm's effort to move into higher-end market segments, laid the groundwork for its eventual ambition to enter a developed market such as the United States.

An Expanding Footprint in the US Market

Nanshan Aluminum made its initial foray into the US market in 2007, when it established Nanshan America. Serving the firm's North and South American markets, the branch was headquartered in Chicago, the closest major city to its predominantly Midwest-based American clients.

Before 2010, and like its Chinese peers, Nanshan shipped China-made products to the United States, although the total volume of these exports was fairly small at only about 8,000 to 10,000 tons annually. At the time, Nanshan America served a very limited function. It was, in essence, a barebones Americas-focused sales office, established to liaise with the parent company's US buyers.

But having an American branch served two other purposes as well: scoping for opportunities and better understanding the US market landscape. And the branch began, in time, to identify specific opportunities rather than simply using its US presence solely as an export and sales platform for its parent firm. Nanshan America sought to perform diligence and thus prepare in advance the company's effort to increase and broaden its footprint in the United States.

After three years of studying the market, Nanshan concluded that the United States held considerable potential for the company's expansion. So to demonstrate its commitment, Nanshan appointed a new president of its US branch, Du Lijun, to guide the firm in executing its US strategy. Du had been educated and worked in both China and the United States. A graduate of Purdue University, he would soon play an important role in shepherding Nanshan's eventual facility to fruition in Purdue's home state of Indiana.

After studying the market for three years, Nanshan concluded that the United States held considerable potential for expansion.

On paper, the US aluminum market looked particularly

attractive to Nanshan at this time. Aluminum is used in an array of applications in the United States, especially in the transportation and packaging sectors, which together account for nearly 60 percent of total US domestic aluminum consumption. Construction and electrical applications account for roughly a quarter of total demand.¹⁴

In 2006, consumption of aluminum per capita in the United States was nearly five times that of China, according to Organization for Economic Cooperation and Development (OECD) estimates.¹⁵ However, the OECD has projected that by 2025 Chinese aluminum consumption per capita will be nearly equal to that

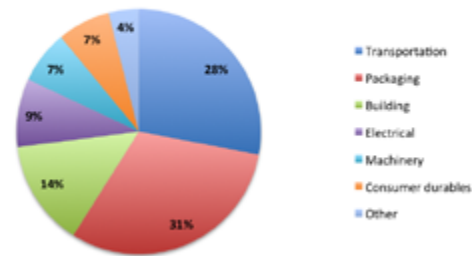
in the United States.¹⁶ In other words, China could become one of the world's biggest aluminum consumer markets in a decade's time.

Since 1994, it is the US transportation sector that has consistently been the biggest consumer of aluminum products. The majority of applications in the sector feed the advanced automobile and aircraft industries because aluminum's unique properties—light weight, durability, and reusability—have made it an attractive material for cars and aircraft.¹⁷ These same properties also make it attractive as a packaging solution—for example, as a container material for beverages, food, and pharmaceuticals.

Compared to a similar steel structure, for example, an aluminum-based body can reduce the weight of a car by up to 55 percent without compromising safety standards. And the lighter weight structure can potentially lead to gasoline savings of 500 to 700 gallons over a vehicle's lifetime. In a similar vein, an aircraft composed entirely of steel would be too heavy on lift off, thus making strong but lightweight aluminum the basic material in today's aircraft. From 2000-2010, transportation applications accounted for more than one-third of US aluminum demand. But at the height of the economic crisis, transportation momentarily fell behind packaging as the biggest driver of aluminum demand in 2010. Indeed, 2009 marked the worst US sales performance for automobiles

since 1982, leading to a dramatic fall in aluminum demand from the transport sector, which had a spillover effect into the following year (see Figure 2).¹⁸

Figure 2. US Aluminum Demand by Sector, 2010



Source: US Geological Survey

Seizing on the Economic Crisis ... Again

But in this US slowdown, Nanshan saw an opportunity to pursue its first greenfield investment in the American market.

One likely motivating factor was that China was running into politically volatile and commercially dangerous trade frictions with the United States. After all, in spite of the growth slide in China and overcapacity across several heavy industrial sectors, including aluminum, Chinese producers had continued to ramp up exports to boost growth and survive the crisis. Generous Chinese government subsidies to keep plants and factories afloat and prevent mass layoffs also played an important role.

As a result, the United States, despite the slowdown, actually saw a surge in aluminum imports from China. For

an illustration, consider aluminum extrusion exports from China. They jumped 138 percent between 2008 and 2009. In 2010, US imports from China still accounted for 63.2 percent of total aluminum extrusion imports into the United States.¹⁹

In this context, US trade officials alleged that China was dumping its excess capacity at below market value into the US market. And by March 2011, the US government had imposed antidumping and countervailing duties on Chinese-made primary aluminum and extrusions, respectively. These tariffs, which ranged from 32.8 percent to 33.3 percent in antidumping penalties and up to 374 percent for countervailing duties, would be set to remain in effect for five years.²⁰

The net effect of these US tariffs was to wipe out much of the price advantage enjoyed by Chinese aluminum exporters. And this was a considerable shock to Chinese aluminum executives.

“When the US imposed these fines,” Du Lijun, Nanshan America’s chief, exclaimed in an interview, “95 percent of aluminum extrusion exports from China stopped!” Official statistics from the US Census Bureau show that aluminum and bauxite imports from China dropped immediately, by 42 percent in 2011 and by another 25 percent in 2012.²¹

Nanshan Aluminum was subject to the antidumping tariff but less affected than other Chinese firms because its exports

to the US market remained relatively modest in volume. For Nanshan, however, a principal effect of the US trade actions against Chinese aluminum exporters was to serve as a wake-up call that the firm, with its ambition to expand in the US market, should pivot from exporting China-produced aluminum to investing in a physical plant in the United States.

Nanshan made this decision on the basis of several factors:

First, Nanshan executives forecast that US trade tariffs would create a gap in supply from Chinese manufacturers. If Nanshan could move fast enough to seize market share and fortify a reliable relationship with US clients, then by the time the tariffs expired in 2016 the firm would have gained a significant edge over its Chinese competitors.

Second, Nanshan executives believed that investing in a plant in the United States could reduce uncertainties about shipping costs. Transportation costs for such metal products cut into profit margins.

Third, and probably most important, Nanshan judged that the cost of plant construction in the United States—including labor and the physical asset—would be lowest during the ongoing economic crisis. And they bet that US state and local governments might be more inclined amid crisis conditions to provide incentives to support job creation by an overseas direct investor.

By the time a Nanshan-invested greenfield plant became operational, Nanshan executives reasoned, the US market would already have rebounded.

Both Song Zuowen, Nanshan Group's founder, and Du Lijun, its American

branch chief, saw an opportunity amid the crisis. At this point, they decided to move forward on building an aluminum production facility in the United States.

Working Toward the Investment

Still, setting up a new greenfield investment is no simple matter, especially for a foreign firm with little prior experience in the target market.

Market Segment Positioning

Aluminum smelting is a polluting and low-margin business, so Nanshan decided that its American facility would focus on the deep processing segment of the value chain. It is through this process that aluminum is transformed into sophisticated finished products, such as large profiles and seamless tubes.

The new US plant would, for example, produce extrusions that could be formed into different shapes and sizes for applications in the transport sector. Extrusion is arguably the most widely employed method of forming aluminum, leaving designers significant leeway to shape profiles to meet the specific needs of end users. But the low-end extrusion market faced headwinds as overproduction and slowing infrastructure construction emerged in both the United States and China.

Nanshan bet on demand in the higher-end market segment, basing its bet on a projected increase in the application of

aluminum in trains, sophisticated auto parts, and aeronautics.

That meant that Nanshan decided to concentrate its US investment on the high-end market rather than the lower end typically occupied by Chinese aluminum producers. Its decision, company executives say, was informed by Nanshan's own recent experience in China. Back home, Nanshan Aluminum



was already undergoing a process of climbing up the value-added ladder, having upgraded its equipment and accumulated some experience in HSR profile production during the Chinese

government's big infrastructure boom. Now, Nanshan decided to double down on this strategy at its US plant. The American plant would feature technology, equipment, and, in the plant's conceptualization, advanced layout and design elements.

But these plans evolved only gradually. Actually, Nanshan started with a different plan. Originally, the company had considered simply acquiring an older-generation US plant and retrofitting it to higher standards and specifications. But this option was abandoned once Du concluded that

the majority of American aluminum extrusion plants, built in the 1970s and 1980s, were “too old to be properly upgraded.”

As an alternative strategy, Nanshan could have attempted to buy a newer US plant. But these would be too costly for Nanshan to acquire with its extant capital reserves. So it soon became clear that Nanshan would need to build its *own* plant rather than acquiring and retrofitting one.

Indiana Bound

For plant construction, Nanshan settled on the Midwest, America’s traditional manufacturing belt because that is where 60 percent of its US-based clients are located. But the company was also attracted to Indiana because of lower labor costs, access to the east and west coasts, and low corporate tax rates, according to interviews.

The Midwest is a large multi-state region, but Du had a personal connection to the state of Indiana. An alumnus of Purdue, Du was already broadly familiar with conditions in the state. He recalls feeling confident about his capacity to navigate both the US and Chinese regulatory landscapes.

Here are examples of where Nanshan’s assessment of these specific state-level conditions in Indiana made an apparent difference:

When Nanshan began looking seriously at Indiana, then Governor Mitch Daniels and the state legislature had just lowered the state’s corporate tax rate to 6.5 percent by 2015—lower than the 8 to 8.5 percent average of other states in the region. That was attractive to a prospective overseas direct investor, Nanshan executives say.

And Indiana’s electricity costs were among the lowest in the area—also an attractive factor to a prospective investor in a high energy consumption business like aluminum.

One thing Nanshan executives *were* unfamiliar with was the politics of US labor. Unlike nearby Michigan, where union membership in 2011 was 17.5 percent of the total workforce, labor unions in Indiana had a lower presence at just 11.3 percent.²² And Tippecanoe County, where Nanshan eventually sited its plant, has just 6.6 percent of its workforce unionized in local manufacturers, according to interviews in the state.

Chinese companies are, from the get-go, unfamiliar with US organized labor. Whether state-owned or private, they have no real experience with US-style organized labor negotiations and collective bargaining. Indeed, the Indiana/Michigan comparison is interesting because of lessons learned in another case in this series of Paulson

Nanshan settled on the Midwest, America’s traditional manufacturing belt because that is where 60 percent of its US-based clients are located.

Papers on Investment. In the Chinese buyout of a Michigan based auto parts manufacturer, Nexteer, Chinese investors overcame organized labor's initial scepticism and reservations about a deal, engaging with the United Auto Workers local in Saginaw in various ways.²³

As Du began to seriously consider Indiana in late 2010, he heard that Governor Daniels was about to head to Shanghai on his second trip to Asia since taking office. Du proposed that Daniels meet with his boss, chairman Song Zuowen, in Shanghai.²⁴ And when they did so, Nanshan Group's founder presented the governor with a preliminary concept for an Indiana-based extrusion plant—an investment that Nanshan projected would total \$100 million in direct investment, cover roughly 400,000 square feet, and create 150 to 200 local jobs.

The Indiana Economic Development Corporation (IEDC), established in 2005 when Daniels privatized Indiana's Department of Commerce, began to work with Nanshan to select a site, initially proposing sixteen candidate locales in the state.

IEDC's role is worth noting because it was part of a bet by Daniels that transforming a state agency into a public-private partnership would better position Indiana to attract overseas

direct investment. IEDC's new identity meant that it was no longer subject to the same rules as a government body. So its enthusiasts and those involved in the restructuring argue that this allowed it to be more aggressive and focused in its efforts to attract direct investment from foreign firms.²⁵

Among the sixteen candidate sites, the City of Lafayette became the front-runner for a number of reasons, not least that Du had attended Purdue. After finishing at Purdue, Du's first job

in the United States had also been in Lafayette, directing the China operations of Oscar Winski

Co., a scrap metal recycling business headquartered in the city.

But more than just Du's personal connection to Purdue and Lafayette, the city also had the advantage of a high concentration of global manufacturers, including Alcoa, Caterpillar, and Subaru. And the city had something else to offer: competing locations in Indiana did not have a comparable research ecosystem—in this instance, led by Purdue, with its research centers in technology, the hard sciences, and industrial and other forms of engineering. Purdue has more than four hundred research laboratories.

Since Nanshan planned to produce higher end industrial goods, it needed to boost its innovation capacity and

Chinese companies, whether state-owned or private, have no real experience with US-style organized labor negotiations and collective bargaining.

adapt to clients' evolving demands. A partnership with Purdue, the company reasoned, would give it improved access to such resources, complementing its effort to become a more innovative firm. Moreover, from Nanshan's perspective, Purdue could become a source of human capital, graduating engineers and technical students who might wish to join the company. A nearby institution, Ivy Tech Community College of Indiana, bolstered this bet as well. The community college, Nanshan executives hoped, might supply other skilled labor for the plant floor.

In all of these dimensions, Nanshan sought to align its stated objectives with those of Purdue and the Indiana state government. The latter wished to foster industry-research clusters based on the model that had evolved in other states, such as northern California, the Route 128 suburbs of Boston, Massachusetts, the North Carolina research triangle, and the Michigan auto nexus linking Detroit to surrounding communities and the University of Michigan in nearby Ann Arbor.

Indiana's Japan Precedent

And Indiana had prior experience pursuing direct investment from Asia. The above-mentioned Subaru plant is emblematic of the decades of effort aimed at attracting Japanese auto investment to the state. That process began in the 1980s. It eventually paid off as Toyota and Honda set up shop in Indiana. Currently, many

of the Toyota Camrys sold in the United States are manufactured in the Lafayette Subaru plant, which has been under contract with its parent, Toyota, to produce the Camry model.

In fact, today, Indiana is arguably a more Japan-oriented automobile state than a Detroit-oriented one. And the state's positive experiences with Japanese manufacturing-related investment provided a model for how it subsequently approached potential Chinese investment.

Yet there were differences in working with Japanese and prospective Chinese investors. Interviewees in Indiana who worked to attract investment from both countries say that their experience revealed distinct decision-making processes.²⁶ The Chinese lacked a "structured" decision-making process, these officials say, but made investment-related decisions quickly. Japanese investors in Indiana, by contrast, relied on a more formal process and a much more deliberate decision tree.

State and Local Incentives

IEDC offered Nanshan a package of incentives that included tax withholdings, subsidies for infrastructure and training grants, and a ten-year payroll (2011-2020) tax credit of up to \$1.3 million. The state chose to use payroll tax credits due to the size of the proposed plant's fixed capital costs, which, in such cases, require a fairly long period to recoup the initial investment.²⁷

Another incentive applied to Nanshan was the so-called Hoosier Business Investment Tax Credit—non-refundable corporate income tax credits calculated as a percentage of the eligible capital investment to support a project.

The state offered as well to reimburse training expenses under the Economic Development for a Growing Economy (EDGE) Tax Credit, to assist Nanshan in employee skills training.

Conditions attached to the package included the following: total investment from Nanshan would have to be at least \$98 million, and the number of jobs created would have to exceed 150 over a decade.²⁸

Designed to contain three segments, plant construction commenced in May 2011. Ten months later, the basic infrastructure was complete.

Nanshan accepted these Indiana credits and incentives. Chairman Song soon visited Lafayette to finalize details, which ultimately included municipal-level incentives as well.

According to Greater Lafayette Commerce (GLC), these covered an inclusive local incentive package valued at \$7.6 million from the City of Lafayette, Tippecanoe County, and WorkOne (the local network of recruitment and training centers under Indiana’s state-level Department of Workforce Development), whose local agents were its West Central Indiana office and its REACH Center.

Municipal incentives included Tax Increment Financing Funds, ten-year tax abatement for real estate and personal property investment, job training funds, fast-track permissions, an electric utility economic development incentive, and assistance from WorkOne-REACH in the hiring and recruitment process.

Regulatory Procedure

Nanshan faced few regulatory hurdles. But because aluminum extrusion production can be highly polluting, Nanshan was required to undertake an environmental impact assessment to meet federal Environmental Protection Agency (EPA) pollution level standards. For this, Nanshan relied on LAN Associates, an architecture and surveying firm, that advised the company to build a casting house featuring advanced recycling capacity. EPA approved Nanshan’s project in eight months, according to Du.

Construction of the Plant

In March 2011, Nanshan officially purchased its plant site from the City of Lafayette, settling on Indiana-based Shiel Sexton as its general contractor for the project. Nanshan encouraged Shiel Sexton to partner with local subcontractors in an effort, Nanshan executives say, to build support within the local community.



Designed to contain three segments, plant construction commenced in May 2011. Ten months later, the basic infrastructure of Nanshan America Advanced Aluminum Technology (NAAAT) was complete. The City of Lafayette convened meetings at least once a month during the construction process involving the fire marshal, engineering office, contractors, and other stakeholders to work jointly with Nanshan.

The first segment of the plant, still under construction as of the writing of this case study, is a storage facility for aluminum scraps and a casting house that can turn scrap into billet. The casting facility is to be equipped with advanced systems and furnaces to ensure quality billets and to keep pollution emissions low. Nanshan projects that when fully operational, expected by February 2014, the casting facility will be capable of producing 100,000 tons of billets a year, about half of which would be sufficient to meet NAAAT's demand, with the rest supplied to other manufacturers. In the interim, NAAAT will rely on other local suppliers for billets.

The second and main section of the plant incorporates two press lines: a quality control room and a die shop. The first press line, which became operational in May 2013, is designed for large, single-piece extrusion products of up to 85 feet, such as train body profiles. The second stream line, in operation since late 2012, deploys a 15,000 ton, 12-inch diameter Presezzi press equipped with billet piercing capability to produce seamless tubes.

The third segment of the plant is for fabrication—a high value-added service—and has also not yet been installed, as of writing. Space has been left at the plant to develop fabrication capacity but its expansion will depend on market demand, according to Nanshan. If developed, this segment would focus on non-traditional fabrication—for instance, long-length products undersupplied by traditional fabrication. The company's long-term vision for NAAAT is to make the company a solutions provider, able to customize and create value for clients.

After an Investment, What for an Encore?

What does a Chinese-invested aluminum factory in the Midwest do once a deal is finished, especially when that investment involves just one plant?

Nanshan's challenge, it is now clear, is how to prosper in the competitive US market. Indeed, since Nanshan entered the United States with the intention of competing in the North American market, not simply transferring skills and technology back to China, the company must, as a new entrant into a mature market dominated by existing major players, prove that it can offer exceptional products to differentiate itself and eventually reach profitability.

Sustaining a prosperous business in the US market is undoubtedly a much tougher challenge than simply putting up a plant. Instead of relying on an advertising-heavy strategy, however, Nanshan has initially chosen to stick with a traditional direct sales strategy by hiring an American sales team.

In the near term, NAAAT is targeting the most profitable soft alloy extrusions products, such as customized wide

profiles, seamless applications, and tight tolerance rod and bar. Seamless tubes are used in general engineering applications, such as auto heat exchangers, food processing equipment, water treatment plants, chemical equipment, and hydraulic tubes.

Nanshan claims that only two or three players in the United States can compete with its products in the high-end seamless tubes market segment. But the plant's focus on aluminum soft alloys is informed by a different logic: Nanshan did not necessarily want its American operation to compete head-to-head with its

neighbors in Lafayette. These include Alcoa, the biggest aluminum company in the United States, which maintains a plant just three miles from NAAAT's Lafayette site. Nanshan's argument is that it has been careful to emphasize that its extrusion facility will only produce soft alloy products, not the hard alloy extrusion products that Alcoa's plant manufactures.

In interviews, Du recalled that Nanshan voluntarily filed paperwork with the US Department of Commerce stating that the firm's American operation had



no intention of producing hard alloy extrusion products because of their wide application to national security-related technologies, such as aircraft and aeronautics. The parent company in China, Nanshan Group, is developing more capabilities to move into these “apex” industries, such as aircraft. But NAAAT argues that it is focusing its US-based lines on different products.

For NAAAT, this ostensible focus on soft alloys aimed to solve two issues simultaneously. The first concerned US government review of Nanshan’s prospective investment. The firm sought to preempt and forestall claims of national security risk that might have hindered the review process. Its pledge to avoid hard alloy business lines was part of an effort to assuage potential concerns. Second, NAAAT’s focus on soft alloys was meant to signal that Nanshan’s Indiana facility would pose little threat to established US players, such as Alcoa, which also have significant interests in the China market.

In interviews with GLC, the local investment promotion arm in the city, officials recalled that they had consulted Alcoa before lending the city’s support to Nanshan’s deal. Alcoa representatives, they recall, raised no specific objections, noting only that competition is a feature of the global economy and expressing hope that Nanshan’s project might benefit the Lafayette economy, also Alcoa’s aim.

Betting on High-Speed Rail: Too Risky?

But for the long term, Nanshan has pinned its hopes on a US buildout of high-speed rail and US infrastructure revitalization. It aims to have NAAAT supply some of the aluminum train profiles to US-based HSR projects.

Currently, there is just one “high-speed” rail service in the United States: Amtrak’s Acela Express, which serves the northeast transportation corridor from Boston to Washington, DC. And because Acela has to share tracks with conventional rail, it averages just 84 miles per hour, much slower than HSR speeds in European and Asian countries that boast dedicated high-speed passenger rail. As a point of comparison, the new Chinese bullet trains generally run between 200 and 250 mph.

Many in the United States have argued for expanded investment in US infrastructure, including HSR, but political and policy disagreements have led to a dramatic scaling back of the most ambitious national plans. Thus far, only two projects—in California and along the northeast corridor—look likely to move forward. And while America’s first HSR-dedicated infrastructure could be the California project, even that project faces an uncertain future given the state’s fiscal woes and questions over personnel and project-handling capacity.²⁹

Spearheaded by the California High-Speed Rail Authority (CHSRA), the ambitious program in the state calls for an HSR system to connect northern and southern California via an integrated HSR corridor, with a price tag estimated at nearly \$70 billion. In September 2012, the Federal Railroad Administration (FRA) endorsed California's plan to begin constructing the first operating segment between Merced and Fresno.

Phase 1 of the California program calls for a 520-mile HSR network connecting Anaheim and Los Angeles, through the Central Valley, to San Francisco that would be operational by 2029. Phase 2 would then extend this system north to Sacramento and south to San Diego to complete the full 800-mile project. Trains would reach speeds of over 200 mph, cutting travel time between Los Angeles and San Francisco to under three hours, compared to six hours by car.³⁰

In basing so much of its strategy on a bet about the long-term future of US-based HSR—and then drawing on its experience with HSR in China—Nanshan's American operation expects (or hopes) that these two California phases will generate demand for aluminum train body profiles. The profiles require technologically sophisticated manufacturing techniques to meet exacting standards.

And that is one major reason Nanshan executives argue that they can compete—and succeed—in the American HSR market. Nanshan argues that it has already climbed a steep learning curve as a result of its experiences working on HSR projects in China. It is a designated supplier of HSR train bodies in China and has initiated several projects to advance R&D in the sector.

The firm boasts about a track record of experience that, its executives say, might give the company an edge over potential

Anticipating the arrival of the HSR market is a strategy fraught with complications and challenges, given the current constraints on US-based HSR.

competitors in the United States once the time arrives to bid for HSR-related supplier contracts. NAAAT's sales group maintains contacts with California project personnel and has prepared itself to move should the demand emerge.

But anticipating the arrival of the HSR market is a strategy fraught with complications and challenges, given the current constraints on US-based HSR. Meanwhile, Nanshan's production capacity exceeds the current level of demand in the US market for its products. So in the interim, NAAAT will need to produce and sell more traditional products, such as aluminium bar and tubes.

The company is waking up to these future market uncertainties. To hedge against the potential evaporation of HSR opportunities in the United States, NAAAT has looked to diversify its markets for extrusions products.

To date, NAAAT has reached 15 percent of its production capacity, with clients mostly in the automobile, truck trailer, and electrical sectors, all of which demand a wide

variety of soft alloy products.

According to NAAAT, its efficient

plant layout, together with advanced production techniques, enable it to reduce non-productive time. That means it should be able to drive down the cost of similar products and reap comparative advantage.

The plant's location in Indiana is important too: because of NAAAT's proximity to its two largest truck trailer clients in the Midwest, Chicago-based Great Dane Trailers and Lafayette-based Wabash National Corporation, lower transportation costs and timeliness of delivery confer competitive benefits. Improved operating efficiencies also offer advantages, Du argues, by allowing NAAAT to keep profit margins competitive.

NAAAT expects to break even in 2014, roughly sixteen months from the commencement of the plant's operation in late 2012. The next few years, then,

will be an important test of whether NAAAT can attract more orders and ultimately operate at full capacity, even in the absence of an American HSR buildout.

Searching Beyond High Speed Rail

Nanshan has sought other opportunities to service the US market with its aluminum soft alloys. These include

two other transportation-related projects in California—the expansion of the Bay Area Rapid

Transit (BART) system and the High Speed Intercity Passenger Rail Program (which is integrated with the HSR project).

The BART system has a number of expansion projects, including major ones that will connect to the Oakland airport and an extension to Santa Clara County at the heart of Silicon Valley. The latter project has already secured some federal funding and construction has reportedly begun.³¹

One reason NAAAT has taken an interest in the various BART projects is because the company can produce a single 85-foot profile, which meets specifications required by the requisite upgrades of intercity light rail. Nanshan claims that its competitors need to combine two profiles to meet the length requirement.

To date, NAAAT has reached 15 percent of its production capacity, with clients mostly in the automobile, truck trailer, and electrical sectors.

The company is also surfing the learning curve by looking to invest in other technology-related ventures. One example is a light, twin-passenger luxury aircraft: Nanshan recently invested in a Silicon Valley venture, ICON Aircraft, that produces a small “personal” racing craft—an aeronautical equivalent of a personal speedboat. For Nanshan, this experience with a luxury, niche export product from the United States, so vastly different from its usual business lines in aluminum production, could have spillover effects into business in China.

Talented Chinese managers who can compete consistently at a global level remain scarce at firms like Nanshan.

The firm believes that the private and luxury passenger aircraft market in China will grow, as demand rises among high net worth individuals, if and when the People’s Liberation Army loosens its control of commercial and civilian airspace.³² Put differently, Nanshan, like other Chinese companies, is betting on a combination of market demand and policy change in China to drive expansion into a new business line—in this case the private aircraft market.

Business Feedback Loops

Nanshan’s US plant serves a further purpose. Even as the firm searches for US-based customers to make its Indiana bet profitable, the plant has become an important feedback loop through which Nanshan applies the lessons learned and experiences accumulated during

NAAAT’s construction to similar projects in China. If NAAAT proves to be a successful model, it could be duplicated in China and in other countries in which Nanshan has an interest.

Nanshan has, for example, emphasized US-based training for its Chinese employees. A first class of Chinese personnel from Nanshan received several weeks of training at NAAAT in machine operations, maintenance, and human resources management

in 2013. And Nanshan is sending Americans to China as trainers even as it brings Chinese to Indiana for training. NAAAT’s industrial designers have been invited to China to help the parent company design plants for its new strategic business lines in aircraft and aeronautics, aimed primarily at the domestic Chinese market.

Chinese trainees who have been to the Lafayette plant are struck, managers say, not so much by the technological sophistication of the equipment on the factory floor as by the standardized processes for equipment maintenance and human capital management. This reflects a common “hardware versus software” debate that many Chinese firms identify with and fret about. Talented Chinese managers who can compete consistently at a global level remain scarce at firms like Nanshan. Trained American professionals,



Nanshan managers say, operate differently and are usually “more proactive.”

Such hands-on experiences aim to allow Chinese trainees to rely on human capital as a resource in sustaining a successful operation. Such practices, in turn, are being gradually incorporated into the management of Nanshan’s factory floors in China.

One example is peer interview in recruitment. Peer interviews have been used as a part of the hiring process in Indiana, where the plant remains mostly staffed by Americans. With the exception of three Chinese, including Du, all other employees at NAAAT, around ninety so far, are Americans.

Nanshan executives argue that they do not intend to adopt Chinese-style business practices at the Indiana plant because its principal goal is to serve US clients. One plant manager recalled that Nanshan Group chairman, Song Zuowen, stated at a management meeting that “we want to learn the US way, the US culture,” emphasizing that Nanshan should avoid exporting Chinese

business practices to NAAAT as much as possible.

Nanshan has sponsored a workforce development program and several other small programs, earning NAAAT some goodwill from the mayor. “[The investment] helps to put us on the map in the global marketplace,” says Lafayette Mayor Tony Roswarski. “When we have a company like Nanshan getting global attention and bringing people to our community, it is a huge bonus that helps to keep us in the global marketplace [when the city itself does] not always have the financial [means] to do so.”

Nanshan has also launched a technical partnership with Purdue University that includes educational activities, workforce development, and internship recruitment, among other elements. A few months after breaking ground at its Lafayette plant, NAAAT agreed to provide Purdue with \$2 million in annual funding over five years and to support programming and activities through the university’s Office of International Programs and its China Center.

Uncertainties Ahead

At the end of the day, while NAAAT has gradually put down roots in the United States, it confronts emerging uncertainties and significant business challenges. US demand for its products remains thin, even as the company has expanded local capacity. And this is compounded by the slow pace of a prospective US-based HSR project.

Nanshan executives concede that they will need to remain nimble and adaptive if they are to sustain a US-based business over the long term. Yet the company's US plant serves as a training ground for the parent

company's Chinese employees, who are bringing these practices back to Chinese factories. Nanshan has used its US operation as a software platform, not simply as a hardware operation.

In both China and the United States, Nanshan has made big bets on future trends to drive its business. Challenges aside, Nanshan will continue to surf a learning curve in the United States. Learning and adaptation have been a central part of its strategy in China. They are, too, the core of its US-based strategy and go a long way toward explaining its Indiana investment.

Endnotes

¹ TVEs included township enterprises (*xiangban qiye*), village enterprises (*cunban qiye*), joint household enterprises (*lianhu qiye*), and enterprises owned by single rural households or individuals (*geti qiye*). The very first TVEs can be traced back to commune and brigade enterprises in the 1970s. TVEs boomed during and after economic reforms in the 1980s. See, for example, Chen Hongyi, *The Institutional Transition of China's Township and Village Enterprises*, Ashgate, 2000.

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The Paulson Institute's Program on Cross-Border Investment

There are compelling incentives for the United States and China to increase direct investment, including prospective Chinese investment in the United States. US FDI stock in China was roughly \$60 billion in 2010. Yet Chinese FDI stock in the United States has hovered around just \$5 billion. For China, investing in the United States offers the opportunity to diversify risk from domestic markets while moving up the value-chain into higher-margin industries. For the United States, meanwhile, leveraging Chinese capital could, in some sectors, help to create and sustain American jobs.

As a nonprofit institution, The Paulson Institute does not “do deals” or participate in any investments. But by building out a sector by sector approach—launched in 2012 through our US-China agribusiness program—the Institute has begun through its research to highlight commercially real and “invest-able” opportunities, and to convene relevant players from industry, the capital markets, government, and academia. The Institute’s goal is to focus on specific and promising sectors rather than treating the question of “investment” abstractly.

We are developing nonprofit programs and publishing investment studies in the public interest in an effort to identify tangible opportunities where a serious commercial case for investment exists and the underlying economics (and politics) are supportive. We are looking, too, at constraints and obstacles—in other words, areas where investment opportunities are much talked about by Chinese and Americans in the abstract but are not anchored in underlying economics or a realistic investment case. Ultimately, we are attempting to highlight concrete lessons from specific successes—and failures. The Institute’s aim is to help develop sensible investment models that reflect economic and political realities in both countries.

The Paulson Institute currently has three investment-related programs:

1. US-China Agribusiness Program:

The Institute’s agribusiness programs aim to support America’s dynamic agriculture sector, which needs new sources of investment to sustain innovation and create jobs. These programs include:

- A US-China Agricultural Investment Experts Group, comprised of some of the leading names in American agribusiness. The group advises on and brainstorms ideas, and examines potential investment models in the sector.



- An agribusiness-related investment workshop bringing key players and companies together. The Institute held the first workshop in Beijing in December 2012, with future sessions rotating between China and the United States.
- Commissioned studies and reports on investment opportunities in US-China agribusiness and bioenergy.

2. US-China Manufacturing Program:

In June 2013, the Institute launched a program on the trends that will determine the future of global manufacturing, manufacturing-related capital flows, and prospective investment models. We aim to identify mutually beneficial manufacturing partnerships, including those that might support job growth in the United States, that reflect these underlying economic dynamics. The Institute's principal programs include:

- Papers that the Institute is co-developing with private sector and academic partners.
- Workshops in Beijing, California, and Chicago with Chinese, American, and global CEOs and thought leaders.

3. Case Study Program:

The Institute is publishing in-depth historical case studies of past Chinese direct investments in the United States, examining investment structures and economic, political, business, and investment rationales to draw lessons learned.

About The Paulson Institute

The Paulson Institute, an independent center located at the University of Chicago, is a non-partisan institution that promotes sustainable economic growth and a cleaner environment around the world. Established in 2011 by Henry M. Paulson, Jr., former US Secretary of the Treasury and chairman and chief executive of Goldman Sachs, the Institute is committed to the principle that today's most pressing economic and environmental challenges can be solved only if leading countries work in complementary ways.

For this reason, the Institute's initial focus is the United States and China—the world's largest economies, energy consumers, and carbon emitters. Major economic and environmental challenges can be dealt with more efficiently and effectively if the United States and China work in tandem.

Our Objectives

Specifically, The Paulson Institute fosters international engagement to achieve three objectives:

- To increase economic activity—including Chinese investment in the United States—that leads to the creation of jobs.
- To support urban growth, including the promotion of better environmental policies.
- To encourage responsible executive leadership and best business practices on issues of international concern.

Our Programs

The Institute's programs foster engagement among government policymakers, corporate executives, and leading international experts on economics, business, energy, and the environment. We are both a think and "do" tank that facilitates the sharing of real-world experiences and the implementation of practical solutions.

Institute programs and initiatives are focused in five areas: sustainable urbanization, cross-border investment, executive leadership and entrepreneurship, conservation, and policy outreach and economic research. The Institute also provides fellowships for students at the University of Chicago and works with the university to provide a platform for distinguished thinkers from around the world to convey their ideas.



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